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DIGITAL TRADE FACILITATION: PAPERLESS TRADE IN REGIONAL TRADE AGREEMENTS

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Abstract

Digital trade facilitation refers to the application of modern information and communication technologies (ICTs) to simplify and automate international trade procedures. It is rapidly becoming essential to maintaining trade competitiveness and enabling effective participation in cross-border e-commerce. This paper examines the extent to which measures aimed at dematerializing trade data and documents and enabling their electronic exchange, commonly referred to as paperless trade measures, are included in regional trade agreements (RTAs), including in the Trans-Pacific Partnership and ASEAN agreements. Such measures are most commonly found in RTA chapters on e-commerce or in those dedicated to Customs and trade facilitation. Their number is found to have doubled in RTAs between 2005-8 and 2013-16 at the global level. Most recent RTAs also contain more and deeper paperless trade provisions than those featured in the WTO Trade Facilitation Agreement. A more detailed analysis of paperless trade measures included in selected RTAs in Asia and the Pacific confirms that the coverage of RTAs of paperless trade issues has become extensive, covering increasingly specific areas such as electronic certificates of origins and sanitary and phytosanitary certificates. In that context, the new Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific can be expected to provide a useful tool for harmonized implementation of many of these provisions.

Keywords: regional trade agreements, paperless trade, trade facilitation, digital trade, electronic certificates, trade integration, regional cooperation, free trade agreements, cross-border paperless trade, e-commerce, treaty, RTAs, WTO, ESCAP, Asia, Pacific

JEL Classification: F10, F13, F15, O14

Abbreviations

ASEAN	Association of Southeast Asian Nations
ASW	ASEAN Single Window
BtoG	between business and government
COO	Certificates of Origin
EPA	Economic Partnership Agreement
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
EU	European Union
FA-PT	Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific
FTA	Free Trade Agreement
GtoG	between governments
IMO	International Maritime Organization
NSW	National Single Window
PTA	Preferential Trade Agreement
RTAs	Regional Trade Agreements
RTA-IS	Regional Trade Agreements Information System
SMEs	small-medium enterprises
SPS	Sanitary and Phytosanitary measures
TBT	Technical Barriers to Trade
TFA	WTO Trade Facilitation Agreement
TFPI	Trade Facilitation and Paperless Trade Implementation
TPP	Trans-Pacific Partnership Agreement
UNCITRAL	United Nations Commission on International Trade Law
UNRC	United Nations Regional Commissions
WCO	World Customs Organization
WTO	World Trade Organization

Contents

1.	INTRODUCTION	1
2.	TYPOLOGY OF PAPERLESS TRADE RELATED PROVISIONS	3
3.	PAPERLESS TRADE COVERAGE OF REGIONAL TRADE AGREEMENTS.....	7
3.1	Frequency of Paperless Trade Measures in RTAs	9
4.	A CLOSER LOOK: PAPERLESS TRADE IN SELECTED RTAs IN ASIA AND THE PACIFIC	11
4.1	“Paperless Trading” Articles	12
4.2	Paperless Trade Measures and Commitments	13
4.3	Linkages with the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific	22
5.	CONCLUSION.....	23
	REFERENCES	25
	ANNEXES	
1	List of Trade Agreements Reviewed	26
2	Paperless Trade Coverage in RTAs of Selected Asian Subregions and World Regions	33

1. INTRODUCTION

As part of their continuous efforts to harness international trade for sustainable development, Asia and the Pacific economies have long strived to make trade procedures as efficient as possible, in particular through implementation of automated customs systems, electronic single windows and other digital customs and trade facilitation initiatives. These paperless trade measures are rapidly becoming essential not only to maintain trade competitiveness, but also to address the trade control and logistics challenges associated with an increase in small shipments and cross-border e-commerce.¹

Paperless trade generally refers to the conduct of international trade transactions using electronic rather than paper-based data and documents.² It is more formally defined as trade “taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form” in the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific (FA-PT) adopted by Member States of United Nations ESCAP in May 2016.³ While the ultimate goal of paperless trade is to dematerialize all information flows associated with a given transaction for all stakeholders, paperless trade initiatives generally focus on facilitating data and documents flows between businesses and government (BtoG) and/or between governments (GtoG).⁴

Paperless trade generates significant economy-wide savings, including direct savings to traders in the form of lower compliance costs, as well as indirect savings from faster movement of goods and lower inventory costs.⁵ It also enhances opportunities for SMEs to participate in cross-border trade, affords timely availability of shipping documents and reduces errors associated with re-keying of data.⁶ In addition, through reduction in clearance times, it can increase port efficiency and reduce port congestion and related problems.⁷ Potential annual export gains associated with moving from manual paper-based trade to paperless trade have been estimated at between USD 36 billion and 257 billion in Asia and the Pacific, depending on the extent of automation and dematerialization of procedures and documents.⁸

¹ UNCTAD (2015), among others, indicate that cross-border e-commerce has led to a 48% growth in the volume of international deliveries of small packets between 2011 and 2014. The etradeforall.org initiative identifies trade logistics and facilitation as one of seven key areas for e-trade development.

² Sung Heun Ha and Sang Won Lim (2014).

³ This new United Nations treaty, dedicated to enabling paperless trade among Asia and the Pacific member States opened for signature and ratification or accession in New York on 1 October 2016. See: <http://www.unescap.org/resources/framework-agreement-facilitation-cross-border-paperless-trade-asia-and-pacific>

⁴ This is in contrast to e-commerce, where the focus is generally on facilitating exchange of information between business and consumers (BtoC) and/or between businesses (BtoB). In the international trade context, paperless trade is seen as an enabler of cross-border e-commerce, with general provisions on “paperless trade” or “paperless trading” increasingly included in e-commerce chapters of regional trade or economic partnership agreements (e.g., in the TPP).

⁵ See for example, UNNExT Briefs on single window implementation in Republic of Korea, as well as Senegal, Singapore and Thailand. <http://unnex.t.unescap.org>

⁶ See for example, Laryea (2005).

⁷ See Laryea (2002).

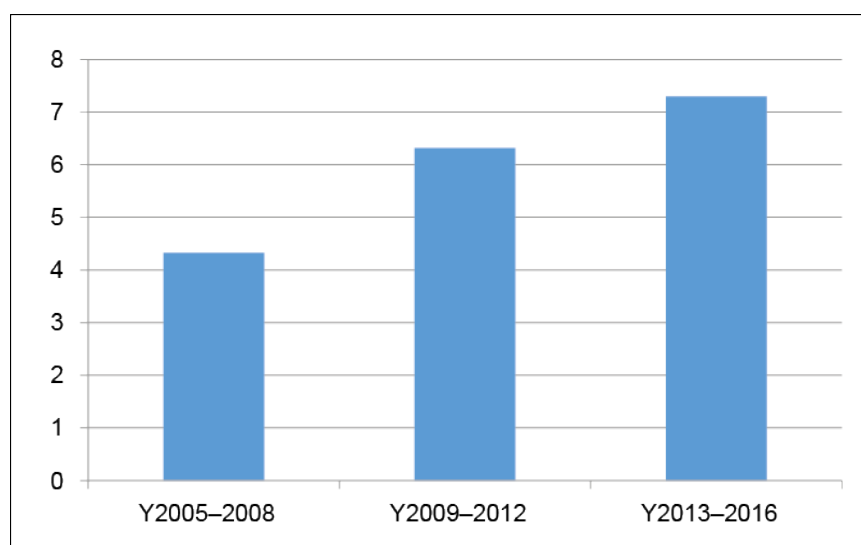
⁸ Shepherd and Duval (2015). This is made possible by the very significant time and cost savings associated with the digitalization of the entire trade process, with direct cost savings alone estimated at USD 7 billion annually in Asia and the Pacific - and time savings in the export process of at least 24%.

Importantly, the use of electronic rather than paper documents can also help enhance regulatory control and compliance by governments, especially when relevant data and documents can be exchanged among agencies and across borders. In particular, the availability of more accurate and timely data in electronic form can enable trade control agencies to more efficiently evaluate the compliance risks associated with individual shipments, enabling them to identify high-risk transactions, ultimately boosting Customs revenue while also speeding up the trade of compliant traders.⁹

Overall, the significant benefits for both Governments and traders have led an increasing number of countries to promote paperless trade, including as part of multilateral and preferential trade agreements. Accordingly, this paper analyzes the extent to which recent preferential trade agreements have included provisions related to paperless trade globally, also using the WTO Trade Facilitation Agreement (TFA) as a reference. Results provide insights and models for future negotiations in this area, as well as for implementation of the FA-PT.

Our analysis reveals that more than half of the trade agreements which have entered into force since 2005 globally (90 of 138) include paperless trade measures or provisions. Thirty (30) of these RTAs reviewed in this study contain a dedicated provision titled “Paperless Trading” or “Paperless Trade Administration”, typically found either in the Chapter on e-commerce, or the one dealing with Customs procedures and trade facilitation (See Annex 1 for the list of RTAs examined). As shown in Figure 1, the detailed analysis presented in this paper reveals that the number of paperless trade measures included in RTAs almost doubled between 2005–2008 and 2013–16. While the impact of including such measures and provisions in trade agreements is difficult to measure, the willingness of Governments to systematically include commitments in this area is a welcome development.

Figure 1: Number of Paperless Trade Measures in RTAs (2005–2016)



Source: Authors.

⁹ For example, Ghana Customs reports that its electronic Single Window launched in 2015 helped boost revenue collection by almost 15% in one year, while cutting down waiting time and approval for classification of goods from 2 weeks to 2 days – See more at: <http://thebftonline.com/business/economy/21250/single-window-boosts-revenue-collection-148-in-one-year.html#sthash.bASAWHGE.dpuf>

The paper is organized as follows: the next section presents a typology of paperless trade measures and provisions in RTAs, providing a basis for the evaluation of the paperless trade coverage of such agreements. The results of the evaluation are then presented, highlighting differences in coverage by geographic regions and identifying the least and most common measures included in RTAs. This is followed by a more detailed analysis of selected RTAs in the Asia and the Pacific region, including a comparative analysis of “Paperless Trading”/“Paperless Trade Administration” Articles and an assessment of relevant paperless trade measures in terms of substance and nature (binding vs. best endeavour). Linkages to provisions featured in the new FA-PT are then discussed, followed by conclusions.

2. TYPOLOGY OF PAPERLESS TRADE RELATED PROVISIONS

An initial starting point for the development of a list of paperless trade measures and provisions is the United Nations Regional Commissions (UNRCs) Global Survey on Trade Facilitation and Paperless Trade Implementation (TFPI).¹⁰ The paperless trade and cross-border paperless trade measures included in the 2015 UNRCs TFPI Survey are shown in Table 1.

Paperless trade measures featured in the TFPI Survey include the establishment of electronic automated customs system and electronic single window system, electronic submission of trade-related documents including trade licenses, sea/air cargo manifests and customs declarations, and electronic application and issuance of trade licenses and preferential certificate of origin. Furthermore, there are six measures related to cross-border paperless trade in the survey. Apart from the general measure “Engagement of the country in trade-related cross-border electronic data exchange with other countries”, the measures aiming at exchanging specific documents such as Sanitary and Phytosanitary (SPS) Certificates and Certificates of Origin (COO) electronically are included. In addition, two of the measures, Laws and regulations for electronic transactions and Recognized certification authority issuing digital certificates to traders to conduct electronic transactions, are basic building blocks towards enabling the exchange and mutual recognition of trade-related data and documents among stakeholders within a country and also along the entire international supply chain.¹¹

Following an initial review of preferential trade agreements, however, most of the measures listed in the TFPI Survey were not frequently found in RTA provisions, probably because such measures were too “applied” and specific to be included in such –generally quite broad - legal instruments. We therefore further developed the list of paperless trade measures and provisions based on an iterative review of the text of agreements included in the WTO Regional Trade Agreements Information System (RTA-IS).

¹⁰ Available at: <https://unnex.unescap.org/content/global-survey-trade-facilitation-and-paperless-trade-implementation-2015>

¹¹ Id

Table 1: Paperless Trade Measures included in the UNRC Global Survey on Trade Facilitation and Paperless Trade Implementation 2015

Paperless trade	15. Electronic/Automated Customs System established (e.g., ASYCUDA)
	16. Internet connection available to Customs and other trade control agencies at border-crossings
	17. Electronic Single Window System
	18. Electronic submission of Customs declarations
	19. Electronic Application and Issuance of Trade Licenses
	20. Electronic Submission of Sea Cargo Manifests
	21. Electronic Submission of Air Cargo Manifests
	22. Electronic Application and Issuance of Preferential Certificate of Origin
	23. E-Payment of Customs Duties and Fees
	24. Electronic Application for Customs Refunds
Cross-border paperless trade	25. Laws and regulations for electronic transactions are in place (e.g. e-commerce law, e-transaction law)
	26. Recognized certification authority issuing digital certificates to traders to conduct electronic transactions
	27. Engagement of the country in trade-related cross-border electronic data exchange with other countries
	28. Certificate of Origin electronically exchanged between your country and other countries
	29. Sanitary and Phytosanitary Certificate electronically exchanged between your country and other countries
	30. Banks and insurers in your country retrieving letters of credit electronically without lodging paper-based documents

Source: Joint United Nations Regional Commissions Trade Facilitation and Paperless Trade Implementation Survey 2015 Global Report.

