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Are Asian services markets optimal regulatory convergence areas?

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One of the striking features of trade diplomacy in recent years has been the seemingly unstoppable march of preferential trade liberalization and rule-making (Kawai and Wignajara, 2010). Of the 83 preferential trade agreements (PTAs) in force prior to the year 2000, 73 (88%) featured provisions dealing exclusively with trade in goods. By August 2013, 105 of the additional 176 PTAs in force (60%) also included provisions on services trade. The above trends signal the heightened importance of services trade in general, the growing need felt by countries to place such trade on a firmer institutional and rule-making footing and the attractiveness of doing so on an expedited basis through preferential negotiating platforms (Sauvé and Shingal, 2011).

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1. Introduction

One of the striking features of trade diplomacy in recent years has been the seemingly unstoppable march of preferential trade liberalization and rule-making (Kawai and Wignajara, 2010). Of the 83 preferential trade agreements (PTAs) in force prior to the year 2000, 73 (88%) featured provisions dealing exclusively with trade in goods. By August 2013, 105 of the additional 176 PTAs in force (60%) also included provisions on services trade. The above trends signal the heightened importance of services trade in general, the growing need felt by countries to place such trade on a firmer institutional and rule-making footing and the attractiveness of doing so on an expedited basis through preferential negotiating platforms (Sauvé and Shingal, 2011).

The rising prominence of services in trade diplomacy today very much extends to the Asia-Pacific region (Chanda, 2011; PECC and ADBI 2011, Shepherd and Pasadilla, 2012). According to the WTO's RTA-IS database, 48 of the 118 services trade agreements (STAs) in force up until August 2013 (41% of the total) involved at least one Asian trading partner and 20 of these (17% of all STAs) were entered into *between* Asian partners. Clearly then, Asian economies have been at the forefront of the burgeoning trend towards services preferentialism.

Interestingly, and as is true of preferential services commitments in general (for instance see Roy et.al. 2007; Marchetti and Roy, 2008; Roy, 2011 and Van der Marel and Miroudot, 2012), Asian trading partners have also committed more in their STAs amongst each other than multilaterally in the GATS, though the gap between GATS and STA commitments is not as large in Asia as it is in Latin America, where countries have also been heavily involved in the proliferation of STAs. One reason for such a gap may owe to the fact that the involvement of Asian countries (e.g., India, China, Japan, Singapore) in STAs is more recent than that of many Latin American countries (e.g. Mexico, Chile, Costa Rica, Colombia). Also, and perhaps more meaningfully, fewer countries in Asia have concluded STAs with the United States, a trading partner whose negotiating leverage and export competitiveness in services are particularly pronounced. Typically, US STAs are quite ambitious in market-opening terms, and services commitments undertaken under such agreements are often extended to other countries in subsequent STAs. Still, aggregate levels of commitments in STAs are,

according to some estimates, some 50% higher on average than at the WTO (Roy, forthcoming 2014).

One plausible reason advanced in the literature for the observed "commitment gap" between multilateral and preferential advances in services (Van der Marel and Miroudot, 2012) is the notion of "optimum regulatory areas" (Mattoo and Sauvé, 2010) which suggests that, by reason of their roots in the political economy of proximity, preferential or regional constructs confines may for a variety of reasons afford greater space to pursue a wider range of regulatory convergence agendas than is possible on a global scale. These are, moreover, agendas for which the supply of regional public goods (i.e. funding for infrastructures favouring regional connectivity or the establishment of institutions allowing regulatory governance to be pooled) is also more likely to be forthcoming in ways that impart deeper roots to efforts at deep integration.

Regulatory heterogeneity has been shown to exert a significantly negative impact on bilateral services trade via Mode 3 (Kox and Nordas, 2009), which is the most dominant mode of service delivery (for instance see Maurer and Magdeleine, 2008; Hoekman and Kostecki, 2009). This paper examines the role of regulatory incidence and similarity in regulatory frameworks in determining "commitment gaps" in a sample of Asian[1] STAs. The paper does so using the World Bank's Services Trade Restrictiveness Index (STRI) database (Bochert et.al. 2012).

The rest of the paper is structured as follows. Section 2 offers a synthetic review of relevant literature on preferences in services trade. Section 3 takes up the issue of "optimal regulatory convergence areas" in services and asks whether and how the quest to enhance the quality of regulatory practices and institutions is likely to be pursued with greater efficacy within preferential (regional) confines that at the global level. This then might explain the marked prevalence towards significantly WTO+ provisions found in the services chapters of PTAs. Section 4 describes the paper's methodological approach while Section 5 presents the

[1] For the purpose of this paper, "Asia" includes Bangladesh, China, Indonesia, India, Japan, Cambodia, South Korea, Sri Lanka, Mongolia, Malaysia, Nepal, Pakistan, the Philippines, Thailand and Vietnam. These are the countries for which information on services regulation is available in the World Bank's STRI database (Bochert et.al. 2012).

explanatory variables to be tested. Section 6 offers *ex ante* conjectures on the paper's expected empirical findings. Section 7 presents the data used while Section 8 presents the empirical results. Section 9 closes with a summary of main findings and their policy implications.

2. Related literature

The preferential liberalization of services markets has spawned three distinct strands of literature to date. A first strand focuses on the trade effects of services agreements as seen through aggregate and disaggregated services trade flows using advanced estimation techniques from the rapidly-evolving gravity model empirical literature (for instance see Shingal, 2009; Francois and Hoekman, 2010; Marchetti, 2011; Egger et al., 2012; Shingal, 2013; Van der Marel and Shepherd, 2013).

A second strand explores the impact that differing levels of - and heterogeneity in - regulation exert on bilateral services trade flows (for instance see Francois et al., 2007; Kox and Nordas, 2007; Kox and Nordas, 2009; van der Marel and Shepherd, 2013).

A third strand uses theoretical and empirical techniques to estimate barriers to trade in services and FDI and/or provide estimates of services trade costs (Francois et.al. 2007; Miroudot et al., 2010; Van der Marel, 2011; Miroudot et al., 2012).

This literature also seeks to explain the propensity of trading partners to negotiate STAs (for instance see Cole and Guillin, 2012; Egger and Wamser, 2013; Egger and Shingal, 2013; Sauvé and Shingal, 2013). This paper draws on the seminal work by Baier and Bergstrand (2004), which was the first to document how distance, remoteness, economic country size and factor endowments could be seen as the main economic determinants of PTA membership. Sauvé and Shingal (2013) added regulatory incidence and similarity in regulatory frameworks to the Baier and Bergstrand (2004) set of determinants to explain STA membership for the same sample of Asian countries as in this paper.

The paper closest to ours is Van der Marel and Miroudot (2012), who explored "commitment gaps" in a panel of 57 STAs over the 1995-2010 period using a different set of explanatory

variables. The measure of "commitment gap" used in this paper is constructed differently from that of Van de Marel and Miroudot and is based on a different dataset (described in detail in Section 7 and in the Appendix).

