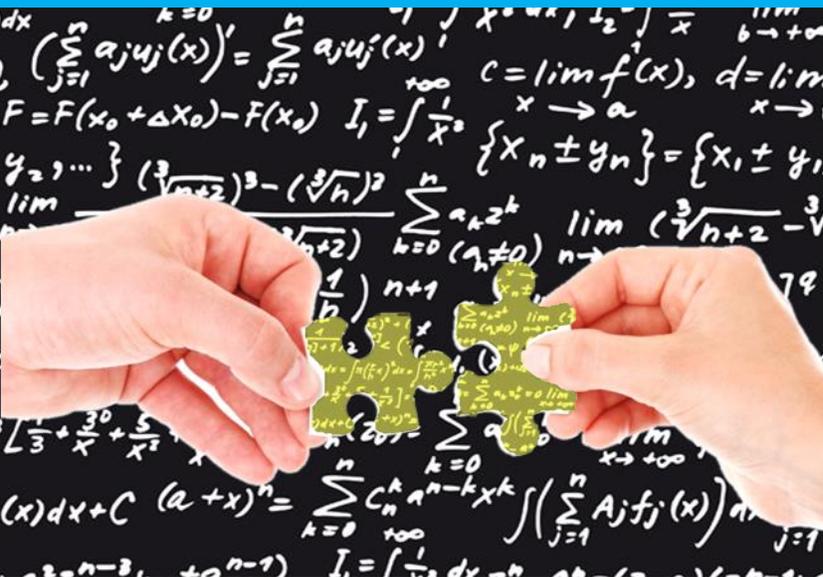




WTO+ Commitments on services in Asian PTAs: The role of regulatory homogeneity and goods trade complementarity



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and Pierre Sauvé**

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ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

WORKING PAPER

WTO+ Commitments on Services in Asian PTAs: The Role of Regulatory Homogeneity and Goods Trade Complementarity¹

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Abstract

This paper looks at the role of applied services regulations in accounting for WTO+ commitments on trade in services in preferential trade agreements (PTAs) among Asian economies. The empirical findings suggest that Asian trading dyads with regulatory frameworks that are more similar and more trade-restrictive tend to undertake higher levels of WTO+ commitments on services in their PTAs. There is also evidence in the results for such WTO+ commitments being driven by goods trade complementarities, alluding to the importance of supply chain dynamics in the region. Such results support the hypothesis that the heightened “servicification” of production generates a greater demand for lower services input costs and for certainty against possible new and disruptive services barriers.

Keywords: Preferential Trade Agreements, WTO+, Supply Chain,

JEL Codes: F15, F17

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Introduction

Up until the year 2000, preferential trade agreements (PTAs) chiefly focused on goods trade. Since then, however, agreements covering trade in services have proliferated. While only six PTAs had been notified under the WTO's General Agreement on Trade in Services (GATS) before 2000, 144 have been since then. The majority of the WTO Membership is now party to at least one services PTA, while, as of 2000, this was only the case for a number of developed countries and two developing ones (Chile and Mexico). Merely 10 per cent of WTO-notified PTAs that entered into force before 2000 included a services component, but more than half of the PTAs notified since then do so, including a growing number of agreements between developing countries.

These 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).

In their preferential agreements on services, countries tend to undertake significantly more market opening commitments than they do multilaterally at the WTO (for instance, see Roy, and others, 2007; Marchetti and Roy, 2008; van der Marel and Miroudot, 2014; Roy, 2014). This paper seeks to explain GATS+ commitments in PTAs amongst Asian economies by exploring the influence of two key factors.

First, in contrast with the prevailing literature, we examine the role of services regulatory frameworks in explaining WTO+ commitments in services PTAs. Since measures embodied within 'inside-the-border' regulatory frameworks are the currency of negotiations in services trade, the incidence of trade-restrictive services regulations and their similarity among trading partners (regulatory homogeneity) are likely to be important factors in negotiating deeper services PTAs. We investigate the "optimum regulatory convergence areas" (ORCA) hypothesis in the existing literature (Hoekman and Mattoo, 2011; Mattoo and Sauvé, 2011; Hoekman and Mavroidis, 2015; Mattoo, 2015), which suggests that preferential constructs may afford greater space to pursue a wider range of regulatory cooperation and convergence agendas than is possible on

a global scale. Thus, the greater ease with which regulatory convergence can be pursued at the regional level may help explain the deeper commitments observed within intra-regional preferential services agreements.