Our analysis covered all 136 RTAs included in the WTO RTA-IS database which had entered into force since the year 2005 and were available in the English language – as of September 2016.¹² The Trans-Pacific Partnership Agreement (TPP), as well as relevant intra-ASEAN Agreements (i.e., the following three inter-related ASEAN agreements was reviewed together: ASEAN Trade in Goods Agreement, Agreement to Establish and Implement the ASEAN Single Window, ASEAN Agreement on Customs) were also considered and included in the analysis. The WTO Trade Facilitation Agreement (TFA) is also used as a benchmark in the analysis. The complete list of the RTAs reviewed is available in Annex 1.

In line with the TFPI Survey, we adopted a broad definition of paperless trade in identifying relevant measures and provisions, looking for mentions of related keywords, in particular “information and communication technologies”, “internet” “electronic”, “automation”, and “paperless”, in chapters of the agreement covering not only trade facilitation and customs procedures but also those covering rules of origin, technical barriers to trade, sanitary and phytosanitary measures, financial services, as well as electronic commerce. However, the scope of paperless trade was not extended to chapters or sections related to transport and logistics services liberalization, mobility of business people, government procurement and intellectual property.

¹² The WTO RTA-IS included 156 RTAs which had entered into force on or after 2005, but RTAs whose texts are only available in Spanish and Russian were not reviewed.

A typology of 27 paperless trade measures and provisions was ultimately developed, as shown in Table 2. While some of the measures and provisions included are relatively general (e.g. “E-submission/processing of trade-related data/documents”), we also included much more specific and sometimes overlapping measures and provisions in order to get a better understanding of the content and depth of the various Agreements. Specific measures and provisions related to a more general measure included in table 2 are specified in *italic* immediately under such measure. We also try to distinguish between paperless trade measures and provisions focusing on exchange of information in electronic form between stakeholders domestically (measures and provisions No. 1–14) from those more directly related to cross-border electronic data and document exchanges (measures No. 15–27). Finally, in line with the content of some of the most recent agreements and their e-commerce chapters, the typology emphasizes provisions related to e-certificates and e-signatures (16–21), focusing on their mutual recognition and interoperability in particular.¹³

Table 2: Typology of Paperless Trade Measures and Provisions in PTAs

	Measure/Provision	Note
1	Acceptance of e-copies	This refers to accepting trade administration documents submitted electronically as the legal equivalent of the paper version of these documents. (e.g., Australia-Japan EPA Art. 13.9)
2	E-submission/processing of trade-related data/documents	This includes the provision of advance lodging of electronic documents for pre-arrival processing, the electronic submission and processing of information necessary for the release of an express consignment before the express consignment arrives; and submission of a single document covering all goods imported in express consignment through electronic means. (e.g., Rep. of Korea-New Zealand FTA Art.4.4, 4.7,4.8)
3	<i>E-submission of Sea Cargo Manifests</i>	Measure included in the TFPI survey – and also covered by the WCO Revised Kyoto Convention and relevant International Maritime Organization (IMO) agreements
4	<i>E-submission of Air Cargo Manifests</i>	Refers to the submission of a manifest covering all goods contained in an express shipment through electronic means. (e.g., Rep. of Korea-Viet Nam FTA Art. 4.7 (c))
5	E-system of Export/Import Licenses or Permits	See, e.g., Treaty on the Eurasian Economic Union, Annex to the Protocol on Non-Tariff Regulatory Measures in Relation to Third Countries, Rules for Issuing Licenses and Permits for the Export and/or Import of Goods II.
6	E-system of SPS certificates	See, e.g., Trans-Pacific Partnership (TPP) Art. 7.12
7	E-system of COO	This includes COO e-certification system, the e-system for pre-export verification of the origin of the goods. In addition, making a claim for preferential tariff treatment by electronic means. (e.g., Australia-The PRC FTA Art.3.16) and the issuance of CO in electronic format also implies the need for e-system of COO (e.g., India-Malaysia ECA Annex 3-3 7(a)). E-Systems for verification of COOs (e.g., The PRC-Chile FTA Annex 6) come under e-exchange of COOs.
8	E-record keeping	The documents to be maintained are related to exportation, importation, and may include copies of COO and other documentary evidence of origin. (e.g., The PRC-Singapore FTA Art.31).
9	E-payment system	See, e.g., TPP Chapter 11 Section D.
10	E-application for customs refunds	Measure included in the TFPI Survey

continued on next page

Table 2 continued

¹³ To make the list of paperless trade measures as comprehensive as possible, two specific measures included in the UNRCs Survey, namely E-submission of sea cargo manifest (no. 4) and E-application of customs refund (no.10), are kept in the list although none of the trade agreements reviewed included them.

	Measure/Provision	Note
11	E-Customs System/ Customs Automation	This measure includes electronic focal point, provided by customs administration, through which its traders may submit all required regulatory information in order to obtain clearance of goods (e.g., The PRC-Peru FTA Art.54.4). In the agreement which mentions E-submission of customs declaration (e.g., EFTA-Colombia FTA Annex vii Art. 3.2(b)) /forms (e.g., Canada-Colombia FTA Art. 413) implies customs automation. In addition, this measure includes the introduction of a single administrative document, or an electronic equivalent, for the purpose of establishing/filing customs declarations at the import and export stages (e.g., EU-Cameroon EPA Art.35 1(b)) and the establishment of electronic means for all its customs reporting requirements (e.g., Australia-Chile Art. 5.11).
12	<i>Automated System for Risk Management and targeting</i>	This measure includes the provision of a single point for the documentary or electronic processing of those goods where a customs administration of a Party deems that the inspection of goods is not necessary to authorise clearance of the goods from customs control, which is mentioned in Article titled as "Risk management". (e.g., ASEAN-Australia-New Zealand FTA Chapter 4 Art. 9)
13	Single Window System	See, e.g., Agreement to Establish and Implement the ASEAN Single Window.
14	E-system for inter-organization communication	This measure includes electronic systems for information exchange between competent authorities and trading communities and electronic means for inter-agency communication. (Australia-The PRC FTA Art. 4.6). However, unlike Single Window System, single (one-time) submission of information by traders is not implied.
15	Laws for electronic transactions	The laws mentioned in this measure not only cover binding laws, regulations and measures made by competent authorities, but also includes self-regulations of private sectors. (e.g., Australia-Chile FTA Art. 16.5)
16	Use of electronic certificates and electronic signatures	This measure also covers e-signature or official seal of certificates of origin. (e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5)
17	<i>(Mutual) determination of authentication technologies</i>	This measure includes Promoting the interoperability of infrastructure such as electronic authentication. (e.g., New Zealand-Taipei,China PoC ECA Art.9.2 (c) (ii))
18	<i>Proving in court legal compliance of E-authentication</i>	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
19	<i>Meeting standards for E-signature and E-authentication</i>	See, e.g., Australia-Japan EPC Art. 13.6.
20	<i>Mutual recognition of digital certificates and E-signature</i>	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
21	<i>Interoperability of digital certificates used by business</i>	See, e.g., ASEAN-Australia-New Zealand FTA Chapter 10 Art. 5.
22	Trade-related electronic data exchange	This measure covers the development of electronic systems to facilitate government-to-government exchange of international trade data (e.g., CAFTA-DR Art. 5.3), the establishment and use of ICT for electronic data exchange. (e.g., Rep. of Korea-Viet Nam FTA Art.4.3(c))
23	<i>E-exchange of COO related information</i>	This includes the direct communications between the competent governmental authority of the exporting Party and the customs authority of the importing Party through e-mail of such information (e.g., Japan-Thailand EPC, Operational Procedures referred to in Chapter 2 (Trade in Goods) and Chapter 3 (Rules of Origin) Rule 11). It also includes the development of electronic systems for checking the authenticity of a COO (e.g., The PRC-Chile FTA Annex6).
24	<i>E-exchange of SPS related information</i>	Includes use of technological means of communication, such as electronic communication, video or telephone conference to discuss SPS related matters (e.g., Iceland-The PRC FTA Art.19)
25	<i>E-exchange of TBT related information</i>	Includes exchange of TBT related information through electronic mail, teleconferencing, videoconferencing (e.g., Australia-Rep. of Korea FTA Art. 5.10)
26	<i>E-transmission of financial information</i>	The information covers letters of credit, insurance certificates and etc. which are exchanged between financial institutions of parties for data-processing. (e.g., Canada-Rep. of Korea FTA, Annex 10-B Section C)
27	Use of international standards for paperless trade	Refers to the use of international standards when implementing any of the above-mentioned measures

Source: Authors.

3. PAPERLESS TRADE COVERAGE OF REGIONAL TRADE AGREEMENTS

In order to provide an overall picture of the paperless trade coverage in recent RTAs, we review how many of the 27 measures identified above are included in each of the RTAs included in the study.¹⁴ For each measure in table 2, an agreement gets a “1” if the measure is mentioned in any form or language, i.e., regardless of whether it is simply authorized or encouraged, or whether it is formulated as a binding or exclusive commitment – and a “0” otherwise. Ninety RTAs (66%) are found to contain at least one paperless trade measure.¹⁵

Figure 2 shows how many paperless trade measures are mentioned in each of the RTAs which are signed by East Asian economies – Similar figures for other Asian subregions and other world regions are available in Annex 2.

As illustrated in figure 2, among all agreements considered, the Trans-Pacific Partnership (TPP) Agreement has the highest number of paperless trade measures; its text refers to 21 of the 27 measures and provisions considered in our analysis. This agreement is not only the largest but also the newest of the regional agreements considered in this study – and the only one that has not yet entered into force –, providing further evidence of the growing interest in cross-border paperless trade. The second most comprehensive agreement on paperless trade is the United States (US)-Republic of Korea (RoK) agreement (“KOR-US”), with 15 measures included, followed by the bilateral agreements between Republic of Korea and Viet Nam (“KOR-VN”) featuring 14).¹⁶ As a reference, the WTO Trade Facilitation Agreement (TFA) only features 5 measures and provisions on paperless trade.

Figure 3 shows the average number of paperless trade measures in RTAs signed by countries from different world regions. Within Asia and the Pacific, Australia and New-Zealand seem to have the RTAs featuring the largest number of paperless trade measures (9.2), followed by East Asian economies (7.1), led by Republic of Korea.

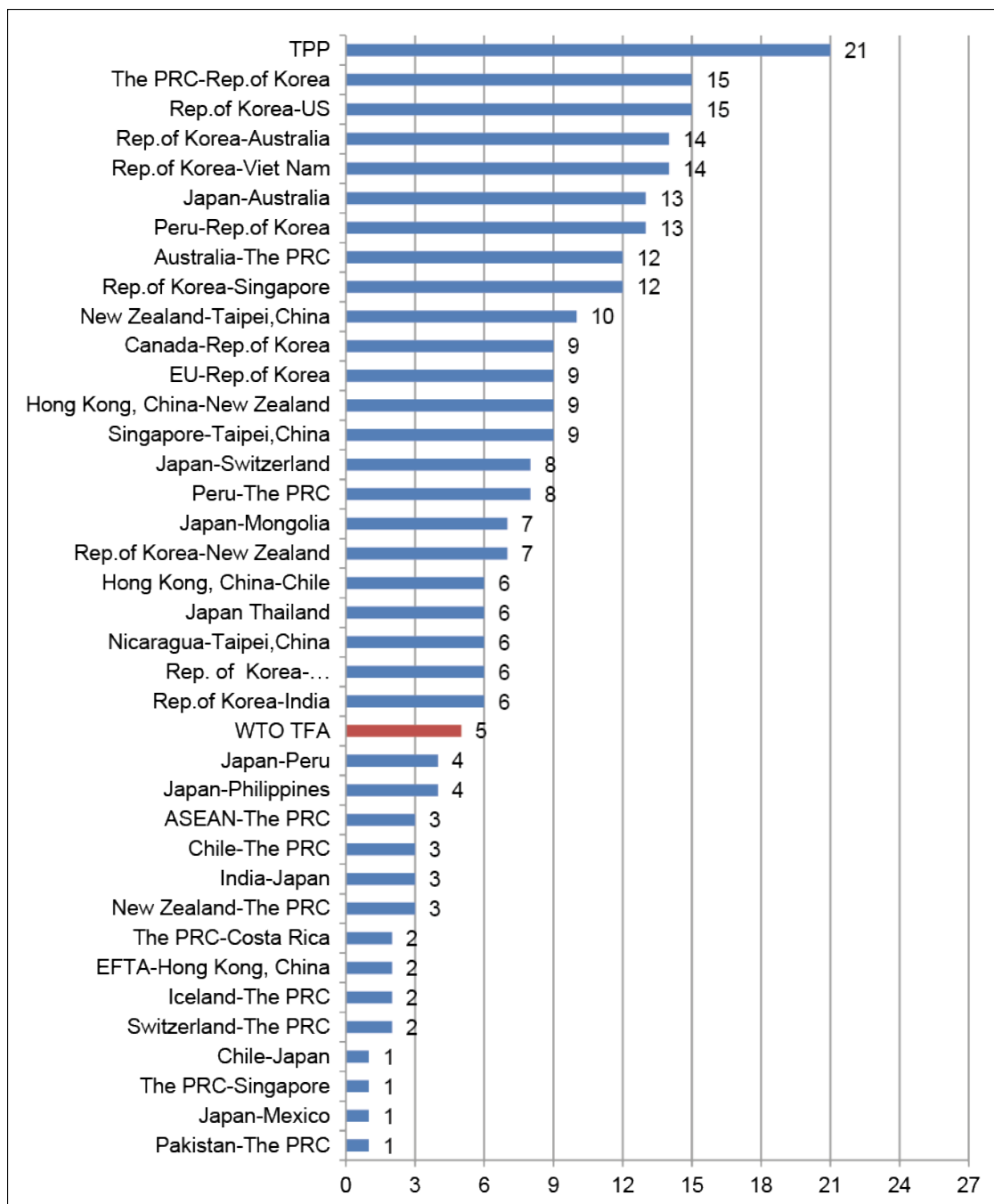
The average number of paperless trade shown in the agreements signed by South-East Asian economies is 6.8. Singapore, as the economy which has signed the highest number of RTAs containing paperless trade measures, leads South-East Asia in this area (see Figure A2.1 in Annex 2). In general, ASEAN plays an active role in including paperless trade measures in RTA rule-making. For instance, Intra-ASEAN agreements contain 10 paperless trade measures. But the content of its ASEAN+ agreements vary widely, from 12 measures featured in the ASEAN-Australia-New Zealand FTA to only 1 in the case, for example, of the ASEAN-India FTA.