We use the Sauvé and Shingal (2013) set of determinants in our empirical analysis to examine if the factors that explain STA membership amongst Asian countries also explain "commitment gaps" in Asian STAs. In particular, we examine the role of trade restrictiveness and similarity in regulatory frameworks in determining "commitment gaps". This is especially important as the notion of "optimum regulatory areas" (Mattoo and Sauvé, 2010) suggests that the greater ease with which regulatory convergence can be pursued at the regional level helps to explain the deeper commitments observed within preferential agreements. Looking at the restrictiveness of services regulations can provide further insights on whether the extent of GATS+ commitments in STAs reflects a desire to reduce or bind more restrictive regulatory regimes or alternatively whether deeper commitments are more likely among dyads that are less restrictive to trade in services to start with.

3. Regulation in services trade: PTAs as optimal regulatory convergence areas?

Regulatory measures affect cross-border trade and investment in services by increasing both the fixed cost of entering a market and the variable cost of servicing that market. The importance and potentially trade- and investment-inhibiting impact of domestic regulation on service sector performance has received significant attention in policy research circles (Kox and Nordas, 2007, 2009; Mattoo and Sauvé, 2003). Where regulation is destination or location-specific, the resulting compliance costs can become sunk, which makes the decision to export similar to an investment decision, and involves a self-selection process studied in the heterogeneous firm literature (Melitz, 2003; Helpman, Melitz and Yeaple, 2004; Bernard, Redding and Scott, 2007; Chaney, 2008). Essentially, only firms with the highest productivity and/or lowest marginal costs tend to profitably overcome sunk market-entry costs, thereby self-selecting themselves into becoming exporters.

The prevalence of location-specific sunk costs in many key service industries, particularly those characterized by network attributes (e.g. telecommunications, energy, water or

sanitation services, transport) and which typically operate in oligopolistic market structures, may confer durable trade- and investment-impeding first-mover advantages to certain firms over others, a process that preferential liberalization can lock in with potentially adverse welfare- and competition-impeding impacts (Mattoo and Fink, 2002).

In the context of an STA, regulatory requirements assume significance for firms in both importing and exporting markets. Such agreements typically pursue a range of objectives. These include: first, to bring down the level and incidence of restrictive regulation on a reciprocal basis; second, to provide greater predictability and security of access and market operation through the undertaking of legally binding commitments, thereby exploiting the "signaling" properties of enforceable treaty instruments; and third, to reap the trade- and investment facilitating benefits stemming from convergence, approximation (including through mutual recognition) and ultimately (but less frequently) harmonization of regulatory practices between trading partners.

The gains from PTAs are likely to be significant in areas where there is scope for attaining economies of scale and promoting increased competition. While such gains can in principle be realized through MFN liberalization conducted at the multilateral level, in practice, the integration of markets often requires a convergence of regulatory regimes. Such convergence will likely prove more feasible in a preferential context (bilateral or regional) where proximity, whether geographic or in terms of income levels, language, common colonial legacies or legal traditions, favors closer institutional and regulatory ties and repeat interaction among regional officials and institutions.

The regulatory intensity of services trade prompts the question of whether and how PTAs can be conduits for trade- and investment-facilitating convergence in domestic regulatory practices. Simply put, under what circumstances is a country more likely to benefit from cooperation in a preferential setting than in a multilateral one? And what attributes are most likely to prompt pairs or groups of countries to aim for deeper integration through regional or preferential approaches to regulatory convergence?

There is much in both the public goods and monetary theory literature (regarding the pre-conditions for the establishment of optimal currency areas) to suggest that regulatory cooperation may well be more desirable among a subset of countries than if pursued on a

global scale (Cooper, 1976). There is, however, little, if any, empirical guidance on the payoffs to regulatory cooperation—i.e. on the costs and benefits of mutual recognition agreements or the deeper harmonization or approximation of regulatory standards, particularly in service industries, not least for reasons of generalized data paucity. Such a dearth of empirical evidence hinders the task of determining the appropriate scope and depth, as well as the proper geographical confines or the optimal institutional forms, of regulatory cooperation.

As discussed in Mattoo and Sauvé (2011), optimal regulatory convergence areas can be thought of as defining sets of countries whose aggregate welfare would be maximized as a result of the adoption of convergent regulatory norms and practices. Such an area would balance the benefits and costs of participation in a preferential agreement.

The gains from eliminating policy differences through regulatory approximation or harmonization will ultimately depend on the scope for creating truly integrated markets, which as noted above is most often conditioned by "natural" ties between countries as well as contingent on factors such as geographic and linguistic proximity. The costs of pursuing a regulatory convergence agenda will depend for their part on the *ex ante* similarities (or divergences) in regulatory or collective preferences and the compatibility of the regulatory regimes and institutions designed in response to such preferences.

In the very definition of an optimal regulatory convergence area is the notion that cooperation can be an important means of sharing information and experience on regulatory reform initiatives and of identifying good regulatory practices with a view to their eventual diffusion among parties to an integration process. Such diffusion can be especially useful for regulating novel services in sectors characterized by continuous technical or regulatory change, such as in digital trade or financial services.

Developing countries may have a particular interest in cooperating with advanced industrial countries that tend to have the longest experience with regulatory reform, in which the newest technologies and their regulatory implications are often first introduced, and whose regulatory regimes and institutions tend towards greater sophistication and expertise.

The rising share of STAs conducted along North-South lines, including in Asia and notably within the sample of countries covered by this paper, is doubtless illustrative of such a policy belief, suggesting that the quest for "optimal" regulatory convergence may at times involve heterogeneous country groupings displaying highly differentiated levels of regulatory and institutional development. The likelihood of so-called "optimizing heterogeneity" may in fact be greater for services to the extent that proximity in services trade is a considerably more elastic notion than that prevailing in the realm of goods trade. This is so for two reasons. A first reason finds its origin in the growing share of services transacted over digital networks. Such trade is broadly indifferent to the notions of time and space that remain determinative to many goods transactions. A second reason derives from the fact that despite the rapid rise of digital trade and the substitution effects (as between Modes 1 (cross-border supply) and 3 (commercial presence)), the bulk of services trade continues to take place through the establishment of a commercial presence (i.e. through foreign direct investment) in the importing market. This entails the need for full and immediate compliance with host country regulatory regimes. For developing country suppliers, meeting such compliance costs can just as well represent an important spur to quality upgrading or a major hurdle to export growth.

Whether or not a country benefits from regulatory convergence or approximation, its willingness to participate in such efforts and in PTAs designed for this purpose will thus likely hinge on where regulatory standards are set, the level at which they are set and the regulatory environment to which the standards respond. Such considerations will determine who must ultimately bear the costs associated with adopting agreed standards.

The incentive to make regulations converge will also likely depend significantly on the relative size of markets. Because smaller countries tend, more often than not, to be "rule-takers" rather than "rule-makers", the latter observation may explain why small countries acceding to the European Union (EU), or why developing country members of North-South PTAs, generally accept that they must bear the full costs of transiting towards new and higher regulatory standards.

4. Methodology

This paper takes stock of a number of considerations raised in the preceding section by exploring whether and how the observed "commitment gap" between the level of policy bindings achieved under PTAs and those on offer in the WTO (including ongoing negotiations under the Doha development Agenda) can be seen to relate, among other influences, to a quest for trade-facilitating regulatory convergence (and upgrading) among Parties.