Second, we investigate the role that complementarities between bilateral goods and services trade play as a determinant of GATS+ commitments in PTAs. Recognizing the role of integrated regional value chains and the role of producer services in facilitating merchandise trade, we posit that preference margins in services PTAs may well be driven significantly by goods trade complementarities between trading partners.

We focus on Asian economies as these have been at the forefront of the ongoing trend towards the preferential liberalization of services markets. Seventy of the 151 services PTAs in force up until December 2017 (46 per cent of all services PTAs in force) involved at least one South or South-East Asian trading partner; 24 of these 70 PTAs (representing 16 per cent of all services PTAs in force) were entered into between Asian partners. Moreover, Asian trading partners have committed more in their services PTAs amongst each other than multilaterally under the GATS, and such GATS+ commitments vary significantly across different Asian economies (Roy, 2014).

Our empirical findings suggest that Asian trading dyads with regulatory frameworks that are more similar and trade-restrictive in nature tend to undertake higher levels of GATS+ commitments in their PTAs. There is also evidence in our results, including by modes of supply, for GATS+ commitments in Asian PTAs to be driven by goods trade complementarities. The latter results highlight the key role of PTAs in reducing services trade costs and guard against the erection of barriers to trade and investment in services that could disrupt regional supply chain dynamics.

1. The Argument and Related Literature

An important insight from the literature on goods trade preferentialism is that countries enter into PTAs largely in accordance with economic reasoning (see, for example, Baier and Bergstrand, 2004 and 2007). More recently, Egger and Wamser (2013), Cole and Guillin (2015), Egger and Shingal (2015) and Sauvé and Shingal (2016) have built on this work on goods PTAs and explored determinants of services-related PTA

membership. The services literature has also evolved to explain services commitments in the GATS (Egger and Lanz, 2008; Roy, 2011), reciprocity in PTA commitments (Marchetti, and others, 2012) as well as GATS+ commitments in PTAs (van der Marel and Miroudot, 2014).

This paper builds on this literature by considering the role of applied services trade regulations, including that of regulatory homogeneity, in explaining preference margins in services agreements. We also use a different dataset that covers all Asian countries in our sample and all the services PTAs concluded between them.

We draw on the seminal work by Baier and Bergstrand (2004), the first to document how distance, remoteness, economic country size and factor endowments act as co-determinants of PTA membership. Sauvé and Shingal (2016) added regulatory incidence and similarity in regulatory frameworks to the Baier and Bergstrand (2004) set of determinants to explain membership in services PTAs for the same sample of Asian countries as is found in this paper. We use Sauvé and Shingal's (2016) set of determinants in our empirical analysis to examine their role in explaining GATS+ commitments in Asian PTAs. Consistent with the ORCA hypothesis, we focus in particular on the role of similarity in regulatory frameworks. In addition, we explore the impact of goods' trade complementarity in view of the importance of regional supply chains in Asia.

Barriers to trade in services do not take the form of border measures, but are rather embedded in regulatory frameworks. 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 it. Where regulation is destination- or location-specific, the resulting compliance costs can become sunk (Mattoo and Fink, 2002). Regulatory heterogeneity has been shown to exert a significantly negative impact on bilateral services trade via Mode 3 (Kox and Nordas, 2009; Nordas, 2016).

In the context of a services PTA, regulatory measures assume significance for firms in both importing and exporting markets. Services agreements typically pursue a range of objectives (Hoekman and Mattoo, 2011). 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 by undertaking legally binding commitments; and third, to reap the trade- and investment-facilitating benefits stemming from convergence between trading partners' regulatory regimes (Mattoo, 2015).

The gains from PTAs are likely to be significant in areas where there is scope for attaining economies of scale and promoting increased competition. In practice, the integration of services markets often requires a convergence of regulatory regimes. Such convergence is more likely to prove feasible in a preferential (bilateral or regional) context where proximity, whether geographic or cultural, favours closer institutional and regulatory ties and repeat interaction among regional officials and institutions (Mattoo and Sauv , 2011). There is much in both the public goods and optimal currency areas literatures to suggest that regulatory cooperation may well be more desirable among a subset of countries than if pursued on a global scale (Cooper, 1976; Estevadeordal, and others, 2003).

