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COMMUNICATION BREAK DOWN:

TYPOLOGY OF TELECOMMUNICATIONS PROVISIONS IN REGIONAL TRADE AGREEMENTS

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ABSTRACT: Although a growing number of regional trade agreements (RTAs) include telecommunications provisions, the collection and systematization of information on telecommunications provisions in RTAs remain limited. This paper addresses this gap by mapping and reviewing the different types of provisions on telecommunications found in RTAs that have been notified to the World Trade Organization (WTO). The analysis reveals that telecommunications provisions in RTAs cover a broad range of regulatory issues, from access and use to anticompetition to standards and technical regulations and cooperation. While some telecommunications provisions, in particular on telecommunications services, replicate existing WTO rules, many other provisions add clarifications or expand some of the disciplines set out in the WTO agreements. At the same time, new types of provisions have been devised to address new regulatory and technological issues, including mobile services, internet access and consumer rights. These new provisions, consistent with the overall aim of the WTO rules, aim at fostering a pro-competitive regulatory framework of the telecommunications sector.

KEYWORDS: World Trade Organization; Regional Trade Agreements, Telecommunications, Digital economy.

JEL CLASSIFICATIONS: F13, F15

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1 INTRODUCTION

Over the past three decades, the telecommunications market has experienced far-reaching changes. The industry has shifted from one in which government monopolies supplied the services, usually over landlines, to one in which the vast majority of governments have sold some or all of their ownership interests and introduced competition. Mobile phone services have also overtaken fixed-line services in nearly all countries, now accounting for close to 70 percent of all telephones in use globally (ITU, 2020). In addition, the internet has become an integral part of the business world, of consumers' lives, and the global economy since its commercialization in the late 1990s. The role of national regulators has also changed over time as technological advances and sector reforms have taken hold.

Part of the important telecommunications market reforms that took place in the 1990s have been captured in binding market access commitments in the World Trade Organization (WTO). During the Uruguay Round of multilateral trade negotiations (1989-1994), the first multilateral framework for trade in services, including telecommunications, was laid out in the General Agreement on Trade in Services (GATS). The Annex on Telecommunications to the GATS (GATS Annex) includes obligations on access to public telecommunications transport networks and services (PTTNS). The Uruguay Round was followed by extended negotiations on basic telecommunications, which concluded in 1997 with market access commitments and a Reference Paper on Regulatory Principles on Basic Telecommunications (Reference Paper) establishing legally binding sector regulatory principles.[2] In total, 69 WTO members, representing over 90 percent of global telecommunications revenue at the time, had made market access commitments and 57 governments committed, in whole or with minor modifications to the Reference Paper. Another six members scheduled some elements of the Reference Paper.

Today, as a result of accession of new WTO members and some unilateral improvements of schedules by existing members, 116 governments have market access commitments on telecommunications services. Of these, 101 members, both developed and developing countries, have now scheduled the Reference Paper, 94 of them have committed to it in full, or with only minor modifications.[3] In parallel to the commitments negotiated in the WTO, many of these and other WTO members have negotiated specific provisions on telecommunications in their regional trade agreements (RTAs).

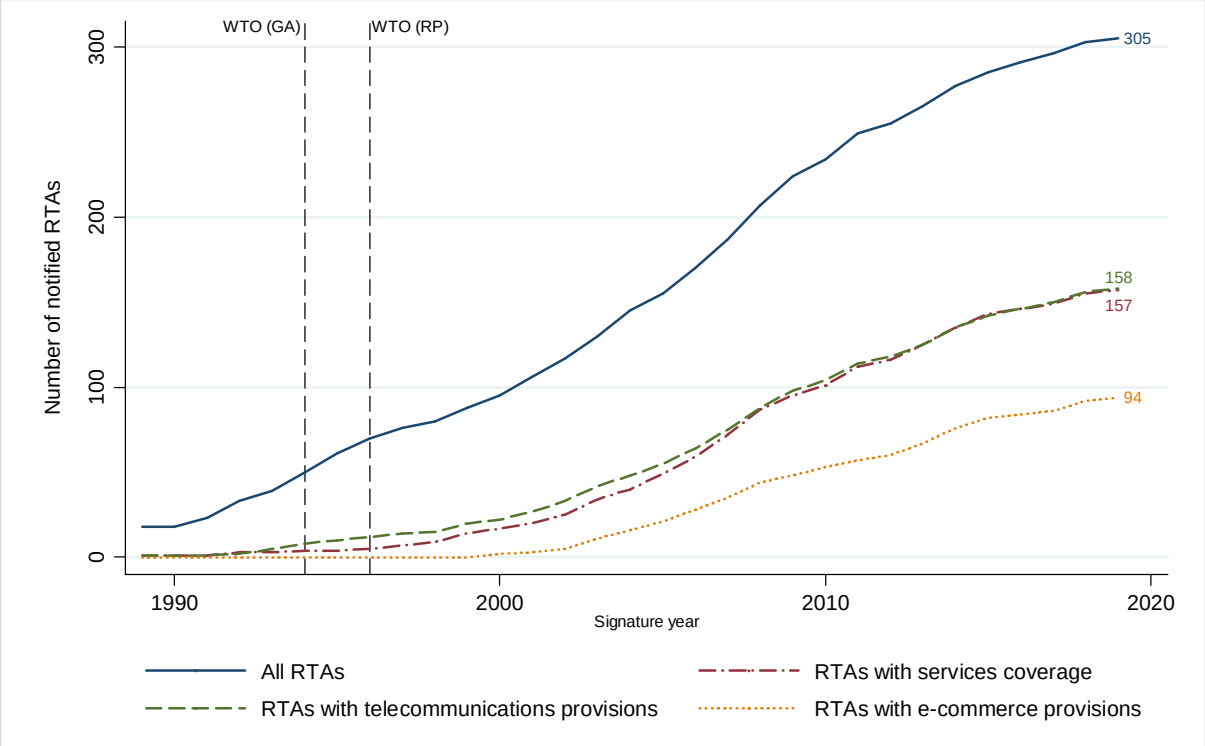
While a few studies have reviewed provisions on telecommunications included in selected RTAs (Tuthill and Sherman, 2008; Burri, 2020), the literature does not provide a comprehensive and detailed typology of all existing telecommunications provisions found in RTAs. This paper fills this gap by identifying commonalities and differences in addressing explicitly telecommunication in RTAs in light of existing provisions found in WTO Agreements, in particular the GATS Annex on Telecommunications and Reference Paper.