The paper does so by looking at the STAs of a heterogeneous sample of 15 Asian countries for which Bochert *et.al*. (2012) have provided data on the restrictiveness of services regimes (STRI) using the same set of control variables, **x**, used in Baier and Bergstrand (2004) and Sauvé and Shingal (2013).

In their work, Baier and Bergstrand (2004) showed how a set of control variables (**x)** determined the propensity to negotiate a PTA. As with Van der Marel and Miroudot (2012), this paper also expects **x** to influence the "depth" of commitments in a service context. In Baier and Bergstrand's (2004) theoretical framework, deeper tariff cuts are seen to lead to greater net welfare gains on average for the partner countries. Similarly, "greater" services commitments in STAs (relative to the GATS) can also be assumed to be net welfare improving for the member countries.

Jacob Viner's (1950) classic work on the welfare economics of preferential liberalization has long drawn attention to the fact that one cannot generally assume in an *ex ante* manner that preferential liberalization will always and everywhere produce net welfare gains. However, to the extent that welfare determinations in services trade do not involve lost fiscal revenue stemming from the preferential elimination of tariffs (measures subject to preferential liberalization in services are rarely significant sources of government revenue), one may be more sanguine that the welfare impact of services preferences will likely be more favorable (less damaging). Such a result is magnified when one considers the dynamic properties of services liberalization given the predominant intermediary nature of many producer services. The latter considerations assume heightened importance in a world of trade in tasks and production fragmentation where value chains (including the service inputs they rely on) are in many industries more likely to be regional than global in character (Estevadeordal and Suominen, 2012). This "services as intermediates" story helps to explain the rising demand for the preferential liberalization of services trade.

Formally, $CG_{ij} = \acute{\alpha} + \acute{\eta}x_{ij} + \varepsilon_{ij}$…….……(1)

where CG_{ij} is the "Commitment Gap", $\mathbf{x_{ij}}$ is the vector of control variables described in the following section and ε_{ij} is the error term.

The paper uses three different measures of CG, which also act as robustness checks.[2] These include:

(a) the average number of "new sub-sectors" committed to in STAs relative to the GATS in modes 1 and 3 between dyad ij and ji;

(b) the average number of "sub-sectors with better commitments" in STAs relative to the GATS in modes 1 and 3 between dyad ij and ji; and

(c) a measure of the "value of better commitments" in STAs relative to the GATS in modes 1 and 3 between dyad ij and ji.

The paper finds each of the three measures of CG to be characterized by heteroskedasticity, which renders a log-linear OLS estimation biased (see Cameron and Trivedi, 2005; Santos Silva and Tenreyro, 2006). Therefore, recourse is made to the Poisson pseudo-maximum likelihood (PPML) estimation for inference.

5. Explanatory variables

Following Baier and Bergstrand (2004), for any dyad ij, the vector **x** includes two geographic variables: "$Natural_{ij}$" which is the inverse of distance between i and j and "$Remote_{ij}$[3]" which

[2] More detail on the data underlying these measures is provided in Section 7 and in the Appendix to the paper.

[3] Formally, $$Remote_{ij} = dcont_{ij} \times \left\{ \frac{\left[\log\left(\sum_{k=1,k\neq j}^{N} d_{ik}/(N-1)\right) + \log\left(\sum_{k=1,k\neq i}^{N} d_{jk}/(N-1)\right)\right]}{2} \right\}$$

is the simple average of the mean distance between both countries and their partners. Economic determinants include country sizes, represented by $SRGDP_{ij}$, which is the sum of the logs of real GDP of country i and j and $DRGDP_{ij}$, which is the absolute value of the difference between the logs of real GDP of both countries. DKL_{ij} and $DROWKL_{ij}$ determine the role of factor endowments in explaining "commitment gaps" in Asian STAs. DKL_{ij} is the absolute value of the difference between the logs of capital-labour ratios of country i and j. To compare with ROW endowments, $DROWKL_{ij}$[4] is included and calculated as the absolute value of the difference between the logs of capital-labour ratios of country i and j and those of ROW.

Institutional variables in vector **x** include common language, colonial antecedents and legal regimes. As in Sauvé and Shingal (2013), the paper also controls for similarity of regulatory frameworks between partners by including the absolute value of the difference between the logs of STRI of both countries ($DREG_{ij}$) and for the incidence of restrictive regulation by including the sum of the logs of STRI of both countries ($SREG_{ij}$).

In line with the endogenous protection literature (Trefler, 1993), the paper also controls for "import penetration" by using data on these countries' average bilateral trade in logs (BTG). Finally, to control for the politics of preferentialism *à la* Grossman and Helpman (1995), the analysis also includes the absolute value of the difference in the logarithms of a dyad's average global trade flows (DTRADE).

Finally, since one can reasonably expect GATS+ commitments in STAs to also depend on the existing level of GATS commitments, the paper also uses measures of GATS commitments corresponding to the alternative measures of CG noted above as additional explanatory variables ($GATS_{ij}$).

6. Expected impacts

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where "d" is the bilateral distance in kilometers and "$dcont_{ij}$" is equal to one if i and j are located on the same continent, zero otherwise.

[4]Formally, $$DROWKL_{ij} = \frac{1}{2}\left[\left|\log\left[\frac{\sum_{k=1,k\neq j}^{N} K_k}{\sum_{k=1,k\neq i}^{N} L_k}\right] - \log\left(\frac{K_i}{L_i}\right)\right| + \left|\log\left[\frac{\sum_{k=1,k\neq j}^{N} K_k}{\sum_{k=1,k\neq i}^{N} L_k}\right] - \log\left(\frac{K_j}{L_j}\right)\right|\right]$$

A priori, with the exception of $DRGDP_{ij}$, $DROWKL_{ij}$, DTRADE and $GATS_{ij}$, the coefficients of all the other variables are expected to be positive. The welfare gains from "deeper" services commitments between neighbouring countries are likely to be larger especially if the countries are also remote from the rest of the world (ROW). Similar and larger economically-sized countries are also likely to gain more due to the exploitation of economies of scale and the presence of greater varieties flowing from deeper integration. The greater the difference in relative factor endowments between countries, and the larger the intercontinental trade costs, the greater the degree to which trade creation is likely to emerge from agreements aiming at deeper integration.

A higher level of bilateral merchandise trade between partners is also likely to be associated with a greater inclination to negotiate a deeper trade accord extending to services to support or at least provide predictability for goods-related supply chains and enhance the conditions under which intermediate services are supplied (WTO, 2011; Baldwin and Lopez-Gonzalez, 2013). Political pressure to prevent an agreement is reduced the more 'balanced' is potential trade between partner countries (which would be reflected in smaller values of DTRADE).

Finally, in line with the paper's "optimal regulatory convergence area" hypothesis, dyads with common institutions and more homogeneous regulatory frameworks are also more likely to enter into "deeper" agreements. On the other hand, it is less certain whether dyads characterized by higher ex ante levels of policy restrictiveness would promote or inhibit deeper commitments. They may just as easily prompt or deter them. Accordingly, the sign of the SREG coefficient could just as well be positive or negative.

