ECONSTOR Make Your Publications Visible.

A Service of

ZBW

Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics

Shingal, Anirudh; Ro, Martin; Sauvé, Pierre

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

ARTNeT Working Paper Series, No. 178

Provided in Cooperation with: Asia-Pacific Research and Training Network on Trade (ARTNeT), Bangkok

Suggested Citation: Shingal, Anirudh; Ro, Martin; Sauvé, Pierre (2018) : WTO+ commitments on services in Asian PTAs: The role of regulatory homogeneity and goods trade complementarity, ARTNET Working Paper Series, No. 178, Asia-Pacific Research and Training Network on Trade (ARTNeT), Bangkok

This Version is available at: https://hdl.handle.net/10419/177775

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



WWW.ECONSTOR.EU











Anirudh Shingal, Martin Roy and Pierre Sauvé

ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

Working Paper

NO. 178 | 2018

The Asia-Pacific Research and Training Network on Trade (ARTNeT) is an open regional network of research and academic institutions specializing in international trade policy and facilitation issues. ESCAP, WTO and UNCTAD, as key core network partners, and a number of bilateral development partners, provide substantive and/or financial support to the network. The Trade, Investment and Innovation Division of ESCAP, the regional branch of the United Nations for Asia and the Pacific, provides the Secretariat of the network and a direct regional link to trade policymakers and other international organizations.

The ARTNeT Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about trade issues. An objective of the series is to publish the findings quickly, even if the presentations are less than fully polished. ARTNeT Working Papers are available online at www.artnetontrade.org. All material in the Working Papers may be freely quoted or reprinted, but acknowledgment is requested together with a copy of the publication containing the quotation or reprint. The use of the Working Papers for any commercial purpose, including resale, is prohibited.

Disclaimer:

The designations employed and the presentation of the material in this Working Paper do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears, it covers countries, territories, cities or areas. Bibliographical and other references have, wherever possible, been verified. The United Nations bears no responsibility for the availability or functioning of URLs. The views expressed in this publication are those of the author(s) and do not necessarily reflect the views of the United Nations. The opinions, figures and estimates set forth in this publication are the responsibility of the author(s), and should not necessarily be considered as reflecting the views or carrying the endorsement of the United Nations. Any errors are the responsibility of the author(s). The mention of firm names and commercial products does not imply the endorsement of the United Nations.

© ARTNeT 2018



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

Anirudh Shingal², Martin Roy³ and Pierre Sauvé⁴

Please cite this paper as: Shingal, Anirudh, Martin Roy, and Pierre Sauvé (2018), "WTO+ Commitments on Services in Asian PTAs: The Role of Regulatory Homogeneity and Goods Trade Complementarity", ARTNET Working Paper Series, No. 178, February 2018, Bangkok, ESCAP.

Available at: http://artnet.unescap.org.

¹ This paper is based on a more comprehensive article by the authors "Do WTO+ commitments in services trade agreements reflect a quest for optimal regulatory convergence? Evidence from Asia", *The World Economy* 2017(00):1–27, https://doi.org/10.1111/twec.12574.

² World Trade Institute, University of Bern (Switzerland).

³ World Trade Organization, Geneva (Switzerland).

⁴ World Bank Group, Geneva (Switzerland).

The authors also express thanks to ARTNeT secretariat for assistance in disseminating this work.

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

Contents

Abstract	i
Introduction	
1. The Argument and Related Literature	4
2. Empirical Strategy	7
3. Data	11
4. Empirical results	13
5. Conclusion	
References	

Tables

- 1. Explanatory variables, definitions, sources, and expected sign of coefficients..... 10

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 rulemaking 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 codeterminants 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 Sauvé, 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 Sauvé (2011) and Sauvé 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) $CG_{ij} = \dot{\alpha} + \dot{\eta}x_{ij} + \varepsilon_{ij}$

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 Sauvé 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-avis 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⁾ $DROWKL_{ij} = 12[\{ln(\sum_{k=1, k \neq i}^{N}K_k | \sum_{k=1, k \neq i}^{N}L_k] - ln(K_i | L_i])\} + \{ln(\sum_{k=1, k \neq j}^{N}K_k | \sum_{k=1, k \neq j}^{N}L_k] - ln(K_j | L_j])\}]$ 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) $BTG_{ij} = ln(X_{ij}^G + X_{ji}^G 2)$, 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 $SRGDP_{ii}$, DKL_{ii} , 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 $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ constant, the coefficient of $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ constant, the coefficient of $MAXSTRI_{ij}$ and $MINSTRI_{ij}$ could be positive.

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.

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)
<i>COMLANG</i> _{ij}	Dummy variable for both countries having a common language (+)	Melitz and Toubal (2014)
<i>COMCOL</i> _{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)

Table 1: Explanatory variables, definitions, sources, and expected sign ofcoefficients

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.