A detailed mapping of telecommunications provisions in RTAs reveals that the inclusion of provisions referring explicitly to telecommunications in RTAs is not a recent phenomenon (Monteiro, 2021). As of December 2020, 158 RTAs, representing 55 percent of all the agreements notified to the WTO and currently in force, incorporate at least one provision mentioning explicitly telecommunications, as highlighted in Figure 1. Although the inclusion of provisions on telecommunications and on electronic commerce (e-commerce) in RTAs tends to follow the same upward trend, provisions on telecommunications remain more prevalent in RTAs than provisions on e-commerce.

[2] In this paper, the term "basic telecommunications" refers to all basic networks and services and use, while the term "public telecommunications transport networks and services" (PTTNS) refers to the specific subset of basic services that are required to be offered to the public generally. The distinction between these terms is further discussed in section 4.1.

[3] See https://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_exempt_list_e.htm.

Figure 1: The number of RTAs with telecommunication provisions has increased steadily



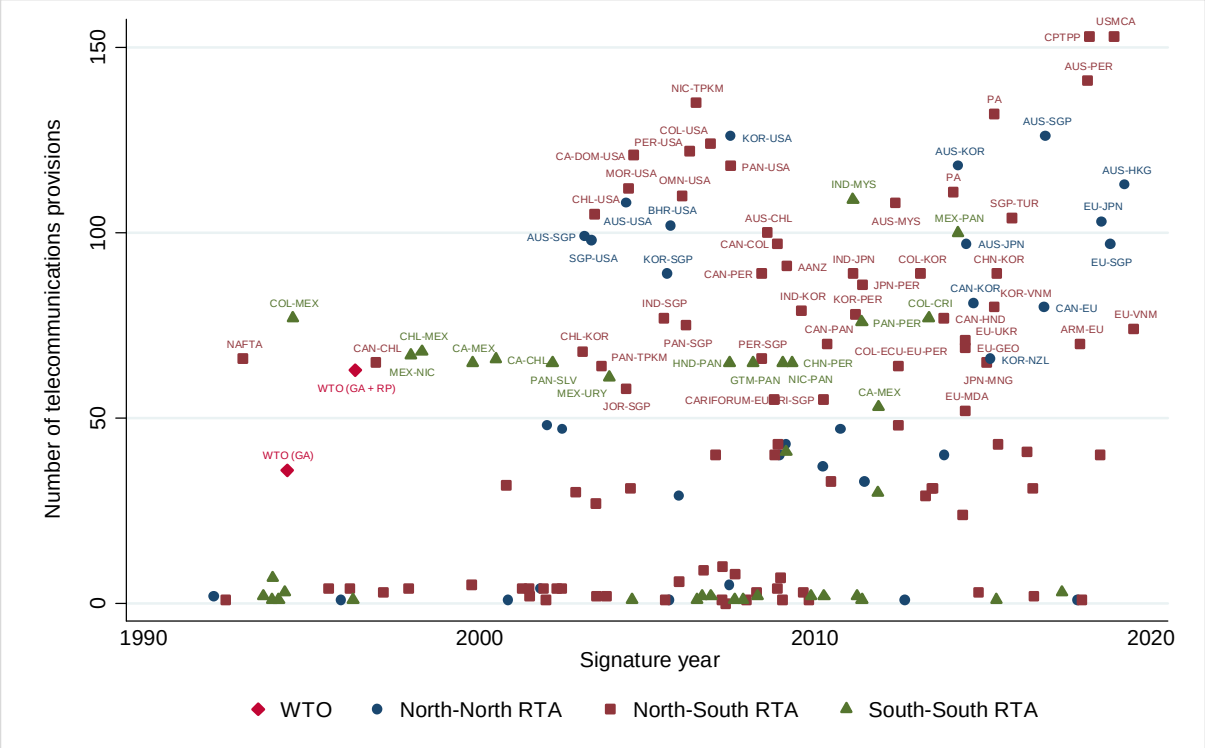
Source: Monteiro (2021).
Note: The graph only displays notified RTAs currently in force. WTO (GA) = GATS Annex; WTO(RP) = Reference Paper.

Along with the increasing number of RTAs with telecommunication provisions, the number and level of details of these provisions have also increased significantly over the years, as highlighted in Figure 2. Most detailed telecommunications provisions are found in stand-alone chapters or annexes on telecommunications services. The RTA between Canada, Mexico and the United States (USMCA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Viet Nam are currently the notified RTAs with the highest number of telecommunications provisions.

Provisions in RTAs are known to be heterogeneous across agreements, and telecommunications provisions are no exception. Telecommunications provisions found in RTAs cover a broad range of issues. Some provisions refer to information and communications technologies (ICT) and telecommunications in general, while others focuses on specific aspect of ICT and telecommunications, such as infrastructure, investment and policy. Other more specific provisions apply to standards and conformity assessment procedures related to ICT equipment. The remaining and most comprehensive telecommunications provisions cover telecommunications services.