As discussed in Mattoo and Sauv  (2011) and Sauv  and Shingal (2016), optimal regulatory convergence areas are defined as sets of countries whose aggregate welfare would be maximized through the adoption of convergent regulatory norms and practices. Such areas would balance the benefits and costs of participation in a preferential services agreement. The quest for "optimal" regulatory convergence can motivate integration among heterogeneous country groupings displaying highly differentiated levels of regulatory and institutional development. For these reasons, we hypothesize that greater convergence or homogeneity in trade-related regulatory frameworks for services among trading partners will be associated with greater GATS+ commitments.

Analysis of commitments on trade in services also requires that attention be given to the increasing role of services as intermediates in goods trade and their broader role in facilitating global value chains (GVCs). Services are key enablers of global production networks, through which about half of world trade takes place. A wide range of services act as enablers of global value chains, for example, computer, research and development, advertising, telecommunications, financial and professional services. In addition to permitting the co-ordination of international

production networks, services also provide increasingly significant inputs to the production of goods. Such considerations assume heightened importance in a world of production fragmentation where value chains (including the service inputs they rely on) are in many industries more regional than global in character (Estevadeordal et al. 2013). This “services as intermediates” or “servicification” story may thus further explain the rising demand for GATS+ liberalization levels within service PTAs, offering a complementary and supportive narrative to the ORCA hypothesis.

We examine these propositions explicitly by considering the role of these factors in determining the observed commitment gap in a sample of Asian services PTAs in force as of August 2015.

2. Empirical Strategy

Empirically, we explain the commitment gap in Asian PTAs using a set of economic, geographical and cultural distance variables, which are described in the following section.

Formally, **(1)** $CG_{ij} = \alpha + \beta x_{ij} + \varepsilon_{ij}$

where CG_{ij} is the “Commitment Gap” between multilateral and preferential commitments in services for countries i and j in a dyad, x_{ij} is the vector of control variables from Baier and Bergstrand (2004) and Sauv e and Shingal (2016) described below and ε_{ij} is the error term.

We use three different measures of CG_{ij} that are constructed differently⁴ from that found in van der Marel and Miroudot (2014):

- (a) the average number of “new sub-sectors” committed in services PTAs relative to the GATS in Modes 1 and 3 between dyad ij and ji ;

⁴ More details on the construction, coverage and the data underlying these measures are provided in the authors' contribution in *The World Economy*.

- (b) the average number of “sub-sectors with improved commitments” in services PTAs relative to the GATS in Modes 1 and 3 between dyad ij and ji ; and
- (c) a measure of the “value of improved commitments” in PTAs relative to the GATS in Modes 1 and 3 between dyad ij and ji .

While the first measure focuses solely on the number of services sectors committed in a PTA compared to the GATS (i.e. the change in the sectoral scope of commitments), the other two measures also factor in the type of commitments that are undertaken in these sectors. Given the complexity of schedules of commitments in services, the use of three different measures of the commitment gap acts as an important robustness check of our empirical findings.

The choice of explanatory variables in the estimating equation comes from the existing literature. The testable propositions from Baier and Bergstrand (2004) in particular are likely to be similar in explaining GATS+ commitments in services PTAs and inform both the choice of explanatory variables and the expected signs of their coefficients.

More specifically:

(a) Countries are more likely to negotiate deeper services agreements with geographically-closer economies or with countries that are culturally similar.⁵

(b) 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 in services markets.⁶

⁵ For any dyad ij , the control vector x thus includes $DIST_{ij}$, defined as the natural log of the bilateral distance between countries i and j . Formally, **(2)** $DIST_{ij} = \ln(d_{ij})$, where “ d ” is the bilateral distance in kilometers. Consistent with proposition (a), the coefficient of $DIST_{ij}$ is expected to be negative. Determinants of cultural distance include dummy variables indicating whether countries in a dyad have a common language, colonial antecedents and legal regimes. The coefficients of these binary variables are expected to be positive.

⁶ Economic determinants in x therefore include country sizes, represented by $SRGDP_{ij}$, which is the sum of the natural logs of real GDP of country i and j and $DRGDP_{ij}$, which is the absolute value of the difference between the natural logs of real GDP of both countries. Formally, **(3)** $SRGDP_{ij} = \ln(RGDP_i) + \ln(RGDP_j)$ and **(4)** $DRGDP_{ij} = |\ln(RGDP_i) - \ln(RGDP_j)|$, where $RGDP$ = real GDP . Consistent with proposition (b), the coefficient of $SRGDP_{ij}$ is expected to be positive while that of $DRGDP_{ij}$ is expected to be negative.