¹⁴ More information on the RTAs included is available in Annex 1.

¹⁵ The same weight is given to all 27 measures, although arguments could be made that some measures are more important or far reaching than others. It is worth noting, however, that the same RTAs emerge as paperless trade “leaders” when only general measures are counted (i.e., the 12 sub measures shown in *italic* in table 2 are excluded from the analysis).

¹⁶ Many of the most comprehensive RTAs in terms of paperless trade are between Asia-Pacific Economic Cooperation (APEC) member economies. APEC, through its Electronic Commerce Steering Group and Paperless Trade Subgroup (ECSG), has actively promoted paperless trading among its members, in particular between 2002 and 2012. See, e.g., ECSG (2004).

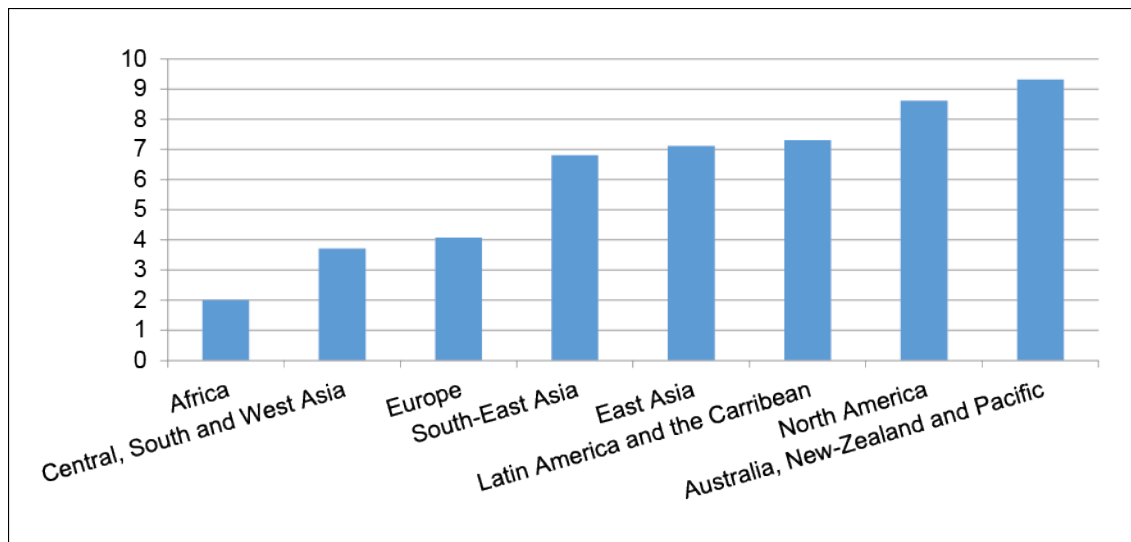
Figure 2: Paperless Trade Coverage in RTAs of East Asian Economies since 2005



Note: the figure shows the number of paperless trade measures mentioned in each agreement (out of 27).

Source: Authors.

Figure 3: Paperless Trade Coverage of RTAs in Different World Regions since 2005



Source: Authors.

The average number of paperless trade measures mentioned in RTAs signed by Central and South Asian as well as Middle-East economies is merely 4 (see Figure A2.2). India leads that region with the highest number of RTAs involving paperless trade measures (5), three of which have the same or higher number of paperless trade measures than that in the WTO TFA.

Interestingly, while the European Union (EU) has strived to develop paperless trade systems among its members,¹⁷ our analysis suggests that it has put limited emphasis on paperless trade in its RTAs, with an average number of paperless trade measures (4) barely on par with that of the WTO TFA (Figure A2.3). In contrast, many RTAs signed by North American economies, in particular United States and Canada, feature 8 or more paperless trade measures (Figure A2.4). RTAs signed by Caribbean, Central American and South American Economies also feature a significant number of paperless trade measures, in part because many of these agreements involve the United States or other Asia-Pacific Economic Cooperation (APEC) member countries (Figure A2.5). Peru leads other developing American economies in this area, being both the country with the highest number of RTAs containing paperless trade measures and member of one of the most comprehensive RTA in this area (US-Peru FTA).

3.1 Frequency of Paperless Trade Measures in RTAs

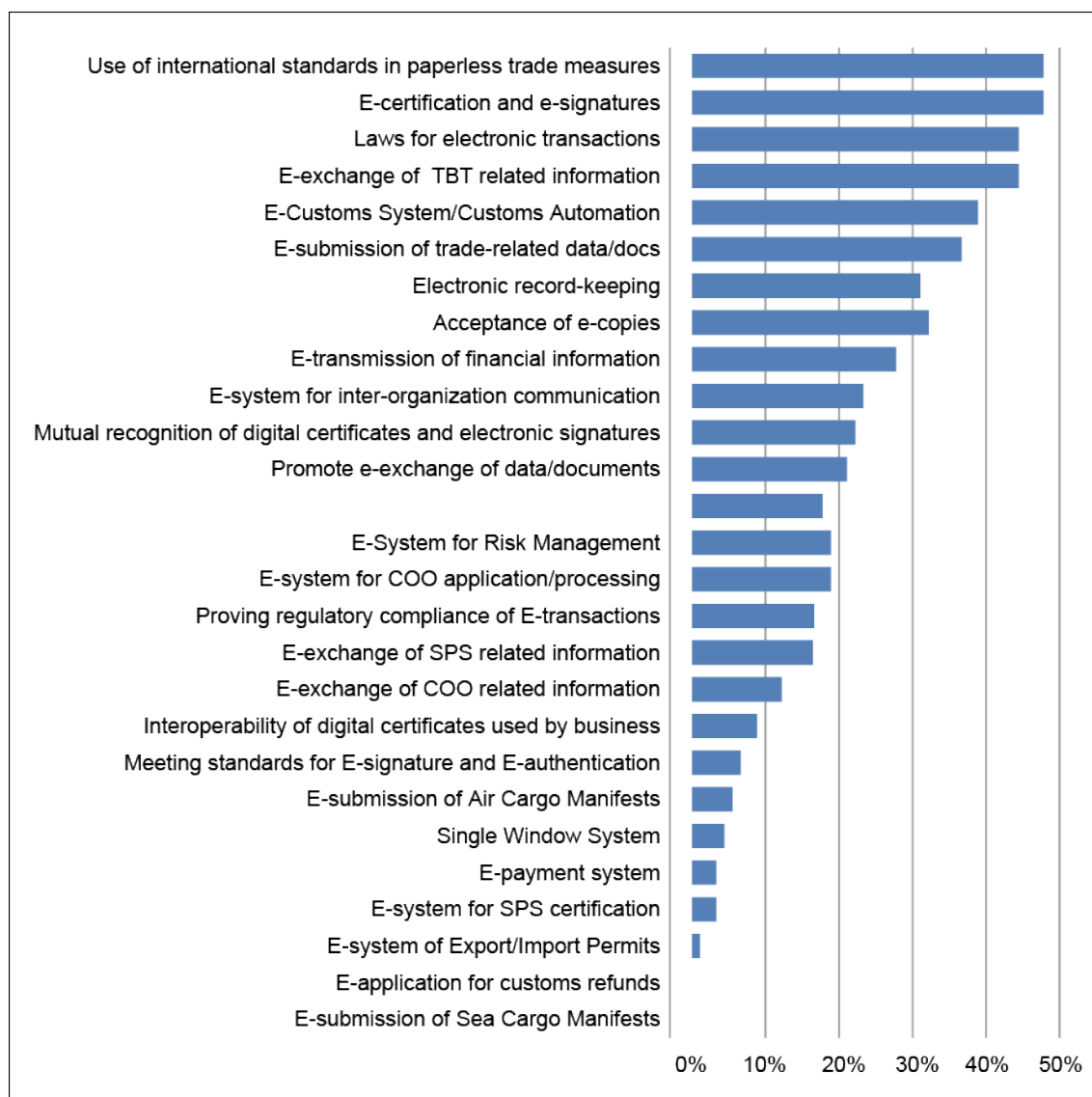
The paperless trade content of RTAs appear to be relatively diverse, with no single measure included in our typology mentioned in more than half of the 90 RTAs featuring at least one paperless trade related measure or provision. As shown in Figure 4, the use of International standards for electronic exchange of data and documents is most frequently mentioned in RTAs (47%), along with provisions on Promoting e-certification and e-signatures (47%) and the need for laws to enable electronic transactions (44%). Other more frequently mentioned general measures in the RTAs include general

¹⁷ See, e.g., Decision on a Paperless Environment for Customs and Trade by the European Parliament and the Council of the Council of the European Union (2008).

provisions encouraging Electronic submission of trade-related data and documents, Electronic record keeping, and Acceptance of electronic copies.

Interestingly, several specific measures are also frequently mentioned. Measures related to Electronic exchange of information on Technical Barriers to Trade (TBT) across borders are mentioned in more than 44% of the RTAs with at least one paperless trade measures,¹⁸ while 38% of these RTAs mention electronic or automated customs systems (37%). Measures related to the Electronic transmission of financial information across border between banks or private parties are also found in more than 27% of the RTAs.

Figure 4: Frequency of Paperless Trade Measures and Provision in Regional Trade Agreements since 2005



Note: the figure shows the percentage of RTAs (among the 90 containing at least one paperless trade measures) which feature provisions related to each of the paperless trade measures considered.

Source: Authors.

¹⁸ As mentioned in table 2, e-exchange of TBT related information includes such methods as electronic mail, teleconferencing, videoconferencing (e.g., Australia-Rep. of Korea FTA Art. 5.10).

The notion of electronic systems to facilitate inter-agency communications and collaboration is featured in some form in nearly 25% of the RTAs with at least one paperless trade measure. However, “Single Window” facilities, which are the subject of a dedicated provision in the WTO TFA, are specifically mentioned in only 5% of the RTAs. Various other specific measures which can, in principle, be integrated to either the national single window or the e-customs systems are mentioned in less than 5% of the RTAs, including e-payment systems or electronic systems for SPS certification or to obtain relevant import/export permit or licenses. Aside from electronic exchange of TBT and financial information, our analysis shows that indeed “cross-border” paperless trade measures and provisions tend to be less readily featured in RTAs than “domestic” paperless trade measures. Provisions calling for Mutual recognition of digital certificates and electronic signature, as well as Promoting the cross-border electronic exchange of trade-related data and documents are featured in roughly 20% of the RTAs with at least one paperless trade measure. Specific provisions related to electronic exchange of sanitary and phytosanitary (SPS) information and to certificates of origins (COOs) are featured in 16% and 12% of these RTAs, respectively.

4. A CLOSER LOOK: PAPERLESS TRADE IN SELECTED RTAS IN ASIA AND THE PACIFIC

The analysis presented above provided an overview of the type of paperless trade measures that are covered in RTAs and the extent to which RTAs signed by various countries emphasize paperless trade. In an effort to get deeper insights, we take a closer look at a small sample of recent bilateral and regional trade agreements, selected for their particular emphasis of paperless trade issues and involving leading economies in South, South-East and East Asia and the Pacific (see Table 3). The WTO TFA and the TPP are also included in the comparative analysis for reference.

Table 3: Status and Membership of Selected RTAs in Asia and the Pacific

Agreement Name/Abbreviation	Year of Entry into Force	Membership
Singapore-India Comprehensive Economic Cooperation Agreement/SING-IND	2005	Singapore, India
Australia-Chile Free Trade Agreement/AUS-CHI	2009	Australia, Chile
Japan-Switzerland Economic Partnership Agreement/JAP-SWI	2009	Japan, Switzerland
Intra-ASEAN Agreements (including The ASEAN Trade in Goods Agreement, The ASEAN Agreement on Customs, Single Window Agreement)/ASEAN (ATIGA, AAC and SWA)	2010 (ASW since 2005; ATIGA since 2010)	Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Viet Nam, Singapore
ASEAN-Australia-New Zealand Free Trade Agreement/AANZFTA	2010	ASEAN members, Australia, New Zealand
The United States- Rep. of Korea Free Trade Agreement/US-KOR	2012	The United States, Rep. of Korea
Rep. of Korea-Viet Nam Free Trade Agreement/KOR-VN	2015	Rep. of Korea, Viet Nam
Trans-pacific Partnership/TPP	Not yet in force (signed by all TPP members in 2015)	The United States, Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore, and Viet Nam

Source: Authors.