Some of the issues covered in some telecommunications provisions found in RTAs are already explicitly addressed in some WTO agreements, in particular the GATS Annex, Reference Paper and the Agreement on Technical Barriers to Trade (TBT). Some provisions on telecommunications services in RTAs refer to or replicate some of the provisions of the GATS Annex and Reference Paper. Other provisions provide clarity over GATS disciplines and expand the commitments' sectoral coverage. Similarly, some telecommunications provisions found in some RTAs address issues related to technical regulations, standards and conformity assessment procedures related to ICT equipment that draw on existing disciplines established under the TBT Agreement by providing clarification or expanding the scope of some obligations. Most recent regulatory issues explicitly addressed in a limited number of RTAs reflect technological and regulatory changes impacting the telecommunications sector in recent years, including international roaming, net neutrality, stolen or lost mobile terminal equipment and access in emergency situations.

Figure 2: The number of telecommunications provisions in RTAs has increased over time



Source: Monteiro (2021).
Note: For visual clarity, the graph only displays notified RTAs currently in force as of 1990 with at least one explicit telecommunications provision with the exception of NAFTA. "North" is defined as high-income countries, whereas "South" is defined as middle- and low-income countries according to the World Bank's country classification. Amended RTAs are reported separately. WTO (GA) = GATS Annex; WTO(RP) = Reference Paper.

The rest of the paper is organized as follows. Section 2 describes the mapping methodology used to map telecommunications provisions in RTAs. Section 3 provides an overview of the scope and coverage of telecommunications provisions in RTAs in light of the GATS Annex on telecommunications, the relevant developments in the WTO negotiations on basic telecommunications, the Reference Paper and the scope issues raised in the WTO discussion on e-commerce. Section 4 presents the main types of telecommunications provisions found in RTAs that refer, replicate or build on existing WTO rules, while Section 5 presents the main types of telecommunications provisions that cover new ground not explicitly covered in current WTO rules. Section 6 concludes.

2 MAPPING METHODOLOGY

Despite the significant role of telecommunications in the economy and the increasing number of RTAs with telecommunications provisions, the collection and systematization of information on telecommunications provisions in RTAs for the purpose of policy analysis remain limited. To address this gap, this paper is the first to provide a comprehensive typology of provisions related to telecommunications incorporated in RTAs. This paper complements the mapping of other issues related to telecommunications, in particular electronic commerce (Monteiro and Teh, 2017; WTO, 2018).

Unless specified otherwise, telecommunications provisions are defined as any provisions explicitly mentioning and referring to telecommunications. The following keywords have been used to identify telecommunications provisions: communication, computerized, cyber, digital, information and communication, ICT, internet, mobile, online and telecommunication.[4] The identification of the main types of telecommunications provisions follows a bottom-up approach, where each provision identified in a given RTA is compared in terms of language and scope to other provisions found in other RTAs.

Besides these explicit provisions, other provisions in RTAs may cover telecommunications services, even though they do not make explicit reference to telecommunications. Most RTAs negotiated in the last two decades includes rules for the liberalization of trade and investment in services, including telecommunications (Gootiiz et al., 2020). A review of general provisions on services trade found in RTAs is, however, outside the scope of this paper. Similarly, provisions related to electronic government management, including electronic government procurement, is outside the scope of analysis (WTO, 2018).

The analysis covers the 501 RTAs that have been notified to the WTO between 1957 and December 2020 under Article XXIV (Territorial Application – Frontier Traffic – Customs Unions and Free-trade Areas) of the General Agreement on Tariffs and Trade (GATT-1994), the Enabling Clause (Decision on Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries), Article V (Economic Integration) of the General Agreement on Trade in Services (GATS) or the Transparency Mechanism for Regional Trade Agreements.[5] The analysis covers the main text of the RTAs as well as side documents associated with the agreement at the time of signature, such as protocols, annexes and communication letters. The analysis does not, however, cover agreements, decisions, directives or resolutions that the parties to some RTAs have adopted after the entry into force of their respective agreements.[6]

3 SCOPE OF TELECOMMUNICATIONS PROVISIONS

Prior to reviewing the main types of telecommunications provisions found in RTAs, whether based on existing WTO rules or not, the scope and coverage of GATS instruments related to telecommunications services are discussed, including in the context of developments during the negotiations of the GATS Annex and Reference Paper on Regulatory Principles on Basic Telecommunications, and scope issues raised in WTO discussions on electronic commerce.

3.1 Scope of telecommunications provisions under WTO agreements

Although many provisions in WTO agreements can be relevant to telecommunications, even though they do not make explicit reference to telecommunications, two WTO instruments refer explicitly to telecommunications services: GATS Annex and Reference Paper. Both instruments have a different scope, which comprises different subjects to and beneficiaries of disciplines on telecommunications services. These distinctions, as further explained below and featured in Table 1, are essential to determining some of the ways in which some RTAs may have expanded their scope of application, with respect to either the universe of disciplined suppliers or beneficiaries.

[4] The French and Spanish translations of these keywords have also been used. Provisions on the electronic administration of the institutional bodies established under RTAs are excluded from the analysis (WTO, 2018).

[5] The WTO's RTA database (http://rtais.wto.org) contains detailed information on all the RTAs notified to the GATT/WTO.

[6] For instance, in 1999 the parties to the Codification of the Andean Subregional Integration Agreement (signed in 1987) adopted Decision 462 which establishes provisions regulating the integration and liberalization of the trade in telecommunications services in the Andean Community (see http://sice.oas.org/Trade/Junac/decisiones/Dec462e.asp). Similarly, the parties to the Central American Free Trade Area (CACM) signed in 2000 the Treaty on Investment and Trade in Services between Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua, which includes a chapter on telecommunications services (see. http://www.sice.oas.org/Trade/sica/PDF/Tratado_INVyCOM_servicios2002.pdf).