7. Data

Our dependent variable measures GATS+ commitments undertaken in STAs. To do so, the paper relies on the dataset on services commitments in PTAs that was initially developed by Marchetti and Roy (2008) and subsequently expanded by Roy (2011). Overall, that dataset covers 53 WTO Members (counting the EU and its Member States as one) and 67 STAs. For the purposes of the present paper, the analysis was further extended to cover all STAs to which the paper's country sample members are Parties.

The dataset covers services commitments under mode 1 (cross-border trade) and mode 3 (commercial presence), which represent the bulk – over 75% - of global services trade. While a similar assessment with respect to mode 4 (movement of natural persons) would be valuable because of this mode's own importance as well as the link with the other two modes of supply in the business models of internationally active service firms, commitments under this mode tend to be horizontal in nature, and would therefore best be captured by a different approach than the one used here. Meanwhile, since the supply of services through mode 2 (consumption abroad) is largely unrestricted, comparing GATS and STA commitments in this area would provide limited value-added and might actually introduce a bias in the results. We take into account GATS offers made in the course of the ongoing Doha Round negotiations in the WTO, and not solely GATS commitments in force. This provides a more accurate picture of the value-added of STA commitments relative to the latest developments on the multilateral front.

For purposes of analysing GATS+ commitments in STAs, we use three different indicators. First, we derive from the dataset the number of sub-sectors that are uncommitted under the GATS but subject to commitments in STAs. Second, we use the number of sub-sectors that are subject to better commitments in STAs than under the GATS, whether these are 'new' commitments or commitments with improved levels of guaranteed access as compared to the GATS.

For the third indicator, we again look at sub-sectors where GATS+ commitments are undertaken, but we take into account the level of commitments by differentiating between 'full commitments' (without restrictions) and 'partial commitments' (subject to certain restrictions). A value of 1 is given to sub-sectors where the new or improved commitments are 'full' (i.e. without limitations), and a value of 0.5 if they are 'partial'. Such indicators therefore do not attempt to quantify the *quality* or *level* of restrictiveness of commitments. This approach follows the methodology first developed by Hoekman (1996). Given the way commitments are scheduled in the area of trade in services, doing otherwise would raise various complex interpretation issues. Further details on the dataset are provided in the Appendix.

Data on STAs are taken from the WTO's Regional Trade Agreements Information System (RTA-IS) database.

The earliest STA involving at least one Asian partner (New Zealand – Singapore, neither of which are in this paper's sample) entered into effect on 1 Jan 2001. Since trade agreements are typically phased in over multi-year transition periods, to control for potential endogeneity in the paper's estimation, the data used with regard to the time-varying independent variables are for the year 1980. The choice of this early year is also likely to control for any domino effects that the earliest STAs may have exerted on the recent wave of services preferentialism involving Asian economies.

The CEPII gravity dataset (Head et.al. 2010) provides geographic distances between capital cities, used to compute $Natural_{ij}$ and $Remote_{ij}$. Data on real GDP are taken from the Penn World Tables (PWT) and these are used to calculate $SRGDP_{ij}$ and $DRGDP_{ij}$.

Factor endowment ratios are computed from estimated capital stock and the number of workers. We do this following Foley's methodology used in the Extended PWT[5] and these ratios enable the calculation of DKL_{ij} and $DROWKL_{ij}$. Following Hulton and Wycoff (1981), the Perpetual Inventory Method (detailed in OECD, 2009) is used to estimate the stock of capital[6] and the number of workers[7] is calculated using the PWT. The capital-labour ratio is thus the estimated capital stock divided by the number of workers.

[5] https://sites.google.com/a/newschool.edu/duncan-foley-homepage/home/EPWT

[6] Formally, $K^{stock}{}_t = \sum_i^T (1-d)^{T-i} I_{T-i}$ + I(1-d/2) and $I_t = Pop_t RGDP^{pc}{}_t k^i{}_t$

where I_t corresponds to the real investment in year t, obtained from real investment share of GDP ($k^i{}_t$), real GDP per capita in constant dollars (chain index) denoted by $RGDP^{pc}{}_t$, and population (Pop_t) provided by the Penn World Tables (PWT). By assumption, i = 1,….14 i.e. the asset life is 14 years and the depreciation rate, d is 7.5%. $K^{stock}{}_t$ is the cumulated depreciated sum of the past investments.

[7] Formally, $N_t = \frac{Pop_t RGDP^{pc}{}_t}{RGDP^w{}_t}$

where N_t is the number of workers and $RGDP^w{}_t$ is the real GDP per worker in constant dollars.

Data on common language and colonial antecedents are taken from the CEPII gravity dataset (Head *et al.* 2010), while those on legal origins are compiled using Shleifer (1999).[8] All trade data were averaged over 1978-1980 to minimize fluctuations in recording practices. Data on BTG_{ij} were sourced from UN Comtrade. The paper uses goods trade data as a measure of complementarity of bilateral goods and services trade, especially since bilateral services trade data are not available for a period as early as 1978-1980. DTRADE was calculated using data on world services trade from the World Bank's World Development Indicators.

The measure of regulation in services markets used in this paper is the Services Trade Restrictiveness Index (STRI) of the World Bank (Bochert et.al. 2012). Compiled from responses to questionnaires sent out by the World Bank to 79 developing countries and from publicly available information for OECD countries, the STRI is a quantitative index of restrictions on services trade encompassing 103 countries, 5 major service sectors and 19 sub-sectors. The information is also available by modes of service delivery.

A comparison of STRI by regions/groups shows that the Middle-East & North Africa (MENA) has the most restrictive services trade policies, followed by South Asia (SA), East Asia & the Pacific (EAP) and Sub-Saharan Africa (SSA), with the last also being the most heterogeneous cohort (see Table 1). As expected, the OECD and East & Central Asia (ECA) not only report the lowest STRI values but also form the most homogeneous cohorts. Significantly, the Asian region is not only very restrictive but also highly heterogeneous in terms of services regulatory frameworks, which as noted above makes it a pertinent case study for the purposes of our enquiry.

Table 1: Comparison of STRI across regions/groups

Region/Group	**LAC**	**ECA**	**EAP**	**OECD**	**SSA**	**SA**	**MENA**	**WORLD**
Mean	21.6	18.8	39.1	19.1	32.0	43.9	45.2	28.3
Standard deviation	10.0	6.7	13.9	4.8	16.6	13.7	11.2	14.9

[8] http://www.economics.harvard.edu/faculty/shleifer/files/qgov_web.xls

Source: Author calculations based on Borchert *et.al*. 2012.