4.1 “Paperless Trading” Articles

As noted earlier, paperless trade measures are found in different chapters of an RTA, often as part of other substantive Articles or provisions. However, most recent RTAs also include one specific Article titled “Paperless Trading” or “Paperless Trade Administration”. Before looking in more detail at the paperless trade coverage of our selected sample of RTAs in Asia and the Pacific, it is useful to review such Articles. Table 4 shows the actual text of these Articles in the RTAs under review. All RTAs in our sample, with the exception of the intra-ASEAN agreements, include at least one article titled as such. These articles are generally found in e-commerce chapters, but not always. For example, the SING-IND places its “Paperless Trading” Article in the Customs Administration chapter, while the AUS-CHI Agreement features such Article in both the chapters of Customs Administration and Electronic Commerce. Regardless of the RTA considered, these Articles consistently promote the development and implementation of paperless trade systems among member states. However, details of commitments differ somewhat in substance and level of binding.

Table 4: List of Paperless Trading Provisions Containing a Binding Framework

RTAs	Text of Provisions Entitled “Paperless Trading” or “Paperless Trade Administration”	Commitment Level
AANZ	Art. 8 (1) “Each Party <u>shall, where possible</u> , work towards the implementation of initiatives which provide for the use of paperless trading.	Non-binding
	Art. 8(2) “The Parties <u>shall</u> co-operate in international fora to enhance acceptance of electronic versions of trade administration documents.”	Binding
	Art. 8(3) “The Parties <u>shall</u> exchange views and information on realizing, promoting and developments in paperless trading.”	Binding
	Art. 8(4) “Each Party <u>shall endeavour</u> to make electronic versions of its trade administration documents publicly available.”	Non-binding
JAP-SWI	Art. 79 “1. Each Party <u>shall endeavour</u> to make all trade administration documents available to the public in an electronic form.	Non-binding
	2. Each Party <u>shall endeavour</u> to accept trade administration documents submitted electronically as the legal equivalent of the paper versions of such documents.	Non-binding
	3. The Parties <u>shall</u> cooperate bilaterally and in international fora to enhance the acceptance of electronic versions of trade administration documents.”	Binding
AUS-CHI	Art. 16.9(1) “1. Each Party <u>shall endeavour</u> to accept electronic versions of trade administration documents used by the other Party as the legal equivalent of paper documents, except where: (a) there is a domestic or international legal requirement to the contrary; or (b) doing so would reduce the effectiveness of the trade administration process.” Art. 16.9(3) “Each Party <u>shall work towards</u> developing a single window to government incorporating relevant international standards for the conduct of trade administration, recognizing that each Party will have its own unique requirements and conditions.”	Non-Binding
	Art. 5.11(1) “The Customs Administration of each Party, in implementing initiatives which provide for the use of paperless trading, <u>shall take into account</u> the methods agreed by the World Customs Organization, including adoption of the World Customs Organization data model for the simplification and harmonisation of data. Art. 5.11(2) “The Customs Administration of each Party <u>shall work towards</u> having electronic means for all its customs reporting requirements, <u>as soon as practicable</u> .” Art. 5.11(3) “The introduction and enhancement of information technology <u>shall, to the greatest extent possible</u> , be carried out in consultation with all relevant parties including businesses directly affected.”	

continued on next page

Table 4 continued

RTAs	Text of Provisions Entitled “Paperless Trading” or “Paperless Trade Administration”	Commitment Level
SING-IND	Art. 4.4(1) “Recognising that trading using electronic filing and transfer of trade-related information and electronic versions of documents, as an alternative to paper-based methods will significantly enhance the efficiency of trade through reduction of cost and time, the Parties <i>shall co-operate</i> with a view to realising and promoting paperless trading between their respective customs administrations and its respective trading community. Art. 4.4(2) “The Parties <i>shall</i> exchange views and information on realizing, promoting and developments in paperless trading.”	Binding
KOR-US	Art. 15.6 “1. Each Party <i>shall endeavour</i> to make trade administration documents available to the public in electronic form. 2. Each Party <i>shall endeavour</i> to accept trade administration documents submitted electronically as the legal equivalent of the paper version of those documents.”	Non-binding
KOR-VN	Art. 10.7 “1. Each Party <i>shall endeavour</i> to make electronic versions of its trade administration documents publicly available. 2. Each Party <i>shall endeavour</i> to accept trade administration documents submitted electronically as the legal equivalent of the paper version of those documents. 3. Each Party <i>shall, where possible</i> , work towards the implementation of initiatives which provide for the use of paperless trading.”	Non-binding
TPP	Art. 14.9 “Each Party <i>shall endeavour</i> to: (a) make trade administration documents available to the public in electronic form; and (b) accept trade administration documents submitted electronically as the legal equivalent of the paper version of those documents.”	Non-binding

Most of the provisions in the “Paperless Trading” Articles are specified in non-binding terms. The two most commonly found provisions in the Articles are that parties will endeavor to (1) make electronic versions of their trade administration documents available publicly, and (2) accept trade documents submitted electronically as the legal equivalent of their paper version. Another provision often found is that they will (3) exchange views and/or cooperate with each other as well as internationally to enhance the acceptance of electronic documents. Interestingly, such cooperation provisions are often formulated as binding commitments. KOR-VN and AANZ also specifically commit “to work towards the implementation of initiatives which provide for the use of paperless trading”, which may be interpreted as commitment to implement joint pilot projects in paperless trade.

AUS-CHI is the only agreement where the development of a single window for trade documents is specifically included under a “Paperless Trading” Article. One of the two such Articles featured in AUS-CHI also specifically refer to engaging in paperless trading taking into account the “*methods agreed by the World Customs Organization, including adoption of the World Customs Organization data model for the simplification and harmonisation of data*”.

4.2 Paperless Trade Measures and Commitments

On the basis of the typology of paperless trade measures developed earlier, Table 5 provides an overview of the paperless trade coverage of each of the 8 selected RTAs, including in terms of the level of commitment and details attached to each of the paperless trade measures featured. The table shows that paperless trade measures vary significantly across RTAs, both in substance and nature. However, with the exception of the India-Singapore agreement, which entered into force over a decade

ago (2005), all other RTAs included in the table have deeper coverage of paperless trade than the WTO TFA. The Australia-Chile (2009) agreement appears to have been particularly pioneering for its time and still features some of the most binding and detailed paperless trade measures found in any RTAs, including the TPP.

Table 5: Paperless Trade Coverage in Selected Agreements in Asia and the Pacific

Agreement: Paperless Trade Measures	SING- IND	AUS- CHI	JAP- SWI	Intra ASEAN	AANZ FTA	KOR- US	KOR- VN	TPP	WTO TFA
Year of Entry into Force:	2005	2009	2009	2010	2010	2012	2015	—	—
Acceptance of electronic copies	*	**	**	**	***	**	**	**	*
E-submission of trade-related documents						*	*	*	*
<i>E-Submission of Air Cargo Manifests</i>						*	*	*	
E-system of Export or Import Permits									
E-system for SPS certification								*	
E-system of COO						*		*	
Electronic record-keeping	*	***			*	*		*	
E-payment system								***	*
Electronic/Automated Customs System/Customs Automation		*		*	**	***	**	***	
<i>Automated System for Risk Management and targeting</i>					**	***	***	***	
Electronic Single Window System		***		***				**	*
E-system for inter-organization communication	*			*					
Laws for electronic transactions	*	***	**		**		**	***	
Promoting e-certification and e-signatures		*	*	*	*	*	*	*	
<i>Mutual determination of authentication technologies</i>		***			*	*	*	*	
<i>Proving in court legal compliance of E-authentication</i>		*	*		*	*	*	*	
<i>Meeting standards for E-signature and E-authentication</i>			**			**		*	
<i>Mutual recognition of digital certificates and E-signature</i>		***	**		**		**	*	
<i>Interoperability of digital certificates used by business</i>		*			*		*		
Trade-related electronic data exchange	*			*** ⁱ		**	**	***	
<i>E-exchange of COO related information</i>				* ⁱ					
<i>E-exchange of SPS related information</i>				* ⁱ				*	
<i>E-exchange of TBT related information</i>		**		* ⁱ		**	*	**	
<i>E-transmission of financial information</i>			*		*	**		*	
International standards for paperless trade		*	*	*	*	*	*	*	*
Total number of paperless trade measures:	5	12	8	10	12	15	14	21	5

Notes: 1 star (*) indicates the measure is only mentioned, generally as an option, without further clarification; 2 stars (**) indicate the measure is encouraged (e.g., Shall endeavour to; or Shall, to the extent possible, to) with clarification on how it is to be provided/implemented (e.g. complying with relevant international standards); 3 stars (***) indicate that implementation of the measures is required and binding (e.g., shall) with details included on how to do so. ⁱ indicates that commitment to these measures is implied by the existence of the regional ASEAN Single Window Agreement itself.

Source: Authors.

a. Measures Related to Acceptance of Electronic Copies

As noted earlier, this type of measure is commonly found in RTA articles titled “Paperless Trading” (see table 4). Referring to table 5, all eight RTAs examined have one or more dedicated provisions encouraging development and acceptance of electronic versions of trade administration documents. In contrast, the WTO TFA includes a specific provision on Acceptance of Copies (Art. 10.2), with all parties expected to “, *where appropriate, endeavor to accept paper or electronic copies of supporting documents required for import, export or transit formalities.*”

Going beyond simple encouragements, the ASEAN Single Window Agreement and its Protocol on the Legal Framework to Implement the ASEAN Single Window do provide for a framework for acceptance and legal recognition of electronic documents among Member States. Such framework is indeed more elaborate and binding than those found in provisions of the other RTAs. In particular, Article 15 (Legal Effect of Electronic Documents, Data, and Information) of the Protocol indicate that “*Each Member State shall adopt procedures for authentication of NSW electronic documents, data, and information that shall be used or processed within the NSW and transmitted in an electronic form in the ASW environment.*” and that “*Subject to national laws, rules and regulations of each Member State, authenticated **electronic documents** produced in connection with transactions under this Protocol may be admissible as evidence of any fact stated therein.*”

b. Measures Related to E-submission of Trade-related Documents

Such measures are typically found in the articles on “Release of Goods” and “Express Shipment” under chapters titled “Customs Administration and Trade Facilitation” or “Customs Procedures”. Two of the eight RTAs include non-binding commitments to electronic submission of trade-related documents.

Electronic submission is urged in KOR-US and TPP, and is encouraged in WTO TFA. For example, KOR-US Article 7.2 requires members to “*provide for customs information to be submitted and processed electronically before the goods arrive in order for them to be released on their arrival*”. In WTO TFA, the country’s situation and capacity is considered through the words “*as appropriate*” when encouraging states to “*provide for advance lodging of documents in electronic formats*”.

Electronic submission of (air cargo) manifest is specifically promoted in several of the agreements. For instance, in the article on “Express Shipment” in TPP, parties shall “*allow a single submission of information covering all goods contained in an express shipment, such as a manifest, through, if possible, electronic means*”.

c. Measures Related to E-system for SPS Certification

Such measures are usually found in RTA chapters dedicated to “Sanitary and Phytosanitary Measures”, when they exist. Only one of the eight RTAs specifically refers to the potential goal of developing an electronic system for SPS certification.

TPP indicates that “*the Parties shall promote the implementation of electronic certification and other technologies to facilitate trade*” in its Article 7.12 on Certification.

d. Measures Related to E-system for Certificates of Origin (COO)

Paperless trade measures related to COO are usually found in chapters on “Rules of Origin and Origin Procedures”. Development of electronic systems for COO is implied in two of the agreements.

Specifically, KOR-US provides for electronic certification as one option. Specifically, an importer under KOR-US can claim preferential tariff treatment based on *“either a written or electronic certification by the importer, exporter, or producer”*. In TPP, a Committee on Rules of Origin and Origin Procedures will be established and *“consult on the technical aspects of submission and the format of the electronic certification of origin”*.

e. Measures Related to Electronic Record-keeping

This type of measure is usually found in the Article on “Records” or “Record Keeping Requirements” under the chapter of “Rules of Origin and Origin Procedures”, as documents subject to electronic record-keeping requirements in RTAs are related to COO issues in most cases. Five of the RTAs provide for electronic-record keeping, but only three have specific provisions related to this measure in their Rules of Origin chapters.

In AUS-CHI, the members are obliged to keep electronic records (Article 4.20). However, in KOR-US (Article 6.17 on “Record Keeping Requirements”) and TPP (Article 3.26), e-record keeping is only one of several options: *“any medium that allows for prompt retrieval, including electronic, optical, magnetic or written form in accordance with that Party’s law”* could be chosen by members. WTO TFA does not include any mention of electronic record-keeping.

f. Measures Related to E-payment System

This type of measure is not generally featured in RTAs. While the WTO TFA Article 7.2 has a separate provision on electronic payment indicating that, *“to the extent practicable”*, members shall *“adopt or maintain procedures allowing the option of electronic payment for duties, taxes, fees, and charges collected by customs incurred upon importation and exportation”*, such specific measure related to payment to customs is absent from any of the eight RTAs reviewed.

However, electronic payment is provided for in a very detailed way in TPP in the Chapter on “Financial Services” – with no particular focus on BtoG transactions. TPP member states are committed to providing the supply of electronic payment services for payment card transactions among members. It not only conditions the cross-border supply of this electronic payment service, but also sets clear limits to the supply scope, with the exclusion of the transfer of funds to and from transactors’ accounts, the exclusive use of proprietary networks to process, and on business to business basis. In addition, the section also provides for public policy exception to the supply of such electronic payment.

g. Measures Related to Electronic/Automated Customs System

The measures “electronic/automated customs system” and “automated system for risk management and targeting” are often found in the article of “Automation” under the chapter of “Customs Procedures”. The majority of the agreements reviewed (6 of 8 RTAs) encourages establishing or developing electronic/automated customs systems, while 4 provide specifically for risk management.