(c) *The greater the difference in relative factor endowments between countries (vis-a-vis the world), the greater the degree to which trade creation (trade diversion) is likely to emerge from agreements aiming at deeper integration.*⁷

(d) *A higher level of bilateral merchandise trade between partners is also likely to be associated with a greater inclination to negotiate a deeper services trade agreement.*⁸

(e) *In line with the ORCA hypothesis, dyads with more similar trade-related regulatory frameworks are also more likely to enter into “deeper” agreements.*⁹

(f) *It is less certain, however, whether dyads characterized by higher ex-ante levels of services trade policy restrictiveness would promote or inhibit deeper commitments.*

Examining the restrictiveness of services regulations in a trading dyad can provide further insights on whether preference margins in services reflect a desire to reduce or bind more restrictive regulatory regimes or whether deeper services commitments are more likely among dyads that are less services-trade-restrictive to begin with.¹⁰

⁷ DKL_{ij} and $DROWKL_{ij}$ are used to determine the role of factor endowments in explaining preference margins in Asian STAs. DKL_{ij} is the absolute value of the difference between the natural logs of capital-labour ratios of country i and j . To compare with rest of the world (ROW) endowments, $DROWKL_{ij}$ is included and calculated as the absolute value of the difference between the natural logs of capital-labour ratios of countries i and j and those of ROW. Formally, (5) $DKL_{ij} = |\ln(K_i/L_i) - \ln(K_j/L_j)|$ and (6) $DROWKL_{ij} = 1/2 \{ |\ln(\sum_{k=1, k \neq i}^N K_k / \sum_{k=1, k \neq i}^N L_k) - \ln(K_i/L_i)| + |\ln(\sum_{k=1, k \neq j}^N K_k / \sum_{k=1, k \neq j}^N L_k) - \ln(K_j/L_j)| \}$. Consistent with proposition (c), the coefficient of DKL_{ij} is expected to be positive while that of $DROWKL_{ij}$ is expected to be negative.

⁸ Proposition (d) is examined by including the natural log of average bilateral merchandise trade between i and j as an additional control variable (BTG_{ij}). Formally, (7) $BTG_{ij} = \ln(X_{ij}^G + X_{ji}^G)$, where $X^G =$ goods exports. Consistent with proposition (d), the coefficient of BTG_{ij} is expected to be positive.

⁹ To examine the role of services regulation in explaining services preference margins, we use data on services regulation from the World Bank’s Services Trade Restrictiveness Index (STRI) database (Borchert et al. 2014). We employ the minimum and the maximum STRI levels in a country pair as two separate regressors. Given a minimum STRI level in a pair, raising the maximum means raising the difference in STRI indices; given a maximum STRI level in a pair, raising the minimum means reducing the difference in STRI index levels. Raising both the minimum and the maximum level proportionately means keeping the proportional difference in STRI levels constant while raising the average STRI level in a pair.

Formally, (8) $MINSTRI_{ij} = \min[\ln(STRI_i), \ln(STRI_j)]$ and (9) $MAXSTRI_{ij} = \max[\ln(STRI_i), \ln(STRI_j)]$.

Consistent with proposition (e), keeping $MAXSTRI_{ij}$ constant, the coefficient of $MINSTRI_{ij}$ is expected to be positive; keeping $MINSTRI_{ij}$ constant, the coefficient of $MAXSTRI_{ij}$ is expected to be negative.

¹⁰ Such effects can be observed from the sum of the coefficients of $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ and consistent with proposition (f), this sum could be positive or negative. In sum, in estimating equation (1), we thus expect the coefficients of $SRGDP_{ij}$, DKL_{ij} , BTG_{ij} , and the cultural distance variables to be positive while those of $DIST_{ij}$, $DRGDP_{ij}$, $DROWKL_{ij}$, $MINSTRI_{ij}$ and $MAXSTRI_{ij}$ to be negative. Keeping $MAXSTRI_{ij}$ constant, the coefficient of $MINSTRI_{ij}$ is expected to be positive; keeping $MINSTRI_{ij}$ constant, the coefficient of $MAXSTRI_{ij}$ is expected to be negative. The sum of the coefficients of $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ could be positive or negative.