The paper's country sample comprises: Bangladesh, Cambodia, China, Indonesia, India, Japan, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, South Korea, Sri Lanka, Thailand and Vietnam. Of the sample, ten countries - Cambodia, China, Indonesia, India, Japan, Malaysia, the Philippines, South Korea, Thailand and Vietnam - are currently taking part in the services talks of ongoing negotiations towards the establishment of a Regional Comprehensive Economic Partnership (RCEP) linking ASEAN with a group of six non-member countries. Six of the sample countries - Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Vietnam - form part of ASEAN and its quest to establish an ASEAN Economic Community, including in services under the ASEAN Framework Agreement on Services (AFAS), by 2015. Meanwhile, four sample countries - Japan, Malaysia, South Korea and Vietnam - are currently negotiating services within the Trans-Pacific Partnership. The sample further comprises five of the seven member countries of the South Asian Association for Regional Cooperation's (SAARC) Trade in Services Agreement (SATIS). These are: Bangladesh, India, Nepal, Pakistan and Sri Lanka.

Of all countries in the paper's sample, only Mongolia has yet to conclude a PTA, though the country is currently negotiating a comprehensive partnership agreement with Japan which, if concluded, would also cover trade in services. The latter negotiating dyad illustrates well how countries at starkly different levels of development may yet find compelling reasons to pursue deep integration agendas across a broad range of policy areas. Table 2 below offers a measure of the extent of the country sample's heterogeneity across a range of indicators of regulatory and governance indicators of particular relevance to services markets. In considering the results presented in Section 8 below, it is important to recall the paper's focus on specific country or agreement dyads. Taken as a whole, the sample countries depicted in Table 2 clearly do not form anything approximating optimal regulatory convergence areas. Evidence of such settings must rather be sought among the subset of regional groupings and negotiating constructs described above where greater overall coherence, notably in geographic terms, (RCEP, ASEAN, SAARC) can be seen as important drivers of integration efforts in services markets.

Table 2: Services and Governance-Related Indicators, Selected Asian Countries, 2013

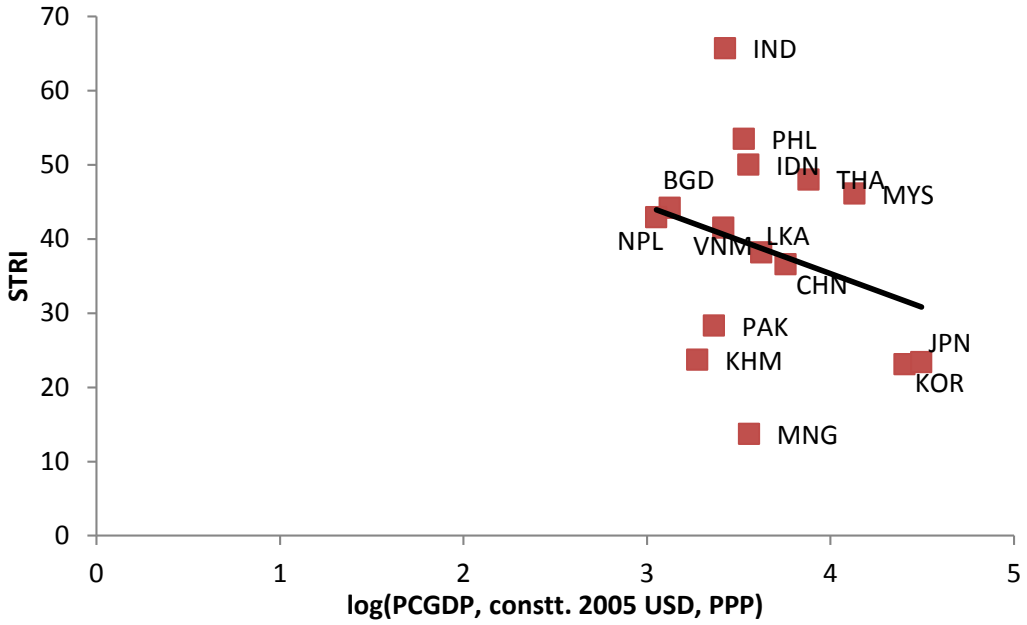
Country / Indicator	Bangladesh		China		India		Japan		Mongolia		Nepal		Pakistan		South Korea		Sri Lanka	
	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)	Score (1-100)	World Rank (1-141)
Institutions	**45.3**	**127**	**48.3**	**113**	**51.9**	**102**	**83.5**	**20**	**62.5**	**63**	**45.9**	**125**	**40.2**	**135**	**76.0**	**32**	**42.4**	**134**
Government Effectiveness	15	127	41.7	58	37.6	70	75.3	23	21.5	110	16.7	122	16.0	123	72.2	24	36.1	73
Regulatory Environment	40.9	130	50.3	116	63.6	77	88.6	20	69.8	55	43.6	126	44.9	125	67.7	65	23.1	138
Business Environment	60.9	81	55.5	98	47.7	124	81.9	18	60.7	82	57.3	90	54.3	103	87.2	12	60.1	84
Human capital and research	**11.7**	**138**	**40.6**	**36**	**21.5**	**105**	**57.2**	**12**	**29.6**	**77**	**13.2**	**130**	**7.7**	**141**	**64.2**	**2**	**19.7**	**110**
Education	18.6	137	68.7	20	27.6	127	66.7	25	53.3	72	30.4	124	8.1	141	59.0	49	35.3	115
Tertiary Education	10.9	122	11.7	120	6.5	133	35.0	57	32.0	64	9.2	128	3.5	139	56.0	7	21.4	96
Knowledge workers	27.8	120	62.9	28	37.4	95	68.4	12	42.3	70	29.2	117	30.4	114	63.6	24	33.0	110

R&D	5.4	81	41.5	24	30.9	30	69-9	6	3.3	86	0.0	123	11.3	61	79.3	2	2.5	92
Infrastructure	**22.9**	**109**	**39.8**	**44**	**27.5**	**89**	**56.3**	**9**	**36.1**	**54**	**19.3**	**122**	**19.8**	**120**	**60.7**	**4**	**28.2**	**85**
ICT	18.2	114	32.9	45	25.6	96	74.4	11	42.7	55	13.0	132	19.8	109	87.3	1	22.2	103
Investment	**22.7**	**86**	**46.5**	**21**	**43.1**	**24**	**49.2**	**16**	**33.2**	**39**	**16.3**	**121**	**19.1**	**102**	**64.4**	**8**	**29.0**	**54**
Ease of protecting investors	69.3	26	50.4	96	61.5	49	72.2	21	69.6	25	53.7	79	65.6	34	61.9	49	61.9	42
Intensity of local competition	**61**	**82**	**71.7**	**35**	**72.9**	**32**	**84.1**	**2**	**60.1**	**85**	**52.6**	**110**	**60.4**	**84**	**79.1**	**10**	**74.9**	**24**
Global Innovation Index	**24.5**	**130**	**44.7**	**35**	**36.2**	**66**	**52.2**	**22**	**35.8**	**72**	**25.0**	**128**	**23.3**	**137**	**53.3**	**18**	**30.4**	**98**
Creative goods and services	7.7	134	34-4	69	39.4	53	49.9	20	28.8	89	37.8	57	22.8	107	42.9	44	34.1	71
Online creativity	11.7	123	7.4	136	17.5	105	38.2	42	23.6	83	15.8	113	17.2	107	35.0	47	18.1	100

Source: WIPO (2013), *Global Innovation Index 2013*, Geneva: World Intellectual Property Organization.