As can be seen in Box 1, making electronic systems accessible to customs users is a binding commitment in both KOR-VN (Article 4.3) and KOR-US (Article 7.3), as well as in TPP (Article 5.6). In contrast, the related provision in AUS-CHI (Article 5.11), which is included in an Article on “Paperless Trading” has greater scope but is of a “best endeavour” nature. It also has the particularity to stress the importance of consulting with stakeholders in developing the electronic systems, including businesses.

With regard to Automated System for Risk Management and targeting, it is made a requirement in the two KOR agreements as well as the TPP. However, the TPP language is more concise and the measure is included as part of the Article on “Automation” (Article 5.6), which also covers the setting up of a single window.

Box 1: Selected Articles Relating to E-Customs System/Customs Automation

KOR-US

Article 7.3: Automation

Each Party shall use information technology that expedites procedures for the release of goods and shall:

- (a) make *electronic systems* accessible to customs users;
- (b) endeavour to use international standards;
- (c) endeavour to develop electronic systems that are compatible with the other Party's systems, in order to facilitate bilateral exchange of international trade data; and
- (d) endeavour to develop a set of common data elements and processes in accordance with World Customs Organization (WCO) Customs Data Model and related WCO recommendations and guidelines.

Article 7.4: Risk Management

Each Party shall adopt or maintain *electronic or automated risk management systems* for assessment and targeting that enable its customs authority to focus its inspection activities on high-risk goods and that simplify the clearance and movement of low-risk goods.

TPP

Article 5.6: Automation

1. Each Party shall:
 - (a) endeavour to use international standards with respect to procedures for the release of goods;
 - (b) make electronic systems accessible to customs users;
 - (c) employ electronic or automated systems for risk analysis and targeting;
 - (d) endeavour to implement common standards and elements for import and export data in accordance with the World Customs Organization (WCO) Data Model;
 - (e) take into account, as appropriate, WCO standards, recommendations, models and methods developed through the WCO or APEC; and
 - (f) work toward developing a set of common data elements that are drawn from the WCO Data Model and related WCO recommendations as well as guidelines to facilitate government to government electronic sharing of data for purposes of analyzing trade flows.
2. Each Party shall endeavour to provide a facility that allows importers and exporters to electronically complete standardised import and export requirements at a single entry point.

h. Measures Related to Electronic Single window

Measures on single window are most commonly found in chapters dedicated to customs procedures and trade facilitation, although at least one RTA mentions such measures in its e-commerce chapter. Three of the eight RTAs refer to the need to establish single window facilities.

AUS-CHI mentions the establishment of single window in Article 16.9 (“Paperless Trading”) under the chapter of Electronic Commerce. In TPP, the term “single window” is not used but the need to develop such facility is specified in the last provision of the Article on “Automation” (Art. 5.6) of the Customs and trade facilitation chapter: *“Each Party shall endeavour to provide a facility that allows importers and exporters to electronically complete standardised import and export requirements at a single entry point.”* In contrast, the WTO TFA features a dedicated “Single Window” Article, with Members expected to endeavour to maintain such facility and use information technology to support it *“to the extent possible and practicable”*.

Among all RTAs, intra-ASEAN agreements have a special emphasis on electronic single window. Article 49 of the ATIGA indeed binds ASEAN members to take measures to establish not only a national but a regional single window, with specific implementation agreements and protocols providing details of what is to be done (see Box 2).

Box 2: Selected Articles Relating to Single Window

ASEAN Trade in Good Agreement

Article 49: Establishment of the ASEAN Single Window

Member States shall undertake necessary measures to establish and operate their respective *National Single Windows* and the *ASEAN Single Window* in accordance with the provisions of the *Agreement to Establish and Implement the ASEAN Single Window* and the *Protocol to Establish and Implement the ASEAN Single Window*.

WTO TFA

Article 10.4: Single Window

4.1 Members shall endeavour to establish or maintain a *single window*, enabling traders to submit documentation and/or data requirements for importation, exportation, or transit of goods through a single entry point to the participating authorities or agencies. After the examination by the participating authorities or agencies of the documentation and/or data, the results shall be notified to the applicants through the single window in a timely manner. [...]

4.4 Members shall, to the extent possible and practicable, use information technology to support the *single window*.

i. Measures Related to Laws for Electronic Transactions

Provisions related to establishment of laws for electronic transactions are consistently found in Electronic Commerce chapters of RTAs, typically under a specific Article focusing on domestic regulations. Six of the RTAs reviewed include such provisions, although they differ in substance.

As can be seen in Box 3, the JAP-SWI agreement (Article 77 on Domestic Regulation) provides for the most general provision, only calling for transparent administration of e-commerce and the need for regulations not be burdensome, on a best endeavour basis. Other RTAs are more specific and both KOR-VN and TPP provisions refer specifically to UNCITRAL instruments.

Box 3: Selected Articles Relating to Laws for Electronic Transactions

JAP-SWI

Article 77: Domestic Regulation

Each Party shall endeavour to ensure that all its measures affecting electronic commerce are administered in a transparent, objective, reasonable and impartial manner, and are not more burdensome than necessary.

KOR-VN

Article 10.4: Domestic Regulatory Framework

Each Party shall endeavour to adopt or maintain its domestic laws and regulations governing electronic transactions taking into account the UNCITRAL Model Law on Electronic Commerce 1996.

AUS-CHI

Article 16.5: Domestic Electronic Transaction Frameworks

1. Each Party shall adopt or maintain measures regulating electronic transactions based on the following principles:
 - (a) a transaction including a contract shall not be denied legal effect, validity or enforceability solely on the grounds that it is in the form of an electronic communication; and
 - (b) laws should not discriminate arbitrarily between different forms of technology.
2. Nothing in paragraph 1 prevents the Parties from making exceptions in their domestic laws to the general principles outlined in that paragraph.
3. Each Party shall:
 - (a) minimize the regulatory burden on electronic commerce; and
 - (b) ensure that its measures regulating electronic commerce support industry-led development of electronic commerce.

TPP

Article 14.5: Domestic Electronic Transactions Framework

1. Each Party shall maintain a legal framework governing electronic transactions consistent with the principles of the UNCITRAL Model Law on Electronic Commerce 1996 or the United Nations Convention on the Use of Electronic Communications in International Contracts, done at New York, November 23, 2005.
2. Each Party shall endeavour to:
 - (a) avoid any unnecessary regulatory burden on electronic transactions; and
 - (b) facilitate input by interested persons in the development of its legal framework for electronic transactions.

While the KOR-VN only encourages parties to take such instruments into account, the TPP requires that member states' domestic regulations regarding electronic transaction "*shall be consistent with*" the principles of the UNCITRAL Model Law on Electronic

Commerce 1996 or the United Nations Electronic Communications Convention, 2005. A similar reference to the e-CC is contained in the ASEAN Legal Protocol to the Single Window. The provisions regarding laws on electronic transactions in AUS-CHI are also stated in a more detailed way, setting various principles to be followed by parties in developing legislation in this area. The special emphasis on supporting “*industry-led development of electronic commerce*” is worth noting in this regard.

j. Measures Related to Promoting E-certification and E-signature

These measures are typically found in the articles titled “Electronic Authentication” and/or “Electronic Signature”¹⁹ under the chapter of Electronic Commerce. All eight RTAs reviewed feature some more or less specific provisions in this area.

SING-IND does not feature detailed provisions on electronic authentication and electronic signature, nor does the WTO TFA. In contrast, other RTAs generally seek to promote acceptance and mutual recognition of electronic authentication and signatures, including by encouraging the parties to maintain flexible and technology neutral laws and regulations in this area. In KOR-US and TPP, this is done by specifying what type of legislation parties should not adopt, e.g., laws that would “*prohibit parties to an electronic transaction from mutually determining the appropriate authentication methods for that transaction*” (TPP Article 14.6) or “*deny a signature legal validity solely on the basis that the signature is in electronic form*” (KOR-US Article 15.4).

KOR-VN and AUS-CHI agreements take a more “positive” approach with the relevant Articles instead indicating that “*shall adopt or maintain measures regulating electronic authentication*” (AUS-CHI Article 16.6) that would, for example, permit parties to mutually determine the appropriate authentication methods and “*not limit the recognition of authentication technologies or implementation models*” (KOR-VN Article 10.3).²⁰ Both agreements also commit parties to work towards the mutual recognition of digital certificates and electronic signature at the governmental level, and based on international standards, suggesting a higher level of overall commitment than in many other RTAs. Interoperability of electronic authentication and/or digital certificates is also encouraged in both the agreements, as well as in the TPP.

k. Measures Related to Trade-related Electronic Data Exchange

“Trade-related electronic data exchange” among parties, or cross-border paperless trade, is often promoted under the Articles of “Paperless Trading” in E-commerce chapters or “Automation” in Customs chapters. Five of the RTAs reviewed include related provisions.

Commitments in this area are typically on a best endeavour basis, with the notable exception of ASEAN, which features binding and detailed commitments on electronic exchange of data among members under its ASEAN Single Window (ASW) Agreement.

Among the other agreements reviewed, KOR-US, KOR-VN and TPP stand out in terms of making reference to specific international standards “*to facilitate bilateral exchange of international trade data*” (KOR-US Article 7.3). For example, in Article 5.6 on

¹⁹ Articles on e-transaction laws which reference UNCITRAL instruments also indirectly cover these issues. In many cases, the RTA Articles on “e-signature” simply restate key underlying principles of UNCITRAL texts.

²⁰ This provision reflects the principle of “technology neutrality” featured in UNCITRAL text as well as the new FA-PT text.

Automation, TPP Parties are committed to *“work toward developing a set of common data elements that are drawn from the WCO Data Model and related WCO recommendations as well as guidelines to facilitate government to government electronic sharing of data for purposes of analysing trade flows”*. While JAP-SWI, AUS-CHI and AANZ may not feature direct provisions on exchanging trade-related data electronically, an implicit commitment to it is made in *“Paperless Trading”* Articles, which all include a provision that *“Parties shall cooperate bilaterally [...] to enhance the acceptance of electronic versions of trade administration documents.”*

With regard to the four sub-measures, they are often specified under the specific chapters of *“Rules of Origin and Origin Procedures”*, *“Sanitary and Phytosanitary Measures”*, *“Barriers to Trade”* and *“Financial Service”* respectively. TPP is the only Agreement which has a specific commitment to exchange of information on SPS issues by electronic means, although it is limited to *“possible”* cases. In contrast, electronic exchange of TBT-related information is discussed in several agreements, although again on a *“best endeavour”* basis.

Among the RTAs reviewed in details, four agreements (US-KOR, JAP-SWI, AANZ and TPP) cover the electronic exchange of financial information. JAP-SWI uses “negative” language and states that: *“Neither party shall take measures that prevent transfers of information into or out of its Area or the processing of financial information, including transfers of data by electronic means” where such transfers [...] are necessary for the conduct of the ordinary business of a financial supplier of the other party*. In the chapter of financial services, the TPP urges members to allow electronic exchange of financial information, with an exception for protecting personal information and a requirement of obtaining prior authorization.

I. Measures Related to International Standards for Paperless Trade

Measures related to the use of international standards for paperless trade are normally found either in Articles on *“Automation”* in Customs chapters, or in *“Paperless Trading”* Articles in e-commerce chapters. All but one of the RTAs reviewed, as well as the WTO TFA, refer to and/or take into account international standards when implementing various paperless trade measures.

For example, parties in TPP and KOR-VN shall *“endeavour to use international standards”* when automating customs systems. The *“Paperless Trading”* Article in AUS-CHI refers to the need to establish single window by *“incorporating relevant international standards”*. The ASEAN ATIGA Article 58 on *“Application of Information Technology”* also states that *“Member States, where applicable, shall apply information technology in customs operations based on internationally accepted standards for expeditious customs clearance and release of goods.”*

As noted earlier, some paperless trade provisions go a step further and mention specific standards or conventions and recommendations to guide implementation – in particular in the TPP. In contrast, while the WTO TFA has a dedicated Article on *‘Use of International Standards’* (Article 10.3) in regulating formalities of importation, exportation, and transit, it is not specifically related to application of information technology and does not specify a set of standards or recommendations. It does, however, encourage parties to use and prepare and review periodically relevant international standards and establish a committee which works towards the implementation of international standards.

4.3 Linkages with the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific

The “Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific” (FA-PT) opened for signature on 1 October 2016, as the newest UN treaty in the area of trade and development.²¹ The FA-PT is not a regional trade agreement in the common sense of the term, as it does not include any trade liberalization commitments and focuses solely on enabling cross-border trade-related electronic data exchange among parties. It has been described as a regional “digital complement” to the WTO Trade Facilitation Agreement.²² Developed and negotiated by ESCAP Member States following adoption of a resolution on *Enabling Paperless Trade [...] for inclusive and sustainable intraregional trade facilitation* in 2012, it can be expected to provide a supportive and dedicated framework to accelerate the harmonized implementation of paperless trade commitments made by ESCAP Members with each other through RTAs.