3.1.1 GATS Annex on Telecommunications

The Annex, an integral part of the GATS, spells out obligations applicable to all WTO members, whether or not they have opened their telecommunications markets or committed to do so in their schedules.[7] The Annex applies to measures that affect access to and use of PTTNS. It ensures reasonable and non-discriminatory access to and use of PTTNS needed by suppliers of any services committed in a schedule. This would include, for example, access and use of PTTNS, such as voice telephony, by accountants and accountancy firms, computer services companies, and value-added telecommunications suppliers or any other of a vast array of suppliers of services listed in a member's schedule of commitments. Also, when members do take commitments on basic telecommunications services, and as clarified by a WTO dispute settlement panel, access and use benefits would also accrue to suppliers of these services.[8]

Table 1: Two-layer scope of the GATS Annex and Reference Paper

<table>
<tr><th></th><th>WTO members coverage</th><th>Regulated services and suppliers</th><th>Beneficiaries</th></tr>
<tr><td rowspan="2">GATS Annex</td><td rowspan="2">All WTO members (whether or not they have entered commitments in basic telecommunications services)</td><td rowspan="2">PTTNS suppliers</td><td>All scheduled services suppliers (supplied in conformity with commitments) …</td></tr>
<tr><td>… including basic and value-added telecommunications services suppliers (if scheduled)</td></tr>
<tr><td rowspan="2">Reference Paper</td><td rowspan="2">Only WTO members having entered the Reference Paper into their telecommunications commitments schedule</td><td>Dominant suppliers of basic telecommunications services</td><td rowspan="2">Suppliers of basic telecommunications services</td></tr>
<tr><td>Dominant suppliers of basic telecommunications services having control over essential facilities</td></tr>
</table>

Source: Own construction.
Note: The abbreviation PTTNS reads as public telecommunications transport networks and services.

The GATS Annex defines PTTNS by defining its component terms.[9] These definitions will be significant to determining when and how RTAs may have altered the scope of their disciplines on the sector.

GATS Annex (Art. 3 Definitions)

For the purposes of this Annex:

(a) *"Telecommunications" means the transmission and reception of signals by any electromagnetic means.*

(b) *"Public telecommunications transport service" means any telecommunications transport service required, explicitly or in effect, by a Member to be offered to the public generally. Such services may include, inter alia, telegraph, telephone, telex, and data transmission typically involving the real-time transmission of customer-supplied information between two or more points without any end-to-end change in the form or content of the customer's information.*

(c) *"Public telecommunications transport network" means the public telecommunications infrastructure which permits telecommunications between and among defined network termination points.*

[7] Each WTO member has a schedule of specific commitments that list market access and national commitments for services it chooses, according to four modes of supply (cross border, consumption abroad, commercial presence, and movement of natural persons supplying services). Members may also inscribe certain types of limitations in their commitments.

[8] WTO (2004), Panel report, *Mexico – Measures Affecting Telecommunications Services*, WT/DS204/R, adopted 1 June 2004.

[9] A definition that also applies to the Reference Paper, where the term is used, but not defined.

A breakdown of the Annex definition 3(b), in particular, helps understand the type of telecommunications that PTTNS represent. "Public" is defined as "required explicitly or in effect to be offered to the public generally", hence what is sometimes referred to a public service obligation (rather than relating to nature of ownership).[10] It is a generic reference, not intended to import any particular government's definition or practice. The term would appear to exclude services that are not made generally available to the public, such as intra-corporate communications networks or services.

"Transport" refers to "real-time transmission of customer-supplied information without any end-to-end change in the form or content". Transport, therefore, refers to the pipeline, or carrier, function. It can also be considered synonymous with the term "basic". According to the GATS Services Classification List, (a) voice telephone services; (b) packet-switched data transmission services; (c) circuit-switched data transmission services; (d) telex services; (e) telegraph services; (f) facsimile services; and (g) private leased circuit services (capacity leasing) are considered basic telecommunications services.[11]

By contrast, by referring to "real-time transmission", and excluding any "change to the form or content" the definition of PTTNS rules out, and by implication defines what are commonly referred to as "enhanced" or "value-added" telecommunications services. According to the GATS Services Classification List, (h) electronic mail; (i) voice mail; (j) on-line information and database retrieval; (k) electronic data interchange (EDI); (l) enhanced/value-added facsimile services, including store and forward, store and retrieve; (m) code and protocol conversion; and (n) on-line information and/or data processing (including transaction processing) are considered as value-added services.

The rationale for the GATS Annex is to facilitate trade by services suppliers who need to access and use PTTNS to conduct business. With these objectives in mind, the Annex lays down a wide range of obligations to be ensured with respect to PTTNS suppliers. The Annex does not prescribe any particular regulatory approach. As such, since it does not require *ex-ante* measures, its obligations can be satisfied by light-handed, *ex-post* regulation, if and as needed, once competition takes hold and reduces the power of operators to dictate unreasonable and discriminatory terms on users.

3.1.2 Guidance offered by the WTO basic telecommunications negotiations

At the end of the Uruguay Round, members extended negotiations on basic telecommunications services. In an element relevant to the scope of telecommunications services, the Ministerial Decision launching the negotiations specified that the negotiations would cover "progressive liberalization of trade in telecommunications transport networks and services (hereinafter referred to as "basic telecommunications").[12] It is notable that ministers drew from the terminology of PTTNS (and presumably the Annex definitions). However, in designating telecommunications transport networks and services as "basic telecommunications" they recognized that basic telecommunications was broader than PTTNS, thereby covering all transport networks and services whether or not required to be offered to the general public. One of the most typical examples of non-public basic telecommunications is considered to be corporate network services, either- intra or inter-corporate.