Moreover, as Figure 1 below shows, a plot of the STRI against the log of real GDP per capita for the Asian countries in our sample for which STRI data are available suggests that the restrictiveness of services regimes is negatively correlated with the level of economic development.

Figure 1: STRI by level of economic development (2008)



Source: World Bank STRI and Global Development Indicators.

We also find SREG and DREG to be correlated in the sample of Asian economies under study (correlation coefficient = -0.45), so these were used as explanatory variables separately in different specifications.

Altogether the paper examines trends obtaining among 105 trading partnerships within the sample of Asian economies, of which 37 have an STA in force. The mean "value of better commitments" in STAs relative to the GATS was found to be 13.3 for these 37 dyads; and 15 of the 37 dyads reported a larger than mean "value of better commitments". While this result was largely due to STAs amongst the ASEAN members, where the mean "value of better commitments" was found to be 22.2, the India-Malaysia, Pakistan-Malaysia and ASEAN (Indonesia and Philippines)-Japan STAs also reported above-average "value of better (than WTO) commitments". All data are summarized in Annex Table A1 below.

8. Empirical results

The results from using the first measure of CG as the dependent variable are reported in Tables 3a and 3b. The first three specifications control for economic and trade determinants, first separately and then together. Specification 4 introduces institutional controls while specifications 5 and 6 include combinations of these with economic and trade determinants. The final specification 7 controls for all determinants together.

We find the coefficient on the $GATS_{ij}$ variable to lack statistical significance in all specifications; this variable was therefore omitted from the final specification. The common law and common colony variables were also found to be strongly correlated (correlation coefficient = 0.54). this resulted in the omission of the common colony variable from the paper's final specification.

<Insert Tables 3a and 3b here>

The results reported in columns 1, 2 and 4 of the above Tables suggest that economic determinants exert a greater influence than both institutional and trade factors on "commitment gaps" in Asian services markets though the model has the lowest explanatory power when only institutional determinants are used.

Geography (dyads that are less distant and more remote from the rest of the world) and pre-existing trade patterns seem to determine "commitment gaps" in Asian services markets but the role of common language is (counter-intuitively) found to be negative. The positive coefficient on BTG suggests that deeper commitments are sought in preferential STAs to support regional goods value chains. The coefficient on DTRADE is consistently negative as expected. The variable for common legal origins and other economic determinants generally lack statistical significance, with the exception for the coefficient on DRGDP that is found to be negative (as expected) in some specifications.

While bivariate correlations suggest that both more restrictive and homogeneous dyads (in terms of STRI) tend to commit more in STAs relative to the GATS, the paper's multivariate analysis provides more robust evidence only for the former. The coefficient on DREG in

Table 3a lacks statistical significance in the more fully specified columns (5) and (7), while that on SREG in Table 3b is consistently positive.

The results from using the second and third measure of CG as dependent variables are reported in Tables 4a, 4b and 5a and 5b respectively. These results are qualitatively similar to those reported in Tables 3a and 3b. The coefficient on BTG is consistently positive now and that on DROWKL is negative (as expected) in column (5) in Tables 4a and 4b. The statistical insignificance of the coefficient on DREG is even more consistent in the results reported in Tables 4a and 4b, thereby providing unequivocal support to the proposition that Asian services markets do not on the whole display signs of being "optimal regulatory convergence areas."

<Insert Tables 4a, 4b, 5a and 5b here>

Finally, given that ASEAN Members had the "deepest" STAs in the paper's sample of Asian economies, the paper also examined the extent to which its empirical findings were driven by the GATS+ commitments therein. Accordingly, the paper estimated equation (1) using the three alternative measures of CG but on a sub-sample of countries that excluded the ASEAN dyads. Interestingly, the coefficient on $Natural_{ij}$ was negative in these results, suggesting that GATS+ commitments amongst non-ASEAN Asian partners were impervious to the cost-increasing effects of distance. $Remote_{ij}$, SREG, common language and legal origins all lacked statistical significance in these results, though the coefficients on SRGDP, DROWKL, BTG and DTRADE all reported the expected signs. Significantly, the coefficient on DREG now turned positive, suggesting that the services markets of non-ASEAN Asian economies were also far from being "optimal regulatory convergence areas."

9. Conclusion

This paper examined the determinants of GATS+ commitments in Asian STAs, in particular the role of regulatory restrictiveness and convergence.

The empirical results on offer suggest that geography exerts significant influence on the observed 'commitments gap'. This may suggest that, despite the fact that services transactions are generally far less dependent on spatial considerations, the desire for greater

regional integration – or the intention to build on existing regional integration that had historically focused on goods trade – is a particularly important factor for Asian countries. This is consonant with the region's growth model centered on manufacturing exports and the demand emanating, in a world of increasing production fragmentation, to source intermediate inputs (both goods and services) most efficiently within the periphery of (still predominantly) regional supply chains.

Among economic variables, the positive and significant relationship found between bilateral trade flows and GATS+ bindings clearly stands out. This may lend support to the idea that bindings in the area of services are increasingly perceived by governments as important to complement goods trade. Once more, this has particular resonance in Asia given the growing insertion of the region in supply chain production. Services (e.g., transportation and logistics, telecommunications, finance, business and professional services) play a significant role in goods-dominated supply chains, and legally bound commitments in treaty instruments (governing both trade and investment) assume heightened value as they provide a degree of predictability and stability that is essential for the proper functioning of complex cross-border operations (Baldwin and Kawai, 2013; Baldwin and Lopez-Gonzalez, 2013).

The impact of bilateral goods trade in the paper's estimations is also consistent with suggestions that GATS+ commitments are used by many countries as a key negotiating chip to obtain better preferential access with respect to goods trade (Marchetti and Roy, 2008; Marchetti *et.al.*, 2012). The more bilateral trade between dyads is important, the more services bindings appear to gain relevance as a source of negotiating trade-offs for concessions relating to goods trade.

Finally, the paper found scant support linking the commitment gap with homogeneity in terms of regulatory restrictiveness. This would appear to suggest that Asian services markets may not on the whole reveal significant "optimal regulatory convergence area" attributes or that regulatory convergence is a prime driver behind the rising tide of STAs in the region. However, the paper's full sample results offer strong evidence that dyads characterized by the maintenance of more restrictive services regimes appear to undertake more GATS+ commitments in STAs. For one, this is consistent with the perception that the value of STAs rests mostly in the predictability and legal certainty provided by legal bindings while generally produce little by way of *de novo* liberalization (though there are some important

exceptions). In this context, the paper's findings also suggest that the interest in securing better bindings is greater with countries that are more restrictive than with those that are more open *ab initio*. While the findings presented in this paper are likely specific to the choice of sample countries within Asia, it would be interesting to examine if they hold for a larger sample of trading partners.