Box 4: Objective of the Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific

Article 1 Objective

The objective of the present Framework Agreement is to promote cross-border paperless trade by enabling the exchange and mutual recognition of trade-related data and documents in electronic form and facilitating interoperability among national and subregional single windows and/or other paperless trade systems, for the purpose of making international trade transactions more efficient and transparent while improving regulatory compliance.

A review of the provisions of the FA-PT against the paperless trade measures and provisions in the selected RTAs confirms indeed that the FA-PT guiding principles are not only consistent with those found in RTA, but that participation in the FA-PT could indeed help countries fulfil or better implement several of their RTA commitments. For example, as noted earlier, a common provision in “Paperless Trading” Articles in RTAs is that parties will exchange views and/or cooperate with each other as well as internationally to enhance the acceptance of electronic documents; Participation in the FA-PT would readily meet RTA partners’ commitment to cooperate internationally on paperless trade. In particular, one of the most far reaching components of the FA-PT is Article 8 on “Cross-border mutual recognition of trade-related data and documents in electronic form.” Implementation of this provision is expected to potentially enable the electronic exchange and legal recognition of various trade-related data and documents such as electronic COO, SPS certificates and TBT certificates, as envisaged in various RTAs.

Some RTAs (e.g., KOR-VN and AANZ) also commit parties to “*work towards the implementation of initiatives which provide for the use of paperless trading*”. FA-PT Article 13 on “Pilot projects and sharing of lessons learned”, where “*The Parties shall endeavour to initiate and launch pilot projects on cross-border exchange of*

²¹ Any of the 53 Member States of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) may become a party. See: <http://www.unescap.org/resources/framework-agreement-facilitation-cross-border-paperless-trade-asia-and-pacific>

²² <http://www.tfafacility.org/new-un-treaty-facilitate-paperless-trade-asia-and-pacific-support-trade-facilitation-agreement>

trade-related data and documents in electronic form” would certainly support implementation of such RTA commitments.

Importantly, our analysis of RTAs revealed that implementation of paperless trade on the basis of international standards was one of the most common features and provisions among agreements that did address paperless trade issues. Such an approach is also consistent with that of the FA-PT Article 9 on “International Standards for exchange of trade-related data and documents in electronic form”, stating that Parties “*shall endeavour to apply international standards and guidelines in order to ensure interoperability in paperless trade and to develop safe, secure and reliable means of communication for the exchange of data*”, as well as “*endeavour to become involved in the development of international standards and best practices related to cross-border paperless trade.*” The first four “General Principles” (Article 5) of the FA-PT – (a) *Functional equivalence*; (b) *Non-discrimination of the use of electronic communications*; (c) *Technological neutrality*; (d) *Promotion of interoperability* – are in particular directly related to those established and promoted in UNCITRAL instruments referred to in several RTA provisions related to legislation on electronic transaction and/or e-signatures.

Building on these intentional standards and principles, the FA-PT provides more details on how some of the paperless trade provisions in RTAs may be implemented. For example, on single window, the FA-PT does not only encourage Parties to establish single windows, as the WTO TFA and several RTAs already do, but encourage them to “*use them for cross-border paperless trade*”. It also provides an intergovernmental and institutional framework to do so, with establishment of a Paperless Trade Council and working groups, and the development of individual and regional action plans. Looking forward, Parties may reflect relevant commitments made through RTAs in these action plans.

5. CONCLUSION

The analysis presented in this paper reveals that the number of paperless trade measures in RTAs entered into force globally since 2005 essentially doubled, with a large majority of RTAs now featuring one more measures aiming to exchange trade-related data and information electronically. In many cases, recent RTAs are found to go further than the WTO TFA in promoting digital trade facilitation and the application of modern information and communication technologies to trade procedures – with the possible exception of e-payment of duties and fees, which is not specifically mentioned in any of the RTAs reviewed. While 30 of the 138 RTAs reviewed feature one or more Articles dedicated to “Paperless Trading” or “Paperless Trade Administration”, provisions related to more specific paperless trade measures are found in different chapters, including but not limited to chapters on Customs and trade facilitation as well as on e-commerce.

Many of the recent RTAs in Asia and the Pacific implicitly or explicitly call upon the parties to develop electronic exchange of trade-related data and documents and work towards interoperability of paperless trade systems. However, they provide little detail on how to do so beyond recommending cooperation among the Parties taking into account existing international standards and tools. In this context, the new UN treaty on facilitation of cross-border paperless trade in Asia and the Pacific (FA-PT) provides a useful multilateral framework through which paperless trade-related RTA commitments may be concretized.

Looking forward, more research may be undertaken on the extent to which countries have implemented the various paperless trade measures they have committed to through RTAs. Preliminary evidence points to countries having achieved partial implementation at best. Even in the case of ASEAN, which has shown strong (binding) commitments to cross-border paperless trade through ATIGA and its related ASEAN Single Window Agreement, implementation has been much slower than expected. In this context, the new FA-PT stands as a potentially useful tool for RTA members to share experience and cooperate with a wider set of trade partners committed to paperless trade, providing new knowledge and renewed impetus to accelerate implementation of RTA commitments.

Further efforts may also be useful in refining the typology of paperless trade measures and provisions proposed in this paper. Similarly, more work may be needed to improve the accuracy of the RTA ratings in terms of depth of coverage and commitments to paperless trade, in particular by more fully taking into account the nature and level of bindings of each provision across a larger set of agreements.

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ANNEX 1: LIST OF TRADE AGREEMENTS REVIEWED

The list of all agreements reviewed is provided below. Texts from the entire population of RTAs entered into force in or after 2005 and available in the English language in the WTO RTA-IS database as of September 2016 were reviewed. Texts of the TPP and relevant intra-ASEAN Agreements were also reviewed, along with that of the WTO TFA.

Eighty-seven (63%) of the RTAs reviewed involve at least one member State from Asia and the Pacific. Thirty-eight RTAs (28%) are between countries in Asia and the Pacific (i.e., ESCAP member States) only. Forty-four (32%) and Forty three (31%) of the RTAs reviewed involve at least one European country or one American country, respectively. Less than 10% of the RTAs involve either one African or a Middle-East country.

	Agreement (Name)	List of Members	Entry into Force	Notes (– indicates no paperless trade measures; + indicates at least one paperless trade measure)
1	Agadir Agreement	Egypt, Jordan, Morocco, Tunisia	2007	–
2	*ASEAN-AUS-NZ (AANZ)	ASEAN, Australia, New Zealand	2010	Article 8 “Paperless Trading” (E-Commerce Chapter)
3	*ASEAN-The PRC	ASEAN, The PRC	2005	+
4	*ASEAN-India	ASEAN, India	2010	+
5	ASEAN-Japan	ASEAN, Japan	2008	–
6	ASEAN-Korea, Republic of	ASEAN, Korea, Republic of	2010	–
7	*AUS-Chile	Australia, Chile	2009	Article 16.9 “Paperless Trading” (E-Commerce Chapter), Article 5.11 “Paperless Trading” (Customs Administration Chapter)
8	*AUS-The PRC	Australia, The PRC	2015	Article 12.90
9	*Intra-ASEAN Agreements (ATIGA and ASW and ACC)	ASEAN members	2005+	+
10	Brunei-Japan	Brunei, Japan	2008	–
11	*Canada-Colombia	Canada, Colombia	2011	Article 1505
12	*Canada-Honduras	Canada, Honduras	2014	+
13	*Canada-Jordan	Canada, Jordan	2012	+
14	*Canada-Korea, Republic of	Canada, Republic of Korea	2015	Article 13.5
15	*Canada-Panama	Canada, Panama	2013	+
16	*Canada-Peru	Canada, Peru	2009	Article 1506
17	Central European FTA (CEFTA)	Albania, Bosnia and Herzegovina, Moldova, Montenegro, Serbia, Macedonia, Kosovo	2007	–
18	*Chile-The PRC	Chile, The PRC	2006	+
19	Chile-India	Chile, India	2007	–
20	*Chile-Japan	Chile, Japan	2007	+
21	Chile-Malaysia	Chile, Malaysia	2012	–

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	Agreement (Name)	List of Members	Entry into Force	Notes (– indicates no paperless trade measures; + indicates at least one paperless trade measure)
22	*Chile-Viet Nam	Chile, Viet Nam	2014	Article 5.12 (Customs Administration Chapter)
23	*The PRC-Costa Rica	The PRC, Costa Rica	2011	+
24	*The PRC-Korea, Republic of	The PRC, Republic of Korea	2015	Article 13.6 (e-commerce chapter)
25	*The PRC-New Zealand	The PRC, New-Zealand	2008	+
26	*The PRC-Singapore	The PRC, Singapore	2009	+
27	*Costa Rica-Singapore	Costa Rica, Singapore	2013	+
28	*CAFTA-DR	Costa Rica, Dominican, El Salvador, Guatemala, Honduras, United States	2006	+
29	EC (27) Enlargement			n/a
30	*EFTA-Albania	Albania, Liechtenstein, Switzerland, Iceland, Norway	2010	+
31	*EFTA-Bosnia and Herzegovina	Bosnia and Herzegovina, Iceland, Liechtenstein, Norway, Switzerland	2015	+
32	*EFTA-Canada	Canada, Iceland, Liechtenstein, Norway, Switzerland	2009	+
33	*EFTA-Central America	Costa Rica, Iceland, Liechtenstein, Norway, Switzerland, Panama	2014	+
34	*EFTA-Colombia	Colombia, Iceland, Liechtenstein, Norway, Switzerland	2011	+
35	EFTA-Egypt	Egypt, Iceland, Liechtenstein, Norway, Switzerland	2007	–
36	*EFTA-Hong Kong, China	Hong Kong, China; Iceland; Liechtenstein; Norway, Switzerland	2012	+
37	EFTA-Korea, Republic of	Iceland, Liechtenstein, Norway, Switzerland, Republic of Korea	2006	–
38	EFTA-Lebanon	Iceland, Liechtenstein, Norway, Switzerland, Lebanese Republic	2007	–
39	*EFTA-Montenegro	Iceland, Liechtenstein, Norway, Switzerland, Montenegro	2012	+
40	*EFTA-Peru	Iceland, Liechtenstein, Norway, Switzerland, Peru	2011	+
41	EFTA-SACU	Iceland, Liechtenstein, Norway, Switzerland, Botswana, Lesotho, Namibia, South Africa	2008	–

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				Notes
				(– indicates no paperless trade measures; + indicates at least one paperless trade measure)
	Agreement (Name)	List of Members	Entry into Force	
42	*EFTA-Serbia	Iceland, Liechtenstein, Norway, Switzerland, Serbia	2010	+
43	EFTA-Tunisia	Iceland, Liechtenstein, Norway, Switzerland, Tunisia	2005	–
44	*EFTA-Ukraine	Iceland, Liechtenstein, Norway, Switzerland, Ukraine	2012	+
45	Egypt-Turkey	Egypt, Turkey	2007	–
46	El Salvador-Honduras, Taipei,China	Chinese Taipei,China, El Salvador, Honduras	2008	–
47	EU-Albania	EU members, Albania	2006	–
48	EU-Algeria	EU members, Algeria	2005	–
49	*EU-Bosnia and Herzegovina	EU members, Bosnia	2008	+
50	*EU-Cameroon	EU members, Cameroon	2014	+
51	*EU-CARIFORUM States EPA	EU members; Antigua and Barbuda; Bahamas; Barbados; Belize; Dominica; Dominican Republic; Grenada; Guyana; Jamaica; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago	2008	+
52	*EU-Central America	EU members; Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua; Panama	2013	+
53	*EU-Colombia and Peru	EU Members, Colombia, Peru	2013	Article 165 “Management of Paperless Trading” (E-Commerce Chapter)
54	EU-Côte d'Ivoire	EU Members, Côte d'Ivoire	2008	–
55	*EU-Eastern and Southern Africa States Interim EPA	EU Members; Madagascar; Mauritius; Seychelles; Zimbabwe	2012	+
56	*EU-Georgia	EU members, Georgia	2014	+
57	*EU-Korea, Republic of	EU members, Republic of Korea	2011	+
58	EU-Montenegro	EU members, Montenegro	2008	–
59	*EU-Papua New Guinea/Fiji	EU members, Papua New Guinea, Fiji	2009	+
60	*EU-Rep. of Moldova	EU members, Rep. of Moldova	2014	+
61	EU-Serbia	EU members, Serbia	2010	–
62	*EU-Ukraine	EU members, Ukraine	2014	+