All explanatory variables, with their definitions and sources, are summarized in Table 1. Table 1 also summarizes information on the expected signs of the coefficients of the explanatory variables.

Table 1: Explanatory variables, definitions, sources, and expected sign of coefficients

Variable name	Definition	Source
$DIST_{ij}$	The log of distance between both countries (–)	Head et al. (2010)
$SRGDP_{ij}$	The sum of the logs of real GDP of both countries (+)	Penn World Tables
$DRGDP_{ij}$	The absolute value of the difference between the logs of real GDP of both countries (–)	Penn World Tables
DKL_{ij}	The absolute value of the difference between the logs of capital-labour ratios of the two countries (+)	Penn World Tables
$DROWKL_{ij}$	The absolute value of the difference between the logs of capital-labour ratios of the two countries and those of Rest-of-the-World (–)	Penn World Tables
BTG_{ij}	The log of average bilateral merchandise trade between the two countries (+)	UN Comtrade
$MINSTRI_{ij}$	The minimum of the log of STRI in the two countries (–)	Borchert et al. (2014)
$MAXSTRI_{ij}$	The maximum of the log of STRI in the two countries (–)	Borchert et al. (2014)
$COMLANG_{ij}$	Dummy variable for both countries having a common language (+)	Melitz and Toubal (2014)
$COMCOL_{ij}$	Dummy variable for both countries having common colonial antecedents (+)	Head et al. (2010)
$COMLAW_{ij}$	Dummy variable for both countries having a common legal system (+)	La Porta et al. (1999)

Note: The expected signs of the coefficients are reported in parentheses.

Source: Shingal et al. (2017)

3. Data

The paper's country sample of Asian economies comprises the following: Bangladesh, Cambodia, China, Indonesia, India, Japan, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, the Republic of Korea, Sri Lanka, Thailand and Viet Nam. These are the countries for which information on services regulation is available in the World Bank's STRI¹¹ database (Borchert et.al. 2014).

Our dependent variable measures GATS+ commitments undertaken in PTAs. To do so, the paper builds on the dataset on services commitments in PTAs that was initially developed by Roy et al. (2007) and subsequently expanded in Roy (2014). For the purpose of the present paper, the dataset was further extended to cover all services agreements to which the paper's sample country are parties, as well as all GATS commitments of the sample countries. The dataset covers services commitments under Mode 1 (cross-border supply) and Mode 3 (supply through a commercial presence), which together represent the bulk – over 85 per cent – of global services trade.

Table 2 reports the average GATS+ commitments undertaken by each of the 15 countries in the sample against the other 14 trading partners as of August 2015. Data in Table 2 are also presented for two modes of services delivery (Modes 1 and 3) and their total, and according to the three different commitment gap metrics described above. The information reported in Table 2 suggests that as of August 2015, 11 of the 15 Asian economies in the sample had undertaken GATS+ commitments in their PTAs with other Asian partners. Moreover, the extent of GATS+ commitments is found to be significant in the case of Indonesia, Malaysia, Philippines and Thailand, all of which are ASEAN member state, irrespective of the commitment gap metric used.

¹¹ The STRI is a quantitative index of restrictions on services trade encompassing five major service sectors and 19 sub-sectors. The value of the STRI ranges from 0 (completely liberal) to 100 (completely closed). The information is also available by modes of supply.

Table 2: Average GATS+ Commitments in Asian services PTAs by country and mode of supply

Country	First measure of commitment gap			Second measure of commitment gap			Third measure of commitment gap		
	M1	M3	M1 + M3	M1	M3	M1 + M3	M1	M3	M1 + M3
Bangladesh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cambodia	0.71	2.14	2.86	7.14	3.57	10.71	6.79	2.32	9.11
China	0.00	0.14	0.14	0.00	2.29	2.29	0.00	2.14	2.14
India	0.43	0.86	1.29	0.86	5.50	6.36	0.57	2.75	3.32
Indonesia	17.29	16.50	33.79	23.00	20.29	43.29	19.82	10.18	30.00
Japan	4.36	5.71	10.07	7.43	12.43	19.86	5.25	7.39	12.64
Malaysia	11.21	11.00	22.21	21.43	33.07	54.50	16.07	16.86	32.93
Mongolia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nepal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pakistan	2.93	3.07	6.00	3.07	6.43	9.50	2.50	3.21	5.71
Philippines	14.00	22.57	36.57	16.50	27.36	43.86	7.18	15.04	22.21
South Korea	0.21	0.57	0.79	2.64	5.14	7.79	1.43	1.93	3.36
Sri Lanka	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thailand	17.50	12.14	29.64	18.57	19.93	38.50	11.96	9.96	21.93
Vietnam	3.21	2.86	6.07	3.57	3.21	6.79	2.86	1.61	4.46
Average	4.79	5.17	9.96	6.95	9.28	16.23	4.96	4.89	9.85