As a result of wording of this decision, the ministers also shed light on the meaning of the term "basic". In maintaining the term "transport", the declaration implies that transport function was considered the distinguishing feature of "basic" telecommunications, i.e. the term "basic" may be considered synonymous with "transport" (referring, as noted above, to the real-time transmission of customer-supplied information between two or more points without any end-to-end change in the form or content). Also, retaining the formulation "networks and services" implied that both facilities and non-facilities-based ("resale-based") supply remained relevant to the notion of "basic

[10] Public service obligations are sometimes defined as requirements generally applying to many, if not all, firms operating in a particular sector, and which can typically relate to such requirements as minimum levels of quality, service standards, and sector specific consumer rights and, in contrast to universal services obligations, no compensation is usually paid to the providers for fulfilling these obligations over and above the price charged to the individual consumer (Centre on Regulation in Europe, 2018).

[11] WTO (1991), Services Sectoral Classification List, Note by the Secretariat, MTN.GNS/W/120, 10 July 1991; also annexed to Guidelines for the Scheduling of Specific Commitments Under the GATS, S/L/92, Adopted by the Council for Trade in Services on 23 March 2001.

[12] WTO, Decision on Negotiations on Basic Telecommunications, Ministerial Decision annexed to the Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, 15 April 1994.

telecommunications".[13] It is notable that the subsequently negotiated Reference Paper indicates in its initial chapeau that its scope is "basic telecommunications", which is the source of the concept, as further discussed below, that the beneficiaries of the Reference Paper obligations are broader than the PTTNS to whom many of the obligations must be applied.

Another feature of the negotiations on basic telecommunications was the elaboration of a scheduling technique to define the sector, informally known as the technology neutral approach whereby a commitment to a service encompasses any type of technology used, except where a commitment specifies otherwise. The definitional elements were contained in a WTO Group on Basic Telecommunications Chairman's Note that was later attached to the GATS Guidelines for scheduling commitments.[14] The Chairman's Note also clarifies the scope of basic telecommunications by extending them to both public and non-public services and to facilities and non-facilities-based services.

Finally, although a few members volunteered some commitments on value-added services as part of the negotiations (usually when little else was yet liberalized), the scope of the negotiations did not formally extend to value-added telecommunications.

3.1.3 Reference Paper on Regulatory Principles on Basic Telecommunications

Participants in the extended negotiations on basic telecommunications services launched at the end of the Uruguay Round drafted the Reference Paper on Regulatory Principles for the Basic Telecommunications Sector, to be inscribed as Additional Commitments in WTO members schedules of commitments.[15] These schedules, including also the telecommunications market access commitments, entered into force in 1998 by means of the Fourth Protocol of the GATS. The aim of the principles set out in the Reference Paper is to foster a regulatory framework favourable to competition so as to ensure the value of the GATS commitments undertaken to open up markets for basic telecommunications services.

The provision on the scope of the Reference Paper states that it sets out "definitions and principles on the regulatory framework for the basic telecommunications services". By implication, this means that all suppliers of basic telecommunications services are covered as beneficiaries of the obligations. The term "basic telecommunications services", as discussed above, is broader than PTTNS, covering telecommunications transport services that are required to serve the public generally, as well as those that are not (see Table 1). However, the scope of some of the most important obligations of the Reference Paper applies only to dominant suppliers of basic telecommunications services.

Reference Paper (Definitions)

A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of:

(a) *control over essential facilities*; *or*

(b) *use of its position in the market.*

The two components of the definition have different coverage. The only suppliers covered by subparagraph (a) are PTTNS, by virtue of the Reference Paper definition of the term "essential facilities".

[13] Facilities-based supply is when the supplier owns or operates the facilities over which its services are supplied. Non-facilities-based supply is when a supplier provides its service by using or leasing network capacity from a facilities-based supplier.

[14] WTO, Chairman's Note on Scheduling Basic Telecommunications Services Commitments, S/GBT/W/2/Rev.1, 16 January 1997, also annexed to Guidelines for the Scheduling of Specific Commitments Under the GATS, S/L/92, Adopted by the Council for Trade in Services on 23 March 2001. WTO (2001), Guidelines for the Scheduling of Specific Commitments Under the GATS, S/L/92, Adopted by the Council for Trade in Services on 23 March 2001.

[15] GATS Article XVIII provides for the inclusion of additional commitments in members' schedules on regulatory issues or any other measures not already covered by Market Access and National Treatment commitments.

Reference Paper (Definitions)

Essential facilities mean facilities of a public telecommunications transport network or service that:

(a) *are exclusively or predominantly provided by a single or limited number of suppliers*; *and*

(b) *cannot feasibly be economically or technically substituted in order to provide a service.*

The second component of the definition of a major supplier in subparagraph (b) applies to any supplier of basic telecommunications services (PTTNS or not) that can "use its position in the market" to materially affect price and supply.
Lastly, the Reference Paper lays down additional obligations on practices to be observed by regulatory authorities, including independence and impartiality, transparency of licensing criteria, and principles related to universal service and the allocation of telecommunications resources, such as rights of way, numbers and spectrum.

3.1.4 Scope issues raised in WTO discussions on electronic commerce

In the early days of the services discussions under the WTO Work Programme on Electronic Commerce, WTO members examined GATS provisions. One of the questions addressed was whether the GATS provisions covered internet access services. In April of 1999, the Chair of the Services Council provided a summary of WTO members' discussions under three main themes: (1) classification of internet access services; (2) scope of the GATS Annex; and (3) applicability of the Reference Paper.[16] The only views expressed collectively by the Services Council were adopted in July 1999 in an interim report to the WTO General Council.[17]

According to the interim report, the GATS Annex guarantees access to and use of PTNs for internet access providers. WTO members are, however, unclear as to whether the GATS Annex also guarantees service suppliers access to and use of internet networks and services. A key but unresolved question in the determination of the applicability of the GATS Annex is whether some internet-related services can be considered as PTTNS given that the internet includes public and private networks. Some WTO members are also of the view that there might be a need to further clarify the applicability of the competition provisions of the Reference Paper with respect to internet access providers given that in some countries the internet access provider is also a major supplier of basic telecommunications. WTO members have, however, never issued definitive conclusions on the scope of the GATS Annex and the applicability of the Reference Paper.