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	Agreement (Name)	List of Members	Entry into Force	Notes (– indicates no paperless trade measures; + indicates at least one paperless trade measure)
63	*Eurasian Economic Union (EAEU)	Armenia, Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation	2015	+
64	Eurasian Economic Union (EAEU)-Accession of the Kyrgyz Republic	Armenia, Belarus, Kazakhstan, Kyrgyz Republic, Russian Federation	2015	n/a
65	*Gulf Cooperation Council (GCC)-Singapore	Bahrain, Kingdom of; Kuwait, the State of; Oman; Qatar; Saudi Arabia, Kingdom of; United Arab Emirates; Singapore	2013	+
66	*Hong Kong, China-Chile	Hong Kong, China-Chile	2014	+
67	*Hong Kong, China-New Zealand	Hong Kong, China-New Zealand	2011	+
68	*Iceland-The PRC	Iceland, The PRC	2014	+
69	Iceland-Faroe Islands	Faroe Islands, Iceland	2006	–
70	India-Bhutan	India, Bhutan	2006	–
71	*India-Japan	India, Japan	2011	+
72	*India-Malaysia	India, Malaysia	2011	+
73	India-Nepal	India, Nepal	2009	–
74	*India-Singapore	India, Singapore	2005	Article 4.4 “Paperless Trading” (Customs chapter)
75	*Japan-Australia	Japan, Australia	2015	Article 13.3 “Paperless Trade Administration” (E-Commerce Chapter)
76	Japan-Indonesia	Japan, Indonesia	2008	–
77	Japan-Malaysia	Japan, Malaysia	2006	–
78	*Japan-Mexico	Japan, Mexico	2005	+
79	*Japan-Mongolia	Japan, Mongolia	2016	Article 9.8 “Paperless Trade Administration” (E-Commerce)
80	*Japan-Peru	Japan, Peru	2012	+
81	*Japan-Philippines	Japan, Philippines	2008	Chapter 5 “Paperless Trading”
82	*Japan-Switzerland	Japan, Switzerland	2009	Article 79 “Paperless Trade Administration” (E-Commerce chapter)
83	*Japan-Thailand	Japan, Thailand	2007	Chapter 5 “Paperless Trading”
84	Japan-Viet Nam	Japan, Viet Nam	2009	–
85	*Jordan-Singapore	Jordan, Singapore	2005	+
86	*Korea, Republic of-Australia	Republic of Korea, Australia	2014	Art. 15.7 “Paperless Trading” (E-Commerce chapter)
87	*Korea, Republic of-India	Republic of Korea, India	2010	+
88	*Korea, Republic of-New Zealand	Republic of Korea, New Zealand	2015	+
89	*Korea, Republic of-Singapore	Republic of Korea, Singapore	2006	Art. 18.7 “Paperless Trading” (Co-operation chapter)

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	Agreement (Name)	List of Members	Entry into Force	Notes (– indicates no paperless trade measures; + indicates at least one paperless trade measure)
90	*Korea, Republic of-Turkey	Republic of Korea, Turkey	2013	+
91	*Korea, Republic of-US	Republic of Korea, US	2012	Art. 15.6 “Paperless Trading” (E-Commerce chapter)
92	*Korea, Republic of-Viet Nam	Republic of Korea, Viet Nam	2015	Art.10.7 “Paperless Trading” (E-Commerce chapter)
93	*Malaysia-Australia	Malaysia, Australia	2013	Art. 15.9 “Paperless Trading” (E-Commerce Chapter)
94	Mauritius-Pakistan	Mauritius, Pakistan	2007	–
95	MERCOSUR-India	Argentina, Brazil, Paraguay, Uruguay, India	2009	–
96	*New Zealand-Taipei,China	New Zealand, Taipei,China	2013	Article 3 “Paperless Trading” (E-Commerce Chapter)
97	*New Zealand-Malaysia	New Zealand, Malaysia	2010	+
98	*Nicaragua-Chinese Taipei,China	Nicaragua, Taipei,China	2008	+
99	*Pakistan-The PRC	Pakistan, The PRC	2007	+
100	*Pakistan-Malaysia	Pakistan, Malaysia	2008	+
101	Pakistan- Sri Lanka	Pakistan, Sri Lanka	2005	–
102	*Panama-Singapore	Panama, Singapore	2006	Art. 4.5 “Paperless Trading” (Customs Procedures Chapter)
103	*Peru-The PRC	Peru, The PRC	2010	+
104	*Peru-Korea, republic of	Peru, Republic of Korea	2011	Art. 14.6 “Paperless Trading” (E-Commerce Chapter)
105	*Peru-Singapore	Peru, Singapore	2009	+
106	*Singapore-Taipei,China	Singapore, Taipei,China	2014	Art.11.6”Paperless Trade Administration” (E-Commerce Chapter), Art. 5.4 “Paperless Trading” (Customs Chapter)
107	South Asian Free Trade Agreement (SAFTA)	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	2006	n/a
108	South Asian Free Trade Agreement (SAFTA)- Accession of Afghanistan	Afghanistan; Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; Sri Lanka	2011	n/a
109	Southern African Development Community (SADC)- Accession of Seychelles	Angola; Botswana; Lesotho; Madagascar; Malawi; Mauritius; Mozambique; Namibia; Seychelles; South Africa; Swaziland; Tanzania; Zambia; Zimbabwe	2015	n/a
110	*Switzerland-The PRC	Switzerland, The PRC	2014	+
111	*Thailand-Australia	Thailand, Australia	2005	Art. 1107 “Paperless Trading” (E-Commerce Chapter)

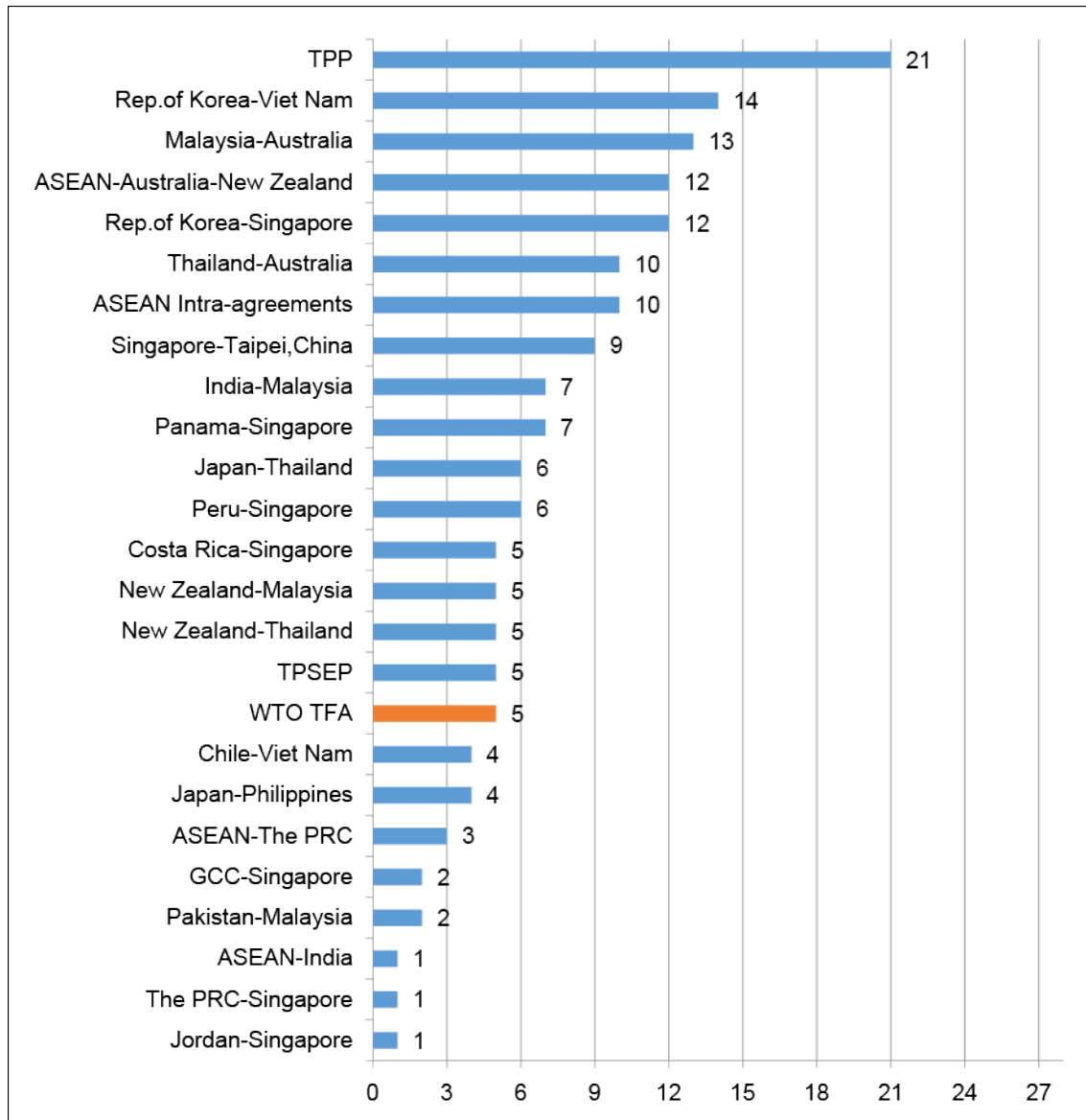
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	Agreement (Name)	List of Members	Entry into Force	Notes (– indicates no paperless trade measures; + indicates at least one paperless trade measure)
112	*Thailand-New Zealand	Thailand, New Zealand	2005	Art. 10.6 “Paperless Trading” (E-Commerce Chapter), Art.3.12 “Paperless Trading and Use of Automated Systems” (Customs Procedures and Cooperation)
113	*Trans-Pacific Strategic Economic Partnership (TPSEP)	Brunei, Chile, New Zealand, Singapore	2006	Art. 5.10 “Paperless Trading” (Customs Procedures Chapter)
114	Treaty on a Free Trade Area between members of the Commonwealth of Independent States (CIS)	Armenia; Belarus; Kazakhstan; Kyrgyz Republic; Moldova, Republic of; Russian Federation; Tajikistan; Ukraine	2012	n/a
115	Turkey-Albania	Turkey, Albania	2008	–
116	Turkey-Chile	Turkey, Chile	2011	–
117	Turkey-Georgia	Turkey, Georgia	2009	–
118	Turkey-Jordan	Turkey, Jordan	2011	–
119	Turkey-Mauritius	Turkey, Mauritius	2013	–
120	Turkey-Montenegro	Turkey, Montenegro	2010	–
121	Turkey-Morocco	Turkey, Morocco	2006	–
122	Turkey-Palestinian Authority	Turkey, Palestine	2005	–
123	Turkey-Serbia	Turkey, Serbia	2010	–
124	Turkey-Syria	Turkey, Syria	2007	–
125	Turkey-Tunisia	Turkey, Tunisia	2005	–
126	Ukraine-Azerbaijan	Ukraine, Azerbaijan	2008	–
127	Ukraine-Belarus	Ukraine, Belarus	2006	–
128	Ukraine-Moldova	Ukraine, Moldova	2005	–
129	*Ukraine-Montenegro	Ukraine, Montenegro	2013	+
130	*US-Australia	US, Australia	2005	Art. 16.7 “Paperless Trade Administration” (E-Commerce Chapter)
131	*US-Bahrain	US, Bahrain	2006	+
132	*US-Colombia	US, Colombia	2012	Art.15.7 “Paperless Trade Administration” (E-Commerce Chapter)
133	*US-Morocco	US, Morocco	2006	+
134	*US-Oman	US, Oman	2009	+
135	*US-Panama	US, Panama	2012	+
136	*US-Peru	US, Peru	2009	+
137	*TPP	Australia, Canada, Japan, Malaysia, Mexico, Peru, US, Viet Nam, Chile, Brunei, Singapore, New Zealand	Not in f.	Art. 14.9 “Paperless Trading” (E-Commerce Chapter)
138	WTO Trade Facilitation Agreement	110+ WTO Members as of February 2017	2017	+

ANNEX 2: PAPERLESS TRADE COVERAGE IN RTAs OF SELECTED ASIAN SUBREGIONS AND WORLD REGIONS

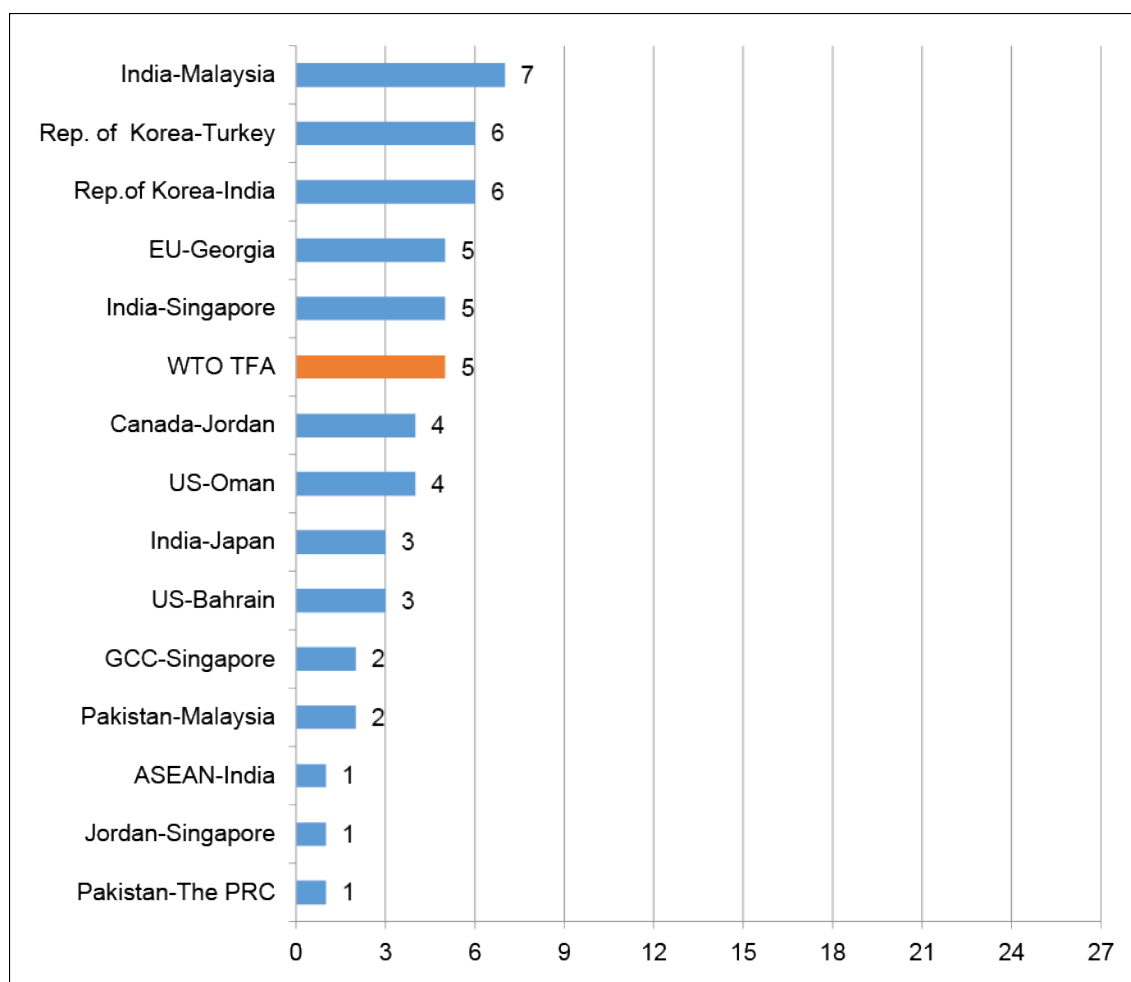
Figure A2.1: Paperless Trade Coverage in RTAs of South-East Asian Economies since 2005



Note: number of paperless trade measures mentioned in each agreement (out of 27).