Source: Shingal et al. (2017)

Note: The table reports the average GATS+ commitments undertaken by each of the 15 countries in our sample against the other 14 trading partners, by two Modes of services delivery and their total, and according to the three different measures of commitment gap used in the paper. M1 = Mode 1; M3 = Mode 3.

The average of GATS+ commitments across the 15 Asian economies by mode of supply are reported in the final row of Table 2. Altogether, the paper examines 105 trading partnerships within the sample of Asian economies, of which 37 had a services PTA in force as of August 2015.

4. Empirical results

The results from the PPML estimation¹² of the baseline specification (1) for both modes of supply for the full sample of Asian economies are reported in Table 3. In the first column, the dependent variable is defined as the average number of “new sub-sectors” committed to in PTAs relative to the GATS in Modes 1 and 3 between dyad ij and ji . In the second column, the dependent variable is defined as the average number of “sub-sectors with better commitments” in TAs relative to the GATS. In the third column, the dependent variable is a measure of the “value of improved commitments” in PTAs relative to the GATS. Standard errors are clustered by trading partner pair in all specifications.

The results reported in Table 3 suggest that, as expected, geographical distance is inversely related to WTO+ commitments in Asian services PTAs. Among economic determinants, the positive role of goods trade complementarities in explaining preference margins in Asian PTAs comes through in these results. With the exception of the common legal system variable, the coefficients of all remaining cultural distance determinants are statistically indifferent from zero. The absence of the expected effects may simply be attributed to the huge diversity of languages and cultures prevalent in the region.

The results lend support to the ORCA hypothesis: greater homogeneity in services-related regulatory frameworks positively correlate to the three commitment gap metrics. Keeping $MAXSTR_{ij}$ constant, an increase in $MINSTR_{ij}$ is seen to reduce regulatory differences in a dyad and the $MINSTR_{ij}$ coefficient is both positive and statistically significant for all three commitment gap metrics. In contrast, holding $MINSTR_{ij}$ constant, the coefficient of $MAXSTR_{ij}$, albeit positive, lacks statistical significance for the first measure of commitment gap reported in column (1); thus, the opposite effect

¹² We found each of the three measures of CG_{ij} to be characterized by over-dispersion, which renders a log-linear OLS estimation biased (see Cameron and Trivedi, 2005; Silva and Tenreyro, 2006). Given the scale-dependence of the negative binomial pseudo-maximum likelihood (PML) estimator (Bosquet and Boulhol, 2010), recourse was made to the Poisson pseudo-maximum likelihood (PPML) estimator for inference. For more details, please refer to the authors' contribution in The World Economy.

on services preference margins of an increase in dyadic regulatory differences emanating from a rise in $MAXSTRI_{ij}$ is less conclusive.

Table 3 – Explaining commitment gap in Asian services PTAs

PPML estimation: Dependent variable CG_{ij}			
	(1)	(2)	(3)
$DIST_{ij}$	-0.951* (0.381)	-0.710* (0.312)	-0.673* (0.319)
$SRGDP_{ij}$	-0.166 (0.168)	-0.221 (0.139)	-0.236 (0.152)
$DRGDP_{ij}$	-0.210 (0.194)	-0.218 (0.148)	-0.208 (0.152)
DKL_{ij}	0.413# (0.214)	0.456* (0.231)	0.402# (0.236)
$DROWKL_{ij}$	-0.773# (0.459)	-0.865# (0.446)	-0.730 (0.460)
BTG_{ij}	0.304* (0.146)	0.346** (0.131)	0.374* (0.146)
$MINSTRI_{ij}$	2.379*** (0.577)	1.735*** (0.472)	1.677*** (0.497)
$MAXSTRI_{ij}$	1.857 (1.180)	2.106* (1.031)	2.000* (1.001)
$COMLANG_{ij}$	-0.680 (0.545)	-0.354 (0.514)	-0.157 (0.553)
$COMCOL_{ij}$	-0.187 (0.785)	0.090 (0.655)	0.119 (0.634)
$COMLAW_{ij}$	-1.167* (0.562)	-1.054* (0.458)	-1.016* (0.456)
CONSTANT	-2.603 (4.938)	-1.540 (4.367)	-1.588 (4.330)
N	97	97	97
df_m	11	11	11
r^2	.596	.625	.604