	First m ment g	easure of ap	commit-	Second measure of commit- ment gap		Third measure of commit- ment gap			
Country	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

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

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 subsectors" 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 servicesrelated regulatory frameworks positively correlate to the three commitment gap metrics. Keeping *MAXSTRI*_{ij} constant, an increase in *MINSTRI*_{ij} is seen to reduce regulatory differences in a dyad and the *MINSTRI*_{ij} coefficient is both positive and statistically significant for all three commitment gap metrics. In contrast, holding *MINSTRI*_{ij} constant, the coefficient of *MAXSTRI*_{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.

PPML estimation: Dependent variable CG _{ij}					
	(1)	(2)	(3)		
DIST _{ij}	-0.951*	-0.710*	-0.673*		
	(0.381)	(0.312)	(0.319)		
SRGDP _{ij}	-0.166	-0.221	-0.236		
	(0.168)	(0.139)	(0.152)		
$DRGDP_{ij}$	-0.210	-0.218	-0.208		
	(0.194)	(0.148)	(0.152)		
DKL _{ij}	0.413"	0.456*	0.402"		
	(0.214)	(0.231)	(0.236)		
DROWKL _{ij}	-0.773"	-0.865''	-0.730		
	(0.459)	(0.446)	(0.460)		
BTG _{ij}	0.304*	0.346**	0.374*		
	(0.146)	(0.131)	(0.146)		
MINSTRIij	2.379***	1.735***	1.677***		
	(0.577)	(0.472)	(0.497)		
MAXSTRIij	1.857	2.106*	2.000*		
	(1.180)	(1.031)	(1.001)		
$COMLANG_{ij}$	-0.680	-0.354	-0.157		
	(0.545)	(0.514)	(0.553)		
COMCOL _{ij}	-0.187	0.090	0.119		
	(0.785)	(0.655)	(0.634)		
COMLAWij	-1.167*	-1.054*	-1.016*		
	(0.562)	(0.458)	(0.456)		
CONSTANT	-2.603	-1.540	-1.588		
	(4.938)	(4.367)	(4.330)		
Ν	97	97	97		
<i>df_</i> m	11	11	11		
<i>r</i> ²	.596	.625	.604		

Table 3 – Explaining commitment gap in Asian services PTAs

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 (InX_{ij}) and imports (InM_{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.

References

Baier, S.L., and J.H. Bergstrand (2004). Economic determinants of free trade agreements. *Journal of International Economics*, vol. 64, No. 1, pp. 29–63 (October).

Baldwin, R., and M. Kawai (2013). Multilateralizing Asian Regionalism, *Asian Development Bank Institute*, Working Paper No. 431, Japan, August 2013.

Baldwin, R., and J. Lopez-Gonzalez (2015). Supply-Chain Trade: A Portrait of Global Patterns and Several Testable Hypotheses. *The World Economy*, vol. 38, No. 11, pp, 1682-1721.

Borchert, I., B. Gootiiz, and A. Mattoo, (2014). Policy barries to international trade in services: Evidence from a new database. *World Bank Economic Review*, vol. 28, No. 1, pp. 162-188.

Cole, M.T., and A. Guillin (2015). The Determinants of Trade Agreements in Services vs. Goods. *International Economics,* vol. 144, pp. 66-82.

Cooper, R.N. (1976). Worldwide versus Regional Integration: Is there an Optimum Size of the Integration Area? in F. Matchlup, ed., *Economic Integration: Worldwide, Regional, Sectoral*, London: MacMillan, pp. 41-53.

Egger, P. and R. Lanz (2008). The Determinants of GATS Commitment Coverage. *The World Economy*, vol. 31, No. 12, pp. 1666-1694.

Egger, P., and A. Shingal (2015). Determinants of services trade agreement membership, mimeo.

Estevadeordal, A., B. Frantz, and T. R. Nguyen (2003). *Regional Public Goods: From Theory to Practice*, Washington, D.C: Inter-American Development Bank Publications.

Estevadeordal, A., J. Blyde, K. Suominen (2013). Are Global Value Chains Really Global? Policies to Accelerate Countries' Access to International Production Networks. prepared for the E15 group on Global Value Chains, Development Challenges and Policy Options, Geneva: International Centre for Trade and Sustainable Development.

Head, K., T. Mayer and J. Ries (2010). The erosion of colonial trade linkages after independence. *Journal of International Economics,* vol. 81, No. 1, pp. 1-14.

Hoekman, B. (1996). Assessing the general agreement on trade in services. In W. Martin & L. A. Winters (Eds.), *The Uruguay Round and developing countr*ies. Cambridge: Cambridge University Press, pp. 88–124.