Source: Authors.

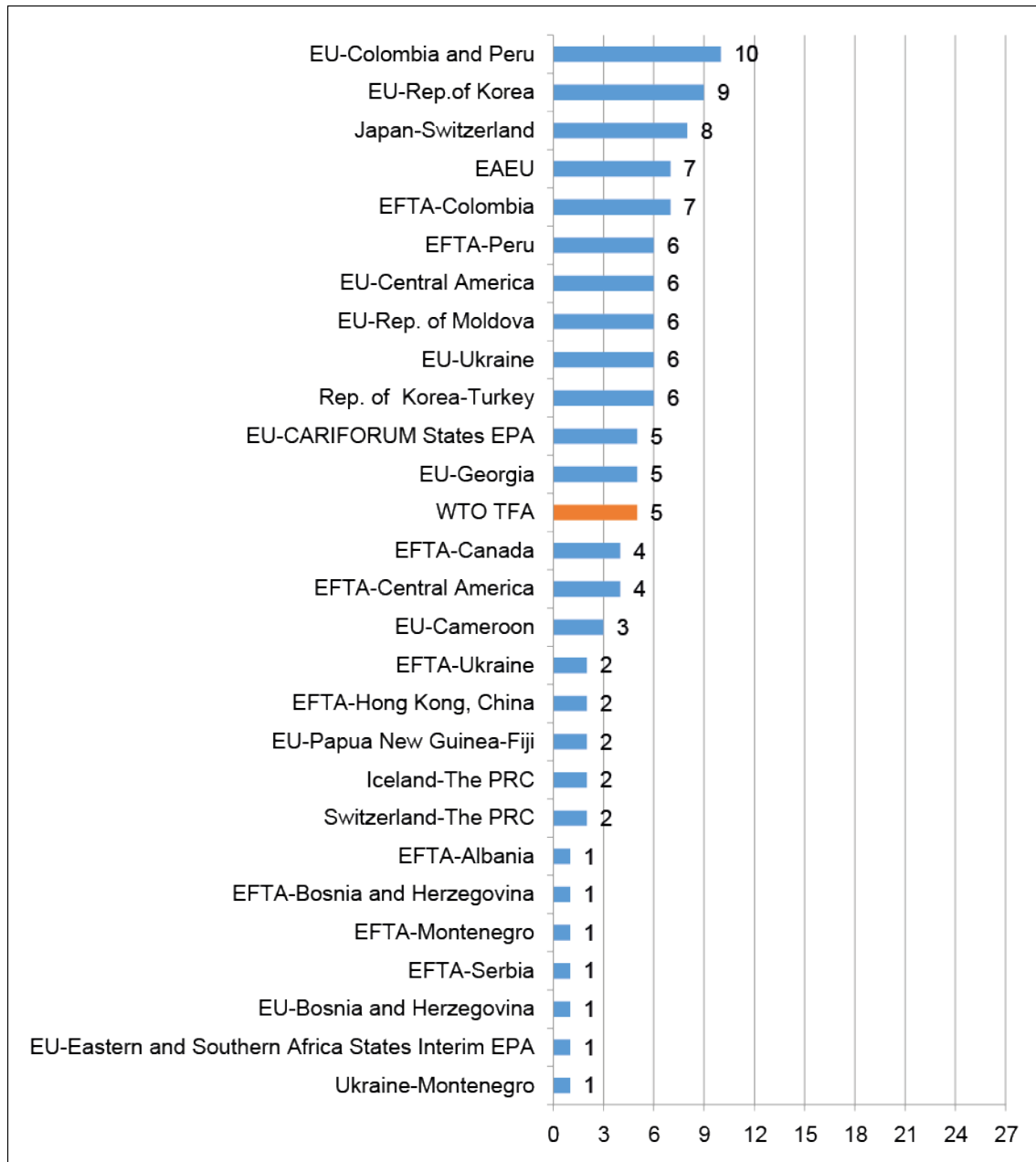
Figure A2.2: Paperless Trade Coverage in RTAs of South, Central and Western Asia and Middle East Economies since 2005



Note: number of paperless trade measures mentioned in each agreement (out of 27).

Source: Authors.

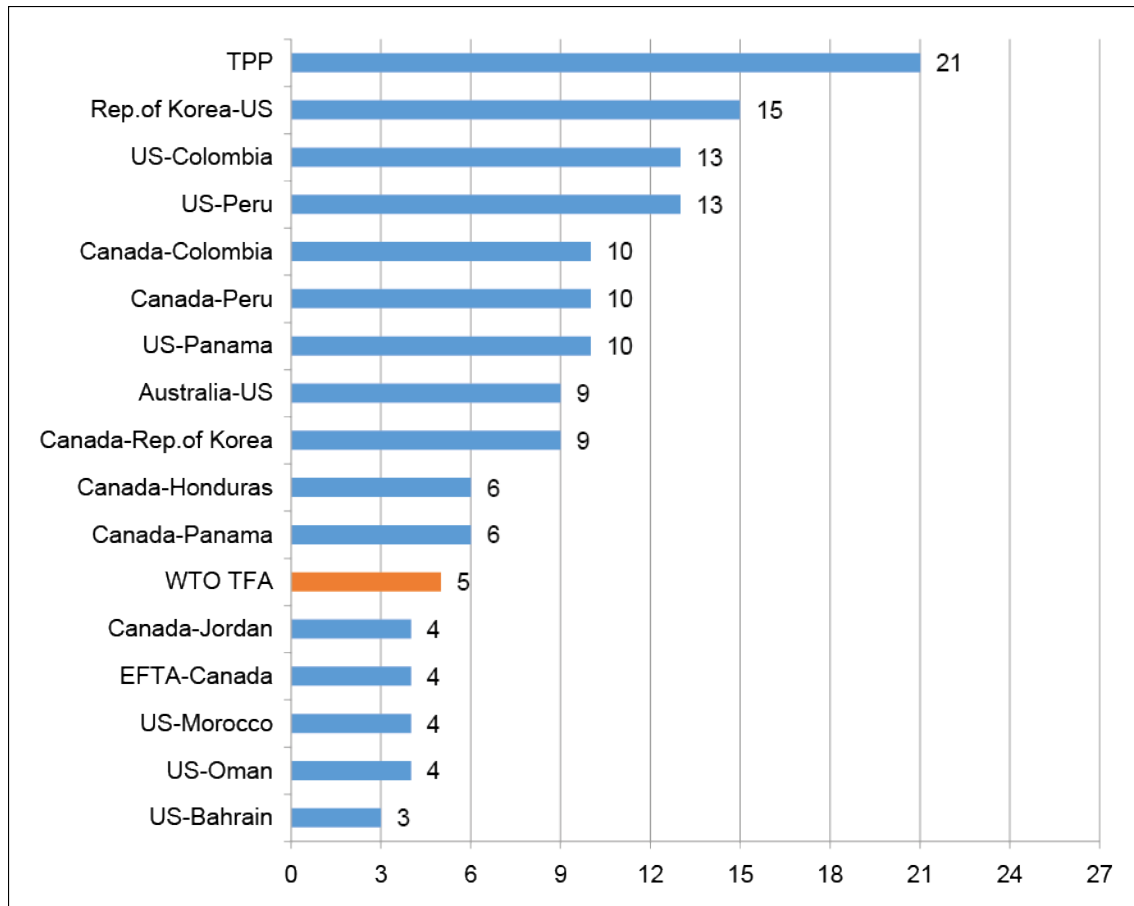
Figure A2.3: Paperless Trade Coverage in RTAs of European Economies since 2005



Note: number of paperless trade measures mentioned in each agreement (out of 27).

Source: Authors.

Figure A2.4: Paperless Trade Coverage in RTAs of North American Economies since 2005

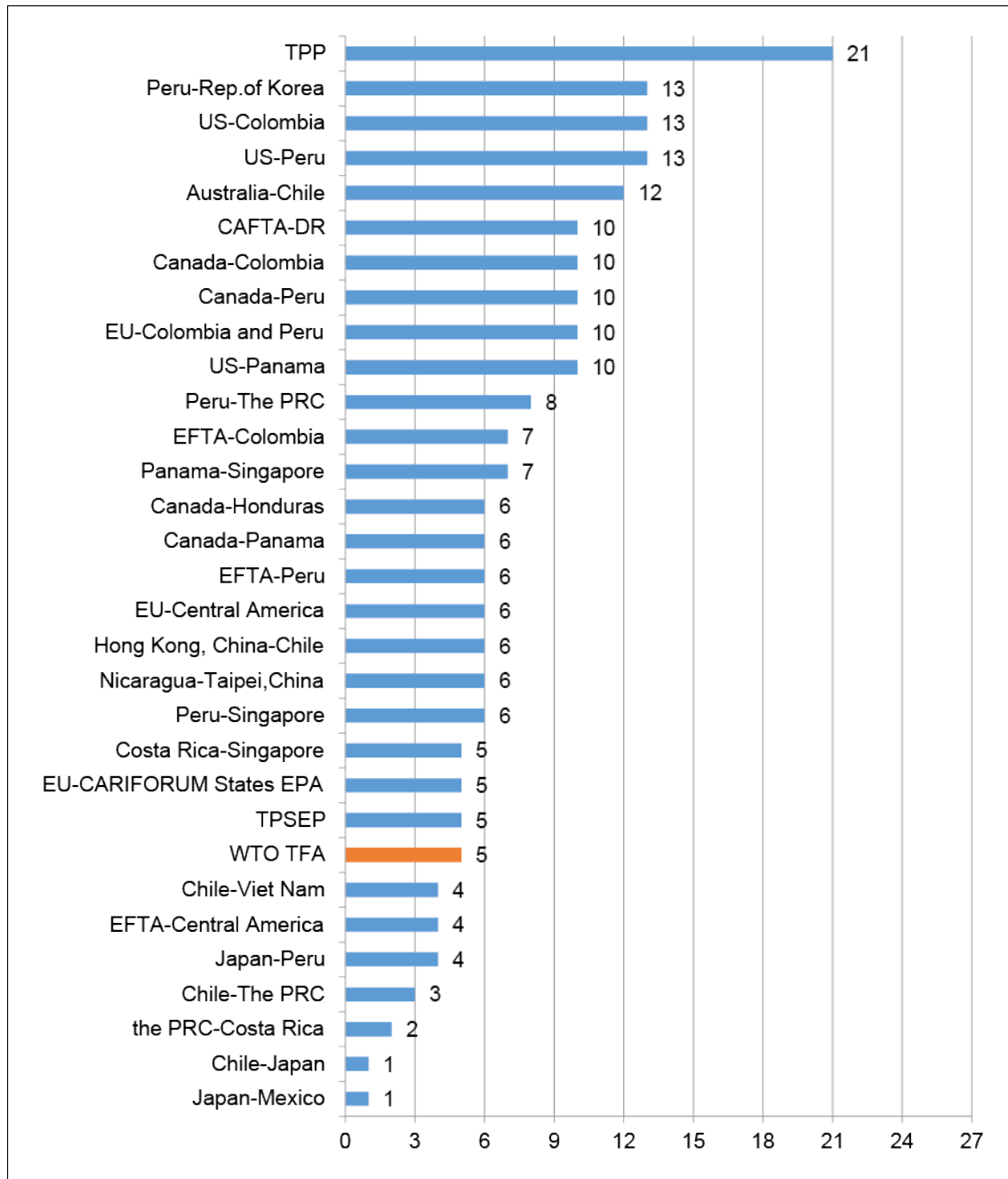


Note: number of paperless trade measures mentioned in each agreement (out of 27).²³

Source: Authors.

²³ Peru-Mexico, Mexico-Central America, and Mexico-Panama RTAs whose texts are available only in Spanish are not included in this analysis.

Figure A2.5: Paperless Trade Coverage in RTAs signed by South and Central American and the Caribbean Economies since 2005



Note: number of paperless trade measures mentioned in each agreement (out of 27).

Source: Authors.