Source: Shingal et al. (2017)

Note: Levels of significance: #10%, *5%, **1%, ***.1%. Robust standard errors, clustered by trading partner pair, reported in parentheses. Specifications 1, 2 and 3 correspond to the three alternative measures of the dependent variable namely (a) the average number of “new subsectors” committed to in services PTAs relative to the GATS in modes 1 and 3 between dyad ij and ji ; (b) the average number of “subsectors with improved commitments” in PTAs relative to the GATS in modes 1 and 3 between dyad ij and ji ; and (c) a measure of the “value of improved commitments” in PTAs relative to the GATS in modes 1 and 3 between dyad ij and ji .

At the same time, the sum of the coefficients of $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ are found to be consistently positive across all three commitment gap metrics; thus, raising the average $STRI$ level in a country pair is positively correlated to preference margins in services trade. This suggests that Asian dyads with more restrictive services regimes may be more likely to negotiate GATS+ commitments in their PTAs, possibly to reduce or bind such regimes in a regional context.

A number of robustness checks of these findings were conducted. In particular, we estimated the baseline specification separately for Modes 1 and 3. The broad findings were found to be qualitatively similar to those reported in Table 3, but there was greater support for the ORCA hypothesis in these results.¹³

Furthermore, the effects of the variables of interest, especially BTG_{ij} and $MINSTRI_{ij}$, were found to be more pronounced for Mode 1 than for Mode 3. This suggests that the role of regulatory convergence and “servicification” in facilitating deeper integration of services markets may be more important for cross-border commerce, as such trade typically involves the regulatory environments of both the country of the supplier and that of the consumer.

Amongst other robustness checks, we controlled for ASEAN membership and also replicated the results reported in Table 3 using (the logs of) bilateral goods exports (lnX_{ij}) and imports (lnM_{ij}) as distinct regressors instead of the BTG_{ij} variable. The results were found to be qualitatively similar to those reported in Table 3 and confirm the paper’s main findings regarding the role of services regulatory frameworks and complementarities between merchandise trade flows and preference margins in services.

¹³ For more details, please refer to the authors’ contribution in *The World Economy*.

5. Conclusion

This paper examined the determinants of GATS+ commitments in Asian PTAs, in particular the role of similarities in regulatory frameworks and the influence of goods trade relationships.

The empirical results on offer suggest that geography exerts significant influence on the observed commitment gap, though such effects are somewhat benign for services trade transacted over the internet. This may suggest that the desire for greater regional integration in services is a particularly important factor for Asian countries. This is consonant with the region's growth model centred on manufacturing exports and emanating from demand, in a world of increasing production fragmentation, to source intermediate inputs (both goods and services) most efficiently within the periphery of regional supply chains.

Among economic variables, the positive and significant relationship found between bilateral merchandise trade flows and GATS+ bindings clearly stands out. It does so for both ASEAN and non-ASEAN trading partners in the sample. This would appear to lend support to the idea that the scheduling of binding commitments in services trade is increasingly perceived by governments as an important complement to goods trade. Once more, this has particular resonance in Asia given the growing insertion of the region in supply chain production. Producer services, such as transportation and logistics, telecommunications, finance, business and professional services, play a significant role in goods-dominated supply chains in the region. Moreover, the supply of legal guarantees in treaty instruments governing both trade and investment flows provides an important 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, 2015).

Finally, the paper found consistent evidence linking the commitment gap with homogeneity in terms of services regulatory restrictiveness, especially at the mode of supply level. This suggests that the sample of Asian services markets on the whole reveal significant "optimal regulatory convergence area" attributes, providing some support for negotiations towards "deep" pan-Asian services PTAs. Our results also

offered evidence for dyads characterized by the maintenance of more restrictive services regimes to undertake deeper GATS+ commitments in PTAs. These findings lend support to the hypothesis that the heightened “servicification” of production generates a demand to lower service input costs arising from both regulatory incidence and heterogeneity.

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