3.2 Scope of telecommunications provisions in RTAs

An increasing number of RTAs, namely 100 agreements, include provisions on telecommunications services in a dedicated chapter, section, article or annex. While RTAs with provisions on telecommunications provisions generally embrace the scope of the GATS Annex and Reference Paper, some agreements seem to have modified the scope of their provisions on telecommunications services, as highlighted in Table 2.

While most RTAs with detailed provisions on telecommunications services do not define the term "basic telecommunications services", many of these RTAs provide a definition of the term PTTNS or the terms, "telecommunications", "public telecommunications (transport) network" and "public telecommunications (transport) services" that are relatively similar to the one found in the GATS Annex.[18] However, an increasing number of RTAs replace the definition of PTTNS by omitting the term "transport" and providing the definition for "public telecommunications networks and services" (PTNS). Presumably, deleting the word "transport" would mean that all telecommunications, rather than only basic telecommunications, are covered by the scope of the provisions. Yet, the substance of the definition of PTNS remains the same as the GATS Annex definition of PTTNS. Therefore, the intention of drafters, and hence the legal implication of not using the terms transport or basic is unclear.

[16] WTO (1999), Council for Trade in Services, Report of The Meeting Held on 26 April 1999, S/C/M/35.

[17] WTO (1999), Trade in Services, Work Programme on Electronic Commerce, Progress Report to the General Council, S/L/74, Adopted by the Council for Trade in Services on 19 July 1999.

[18] Most chapters and annexes on telecommunications services explicitly exclude audio-visual services.

Table 2: Two-layer scope of telecommunications provisions in RTAs

	Regulated services and suppliers	Beneficiaries
GATS Annex scope	**PTTNS** suppliers	Suppliers of all scheduled services (supplied in conformity with commitments), including basic and value-added telecommunications services (if scheduled) Enterprises, as defined in the chapter on investment, with respect to access rights
	PTNS suppliers	
Reference Paper scope	**Dominant** suppliers of basic telecommunications services	Suppliers of basic telecommunications services
	Dominant suppliers of **PT(T)NS** having control over essential facilities	

Source: Own construction based on mapping of telecommunications provisions in RTAs.
Note: The analysis considers only notified RTAs currently in force.

As with the GATS annex, some provisions on telecommunications services in RTAs guarantee reasonable and non-discriminatory access to and use of PTTNS (or PTNS) needed by suppliers of any services committed in a schedule. In addition, some RTAs seem to extend specific elements of the scope of the GATS Annex and Reference Paper to enterprises as defined in their respective chapter on investment and to value-added telecommunications services and their suppliers. This suggests that not only services suppliers, but also, for example, manufacturing companies can benefit from the right of access to and use of PTTNS.

That being said, a limited but increasing number of RTAs explicitly enable suppliers of value-added services to claim the same benefits as PTTNS suppliers with respect to transparency, licensing criteria, dispute resolution mechanisms and competitive safeguards.[19]

4 TELECOMMUNICATIONS PROVISIONS BASED AND EXPANDING ON WTO RULES

Many provisions on telecommunications services and on standards and conformity assessment procedures related to ICT equipment found in RTAs draw on existing WTO agreements, such as the GATS Annex, the Reference Paper and the Agreement on Technical Barriers to Trade (TBT). Some of these provisions replicate existing WTO language, while others clarify or expand some disciplines.[20] Overall, telecommunications provisions included in RTAs and based on existing WTO rules cover broadly (1) access to and use of PT(T)NS; (2) competitive safeguards; (3) interconnection rules; and other regulatory practices, including (4) regulators' independence; (5) dispute resolution mechanism; (6) allocation and use of scarce resources; (7) universal service; (8) transparency of licensing procedures; (9) transparency of conditions on access to and use of PTTNS; (10) standards, technical regulations and conformity assessment procedures related to ICT equipment; (11) cooperation; (12) institutional arrangement; (13) consultations.[21]

4.1 Access to and use of PT(T)NS

Access to and use of PTTNS are essential to the effective provision of many services. A service supplier may need to access and use of PTTNS by leasing private circuits, for intra-corporate communication or the supply of its services.

[19] The main types of provisions on value-added services and suppliers are reviewed in subsection 5.1.3.

[20] RTAs' provisions that expand on existing WTO rules are often defined as WTO+, while RTAs' provisions that address issues not explicitly covered in WTO rules are often defined as WTO-X.

[21] As discussed above, both the GATS Annex and the Reference Paper include a couple of provisions laying down the definition of specific terms, such as telecommunications or essential facilities. The list of all explicit definitions related to telecommunications services found in RTAs is reported in Figure A1 in the Annex.

The GATS Annex establishes rights and obligations related to access to and use of PTTNS, including (1) terms and conditions; (2) users' rights; and (3) regulators' rights. A large number of RTAs with provisions on telecommunications services, namely 81 agreements, include specific provisions related to access to and use of PTTNS or in some cases PTNS.[22] While many of these RTAs replicate the GATS Annex's provisions on access to and use of PTTNS, an increasing number of RTAs include provisions that potentially go beyond these GATS Annex provisions by adding clarifications or covering new issues.

4.1.1 Terms and conditions

Access to and use of PTTNS on reasonable and non-discriminatory terms and conditions for the provision of services covered under GATS is guaranteed by the GATS Annex.

GATS Annex (Art. 5 Access to and use of PTTNS)

(a) *Each Member shall ensure that any service supplier of any other Member is accorded access to and use of* [*PTTNS*] *on reasonable and non-discriminatory terms and conditions, for the supply of a service included in its Schedule*. […]

(b) *Each Member shall ensure that service suppliers of any other Member have access to and use of any* [*PTTNS*] *offered within or across the border of that Member, including private leased circuits* […].