Hoekman, B. and P. C. Mavroidis (2015). Regulatory Spillovers and the Trading System: From Coherence to Cooperation. E-15 Initiative, Geneva: International Centre for Trade and Sustainable Development and World Economic Forum, available at www.e15initiative.org

Hoekman, B., and Mattoo, A. (2011). Services trade liberalization and regulatory reform: Re-invigorating international cooperation. World Bank Policy Research Working Paper 5517.

Kox, H., and H. Nordås (2009). Regulatory harmonization and trade in services: Volumes and choice of mode, mimeo.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny (1999). The Quality of Government. *Journal of Law, Economics and Organization*, vol. 15, No. 1, pp. 222-279.

Marchetti, J., and M. Roy (2008). Services Liberalization in the WTO and in PTAs. In J. Marchetti and M. Roy (eds), *Opening Markets for Trade in Services; Countries and Sectors in Bilateral and WTO Negotiations*, Cambridge: Cambridge University Press and WTO.

Marchetti, J., M. Roy, and L. Zoratto (2012). Is there reciprocity in preferential trade agreements on services? WTO Staff Working Paper (ERSD-2012-16).

Mattoo, A., and C. Fink (2002). Regional Agreements and Trade in Services: Policy Issues, Policy Research Working Paper 2852. Washington, D.C.: World Bank.

Mattoo, A. and P. Sauvé (2011). The Preferential Liberalization of Services Trade. NCCR Working Paper No 2010/13, May; published as "Services", in Chauffour, J.-P. and J.-C. Maur, eds., *Preferential Trade Agreement Policies for Development: A Handbook*, Washington, D.C.: The World Bank, pp. 235-274.

Mattoo, A. (2015). Services Trade and Regulatory Cooperation. Think Piece for the E15 Experts Group on Services, Geneva: ICTSD and World Economic Forum, (July), available at http://e15initiative.org/wp-content/uploads/2015/07/E15-Services-Mattoo-FINAL.pdf

Melitz, J. and F. Toubal (2014). Native Language, Spoken Language, Translation and Trade. *Journal of International Economics*, vol. 92, No. 2, pp. 351-363.

Nordås, H. (2016). Services Trade Restrictiveness Index (STRI): The Trade Effect of Regulatory Differences, OECD Trade Policy Papers, No. 189, Paris: OECD Publishing.

OECD (2009). *Measuring Capital: OECD Manual*. Paris: OECD Publishing.

Roy, M., J. Marchetti, and H. Lim (2007). Services Liberalization in the New Generation of Preferential Trade Agreements (PTAs): How Much Further than the GATS?, *World Trade Review*, vol. 6, No. 2, pp. 155-192.

Roy, M. (2011). Democracy and the Political Economy of Multilateral Commitments on Trade in Services. *Journal of World Trade,* vol. 45, No. 6, pp. 1157–1180.

Roy, M. (2014). Services Commitments in Preferential Trade Agreements: Surveying the Empirical Landscape. In P. Sauvé and A. Shingal (eds.), *The Preferential*

Liberalization of Trade in Services: Comparative Regionalism, London: Edward Elgar Publishers.

Sauvé, P., and A. Shingal (2011). Reflections on the Preferential Liberalization of Services Trade. *Journal of World Trade*, vol. 45, No. 5, pp. 953-63.

Sauvé, P., and A. Shingal (2016). Why do countries enter into preferential agreements on trade in services? Assessing the potential for negotiated regulatory convergence in Asian services markets. *Asian Development Review*, vol. 33 No. 1, pp. 1-18, March.

van der Marel, E., and S. Miroudot (2014). 'The economics and political economy of going beyond the gats. *Review of International Organizations,* vol. 9, No. 2, pp. 205-239.



The Asia-Pacific Research and Training Network on Trade – ARTNeT – is an open network of research and academic institutions and think-tanks in the Asia-Pacific region, supported by multilateral core partners ESCAP, UNCTAD, UNDP and WTO as well as a number of bilateral development partners. ARTNeT aims to increase the amount of high quality, topical and applied research in the region by harnessing existent research capacity and developing new capacities. ARTNeT also focuses on communicating these research outputs for policymaking in the region including through the ARTNeT Working Paper Series which provide new and policy–relevant research on topics related to trade, investment and development. The views expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations and ARTNeT secretariat or ARTNeT members.

Readers are encouraged to quote or reproduce material from ARTNeT Working Papers for their own publications, but as the copyright holder, ARTNeT requests due acknowledgement and a copy of the publication.

This and other ARTNeT publications are available from artnet.unescap.org



ARTNeT Group



artnetontrade@un.org

ARTNeT Secretariat, United Nations ESCAP Rajadamnern Nok Avenue Bangkok 10200, Thailand Tel: +66(0) 22881410 Fax: +66(0) 22881027