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Table 3a: Explaining "new sectors" committed to in STAs relative to the GATS

	PPML estimation: Dependent variable CG ("new sectors")						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	21.425***		16.930***		22.722***		17.647***
	(4.399)		(3.932)		(5.356)		(5.032)
Natural	0.918***		0.623*		1.080***		0.862**
	(0.252)		(0.286)		(0.279)		(0.323)
SRGDP	-0.002		-0.079		-0.000		-0.018
	(0.074)		(0.092)		(0.077)		(0.113)
DRGDP	-0.371**		-0.099		-0.316*		-0.001
	(0.126)		(0.172)		(0.132)		(0.194)
DKL	0.033		0.047		0.023		0.040
	(0.122)		(0.136)		(0.115)		(0.137)
DROWKL	-0.139		0.005		-0.310		-0.231
	(0.222)		(0.214)		(0.219)		(0.240)
BTG		0.217**	0.142*			0.224***	0.099
		(0.067)	(0.061)			(0.066)	(0.068)
DTRADE		-0.941***	-0.657**			-0.864***	-0.670*
		(0.216)	(0.253)			(0.167)	(0.266)
DREG				-1.781*	-0.501	-1.589*	-0.416
				(0.745)	(0.485)	(0.735)	(0.585)
Com_lang				-0.168	-1.287***	-0.805	-1.342***
				(0.773)	(0.340)	(0.618)	(0.335)
Com_law				-0.637	-0.488	-0.793#	-0.398
				(0.535)	(0.320)	(0.408)	(0.353)
Constant	-186.745***	-0.837	-146.129***	2.413***	-196.981***	-0.183	-152.712***
	(38.968)	(1.240)	(35.619)	(0.365)	(47.268)	(1.160)	(45.631)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.587	0.212	0.618	0.069	0.749	0.378	0.762

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Table 3b: Explaining "new sectors" committed to in STAs relative to the GATS

PPML estimation: Dependent variable CG ("new sectors")							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	21.425***		16.930***		18.475***		16.407***
	(4.399)		(3.932)		(4.105)		(3.955)
Natural	0.918***		0.623*		1.267***		0.859**
	(0.252)		(0.286)		(0.252)		(0.298)
SRGDP	-0.002		-0.079		0.097		-0.035
	(0.074)		(0.092)		(0.073)		(0.118)
DRGDP	-0.371**		-0.099		0.020		0.122
	(0.126)		(0.172)		(0.142)		(0.172)
DKL	0.033		0.047		0.252		0.245
	(0.122)		(0.136)		(0.199)		(0.182)
DROWKL	-0.139		0.005		-0.583#		-0.280
	(0.222)		(0.214)		(0.343)		(0.330)
BTG		0.217**	0.142*			0.216**	0.162*
		(0.067)	(0.061)			(0.067)	(0.068)
DTRADE		-0.941***	-0.657**			-0.720***	-0.489**
		(0.216)	(0.253)			(0.178)	(0.187)
SREG				1.886***	1.888***	0.996*	1.668***
				(0.423)	(0.535)	(0.407)	(0.444)
Com_lang				-0.693	-1.618***	-0.908	-1.441***
				(0.865)	(0.319)	(0.736)	(0.391)
Com_law				-0.811	-0.482*	-0.716	-0.441#
				(0.531)	(0.233)	(0.464)	(0.236)
Constant	-186.745***	-0.837	-146.129***	-12.084***	-176.172***	-8.170*	-154.767***
	(38.968)	(1.240)	(35.619)	(3.102)	(37.800)	(3.437)	(38.373)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.587	0.212	0.618	0.124	0.840	0.264	0.842

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Table 4a: Explaining "sectors with better commitments" committed to in STAs relative to the GATS

PPML estimation: Dependent variable CG ("sectors with better commitments")							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	17.133***		12.625***		17.457***		12.582**
	(4.191)		(3.497)		(4.645)		(4.054)
Natural	0.756***		0.385#		0.867***		0.561*
	(0.222)		(0.229)		(0.260)		(0.263)
SRGDP	0.014		-0.119		0.019		-0.060
	(0.072)		(0.083)		(0.072)		(0.103)
DRGDP	-0.288**		0.014		-0.289*		0.056
	(0.104)		(0.163)		(0.118)		(0.182)
DKL	0.140		0.164		0.129		0.161
	(0.130)		(0.149)		(0.132)		(0.163)
DROWKL	-0.401#		-0.246		-0.503*		-0.413
	(0.235)		(0.213)		(0.242)		(0.268)
BTG		0.239***	0.195***			0.238***	0.152*
		(0.064)	(0.059)			(0.064)	(0.066)
DTRADE		-0.857***	-0.725**			-0.829***	-0.744**
		(0.172)	(0.223)			(0.145)	(0.241)
DREG				-1.142*	-0.079	-0.788	-0.039
				(0.583)	(0.419)	(0.558)	(0.473)
Com_lang				0.081	-0.748*	-0.524	-0.785*
				(0.632)	(0.355)	(0.513)	(0.313)
Com_law				-0.543	-0.263	-0.641#	-0.199
				(0.481)	(0.341)	(0.365)	(0.354)
Constant	-148.866***	-0.808	-106.838***	2.652***	-150.889***	-0.289	-106.998**
	(36.582)	(1.175)	(31.251)	(0.327)	(40.364)	(1.119)	(36.467)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.586	0.269	0.648	0.044	0.672	0.316	0.702

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Table 4b: Explaining "sectors with better commitments" committed to in STAs relative to the GATS

PPML estimation: Dependent variable CG ("sectors with better commitments")							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	17.133***		12.625***		13.913***		11.406**
	(4.191)		(3.497)		(4.011)		(3.638)
Natural	0.756***		0.385#		0.913***		0.410#
	(0.222)		(0.229)		(0.221)		(0.238)
SRGDP	0.014		-0.119		0.066		-0.139
	(0.072)		(0.083)		(0.069)		(0.106)
DRGDP	-0.288**		0.014		-0.017		0.095
	(0.104)		(0.163)		(0.136)		(0.152)
DKL	0.140		0.164		0.363		0.357#
	(0.130)		(0.149)		(0.227)		(0.204)
DROWKL	-0.401#		-0.246		-0.857*		-0.464
	(0.235)		(0.213)		(0.406)		(0.362)
BTG		0.239***	0.195***			0.240***	0.233**
		(0.064)	(0.059)			(0.062)	(0.072)
DTRADE		-0.857***	-0.725**			-0.718***	-0.560***
		(0.172)	(0.223)			(0.149)	(0.170)
SREG				1.480***	1.434**	0.676#	1.260***
				(0.353)	(0.494)	(0.349)	(0.347)
Com_lang				-0.342	-1.025**	-0.605	-0.806*
				(0.674)	(0.324)	(0.550)	(0.354)
Com_law				-0.718	-0.383	-0.620	-0.354
				(0.471)	(0.264)	(0.382)	(0.258)
Constant	-148.866***	-0.808	-106.838***	-8.589***	-131.366***	-5.751*	-104.600**
	(36.582)	(1.175)	(31.251)	(2.573)	(34.567)	(2.897)	(33.558)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.586	0.269	0.648	0.104	0.772	0.297	0.795

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Table 5a: Explaining "value of better commitments" in STAs relative to the GATS