Most RTAs with provisions on access to and use of PT(T)NS reiterate the guarantees of a reasonable and non-discriminatory access to and use of PT(T)NS for scheduled services suppliers. However, an increasing number of these RTAs include provisions that clarify some of the provisions of the GATS Annex or that cover new issues not explicitly addressed in the GATS Annex, as highlighted in Figure 3.

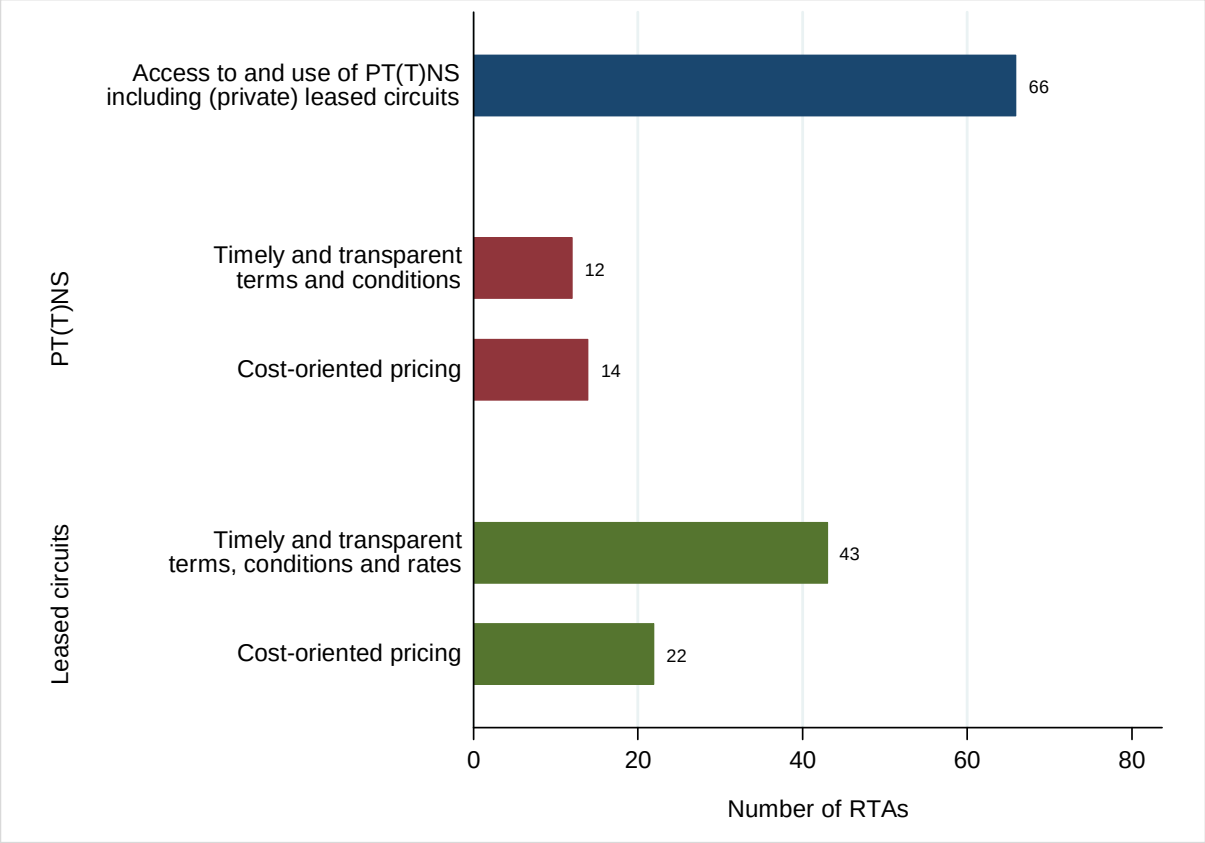
Some provisions specify that access to and use of PT(T)NS include leased circuits (found in 22 RTAs) or more specifically private leased circuits (found in 44 RTAs). Twelve agreements, including the RTA between Japan and Mongolia, further stipulate that access to and use of PT(T)NS shall be provided in a timely fashion and on transparent, reasonable and non-discriminatory terms and conditions. The RTAs between Singapore and the United States and between the European Union and Japan also clarify that non-discriminatory terms and conditions refer also to timeliness. Likewise, 43 agreements, such as the RTA between Australia and Chile, clarify that access to and use of leased circuits services shall be supplied on a timely basis and reasonable and non-discriminatory terms, conditions and rates.

A limited number of agreements, including the RTA between Chile and the Republic of Korea, specify that the pricing of PT(T)S shall reflect economic costs directly related to providing the services. Similarly, 21 RTAs, such as the RTA between India and Malaysia, stipulate that leased circuit services, that are PT(T)S, shall be offered at capacity-based, cost-oriented prices. A few RTAs, including the RTA between Panama and the United States, require leased circuit services to be offered at flat-rate cost-oriented prices. These provisions on cost-oriented rates have a stronger price control over access to basic telecommunications services than the GATS Annex, which requires terms and conditions to be only reasonable. Indeed, the Panel's report in the "Mexico-Measures Affecting Telecommunications Services" dispute indicates that "terms and conditions would also include rates charged, but a gentler standard than cost-oriented charges".[23]

[22] Out of these 81 RTAs, three recent agreements to which the EU is a party with Armenia, Japan and Viet Nam refer specifically to access to and use of major suppliers' PTNS.

[23] WTO (2004), Panel report, *Mexico – Measures Affecting Telecommunications Services*, WT/DS204/R, adopted 1 June 2004.

Figure 3: Provisions clarifying and strengthening the terms and conditions of access and use of PT(T)NS are incorporated in a significant number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

4.1.2 Users' rights

A large number of RTAs include specific provisions on PT(T)NS users' rights that replicate or clarify some of the disciplines established under the GATS Annex. In parallel, over the years, many RTAs with provisions on telecommunications services have also expanded the scope of access to and use of PT(T)NS by covering activities and infrastructure that are not explicitly covered by the GATS Annex. These new types of provisions on telecommunications services address, among others, resale-based services, submarine cable systems, and satellites services.