PPML estimation: Dependent variable CG ("value of better commitments")							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	17.133***		12.625***		17.457***		12.582**
	(4.191)		(3.497)		(4.645)		(4.054)
Natural	0.756***		0.385#		0.867***		0.561*
	(0.222)		(0.229)		(0.260)		(0.263)
SRGDP	0.014		-0.119		0.019		-0.060
	(0.072)		(0.083)		(0.072)		(0.103)
DRGDP	-0.288**		0.014		-0.289*		0.056
	(0.104)		(0.163)		(0.118)		(0.182)
DKL	0.140		0.164		0.129		0.161
	(0.130)		(0.149)		(0.132)		(0.163)
DROWKL	-0.401#		-0.246		-0.503*		-0.413
	(0.235)		(0.213)		(0.242)		(0.268)
BTG		0.239***	0.195***			0.238***	0.152*
		(0.064)	(0.059)			(0.064)	(0.066)
DTRADE		-0.857***	-0.725**			-0.829***	-0.744**
		(0.172)	(0.223)			(0.145)	(0.241)
DREG				-1.142*	-0.079	-0.788	-0.039
				(0.583)	(0.419)	(0.558)	(0.473)
Com_lang				0.081	-0.748*	-0.524	-0.785*
				(0.632)	(0.355)	(0.513)	(0.313)
Com_law				-0.543	-0.263	-0.641#	-0.199
				(0.481)	(0.341)	(0.365)	(0.354)
Constant	-148.866***	-0.808	-106.838***	2.652***	-150.889***	-0.289	-106.998**
	(36.582)	(1.175)	(31.251)	(0.327)	(40.364)	(1.119)	(36.467)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.586	0.269	0.648	0.044	0.672	0.316	0.702

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Table 5b: Explaining "value of better commitments" in STAs relative to the GATS

PPML estimation: Dependent variable CG ("value of better commitments")							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Remote	17.133***		12.625***		13.913***		11.406**
	(4.191)		(3.497)		(4.011)		(3.638)
Natural	0.756***		0.385#		0.913***		0.410#
	(0.222)		(0.229)		(0.221)		(0.238)
SRGDP	0.014		-0.119		0.066		-0.139
	(0.072)		(0.083)		(0.069)		(0.106)
DRGDP	-0.288**		0.014		-0.017		0.095
	(0.104)		(0.163)		(0.136)		(0.152)
DKL	0.140		0.164		0.363		0.357#
	(0.130)		(0.149)		(0.227)		(0.204)
DROWKL	-0.401#		-0.246		-0.857*		-0.464
	(0.235)		(0.213)		(0.406)		(0.362)
BTG		0.239***	0.195***			0.240***	0.233**
		(0.064)	(0.059)			(0.062)	(0.072)
DTRADE		-0.857***	-0.725**			-0.718***	-0.560***
		(0.172)	(0.223)			(0.149)	(0.170)
SREG				1.480***	1.434**	0.676#	1.260***
				(0.353)	(0.494)	(0.349)	(0.347)
Com_lang				-0.342	-1.025**	-0.605	-0.806*
				(0.674)	(0.324)	(0.550)	(0.354)
Com_law				-0.718	-0.383	-0.620	-0.354
				(0.471)	(0.264)	(0.382)	(0.258)
Constant	-148.866***	-0.808	-106.838***	-8.589***	-131.366***	-5.751*	-104.600**
	(36.582)	(1.175)	(31.251)	(2.573)	(34.567)	(2.897)	(33.558)
N	105.000	99.000	99.000	105.000	105.000	99.000	99.000
df_m	6.000	2.000	8.000	3.000	9.000	5.000	11.000
r2	0.586	0.269	0.648	0.104	0.772	0.297	0.795

Note: Levels of significance: #10%, *5%, **1%, ***0.1*. Robust standard errors reported in brackets.

Appendix: Additional details on the dataset of commitments in STAs

- In producing estimates for each country, commitments undertaken in all services sub-sectors have been compared on the basis of the Services Sectoral Classification List (MTN.GNS/W/120), as well as the GATS Annex on Financial Services, the maritime model schedule for maritime auxiliary services, and the GATS Annex on Air Transport Services.

- The universe of services sectors has been split up so as to permit the most precise assessment: 152 sub-sectors for mode 3 and 142 for mode 1. Some sub-sectors were excluded from our comparison of commitments under mode 1 because they appear of quite limited relevance or simply not technically feasible, e.g., building cleaning, storage warehousing. This aimed to ensure that results did not overestimate the improvements made in negative-list agreements, where all sectors are liberalized unless provided otherwise.

- In computing scores for STA commitments, situations where STA commitments fell short of GATS schedules/offers were not factored in.

- Horizontal limitations, which applying to all scheduled sectors, were also assessed. However, so as not to overestimate the number of sectors where bindings were improved, we only factored into the scoring the more stringent types of horizontal limitations (and improvements to them), in particular foreign equity restrictions, limitations on the number of suppliers, including through economic needs tests, joint-venture requirements, and nationality requirements.

Annex Table A1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Geography					
Distance (km)	105	3247.90	1440.90	535.97	6861.33
Natural	105	-7.96	0.54	-8.833656	-6.284078
Remote	105	9.13	0.06	8.97	9.25
Economic					
rgdp_p (USD mn)	105	174589.5	424771.3	3700	2200000
rgdp_r (USD mn)	105	411543.8	628137.3	3700	2200000
SRGDP	105	22.5	2.5	16.46	28.06
DRGDP	105	2.2	1.5	0.03	6.39
pcrgdp_p (USD)	105	2563.0	3497.5	533.95	18748.50
pcrgdp_r (USD)	105	3210.5	5239.6	533.95	18748.50
DKL	105	1.6	1.1	0.01	4.72
SQDKL	105	3.8	4.6	0.00	22.30
DROWKL	105	1.5	0.7	0.04	3.13
Institutional					
stri_r	105	38.49	14.31	13.7	65.7
stri_p	105	38.70	12.67	13.7	65.7
DREG	105	0.47	0.36	0.01	1.57
SREG	105	7.16	0.55	5.76	8.16
Com_lang	105	0.09	0.28	0	1
Com_col	105	0.02	0.14	0	1
Com_law	105	0.29	0.45	0	1
STA	105	0.35	0.48	0	1
CG ("new sectors")	105	4.75	10.41	0	44
CG ("sectors with better commitments")	105	7.79	14.88	0	54
CG ("value of better commitments")	105	4.69	8.93	0	34.88
GATS ("number of sectors")	105	59.47	18.10	15	94.25
GATS ("level of binding")	105	39.87	13.16	11.5	70.25
STA ("number of sectors")	105	28.47	39.86	0	91.50
STA ("level of binding")	105	18.58	26.16	0	65.63
Trade					
Services trade_r (real USD mn)	105	19087.05	31241.53	120	110000
Services trade_p (real USD mn)	105	10270.29	20659.41	120	110000
BTG (real USD mn)	99	281.54	1095.09	0	8400
BTG (logs)	99	2.08	3.46	-6.91	9.04
DTRADE	105	2.00	1.43	0.00	6.82