4.1.2.1 Terminal attachment, circuit interconnection and operating protocols use

The GATS Annex guarantees that the right of scheduled services suppliers to access and use PTTNS includes the possibility to purchase, lease and attach terminal; interconnect private leased or owned circuits; and use operating protocols of the services suppliers' choice.

GATS Annex (Art. 5 Access to and use of PTTNS)

(b) *Each Member shall ensure that* […] *service suppliers of any other Member are permitted*:

(i) *to purchase or lease and attach terminal or other equipment which interfaces with the network and which is necessary to supply a supplier's services*;

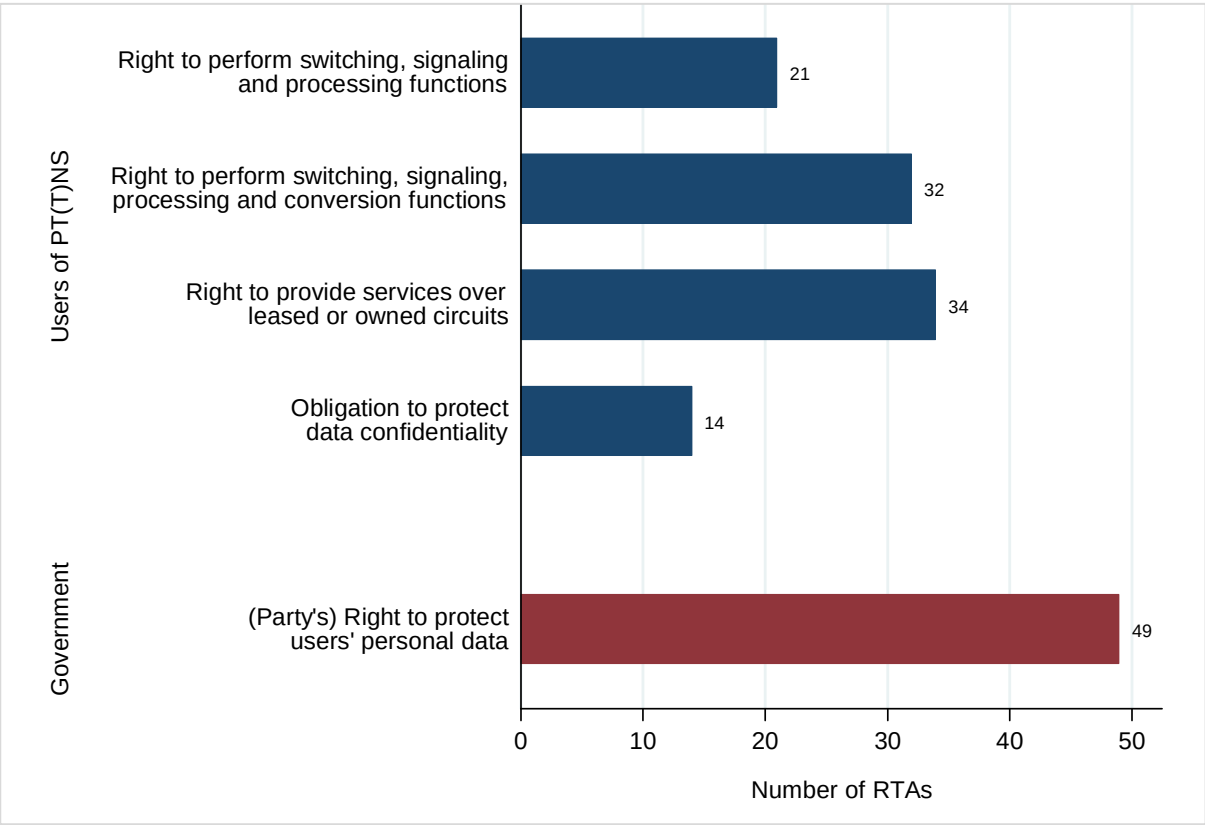
(ii) *to interconnect private leased or owned circuits with* [*PTTNS*] *or with circuits leased or owned by another service supplier*;

(iii) *to use operating protocols of the service supplier's choice in the supply of any service, other than as necessary to ensure the availability of telecommunications transport networks and services to the public generally*.

These three specific guarantees are incorporated with very few wording changes in most RTAs with provisions on access to and use of PT(T)NS. However, many of these RTAs spell out additional guarantees, as shown in Figure 4.

53 RTAs, such as the RTA between Japan and Peru, guarantee that scheduled services suppliers are permitted to perform switching, signalling and processing functions. 31 RTAs out of these 53 agreements, including the RTA between Australia and Singapore, add the right to perform conversion function. 33 RTAs, such as the RTA between Chile and the United States, also guarantee the right of scheduled services suppliers to supply services to individual or multiple end-users over leased or owned circuits. A couple of these 31 RTAs, including the RTA between India and the Republic of Korea, further specify that such right is permitted to the extent that the scope and type of the services are not inconsistent with each party's domestic laws and regulations.

Figure 4: Provisions clarifying and expanding users' rights related to access and use of PT(T)NS are included in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

4.1.2.2 Data transmission and protection

The GATS Annex also addresses the rights of scheduled suppliers to access and use PTTNS for data transmission. This transmission can occur within or across borders. Notwithstanding this right, the GATS Annex confers WTO members the right to introduce measures aimed at achieving the security and confidentiality of messages.

GATS Annex (Art. 5 Access to and use of PTTNS)

(c) *Each Member shall ensure that service suppliers of any other Member may use* [*PTTNS*] *for the movement of information within and across borders, including for intra-corporate communications of such service suppliers, and for access to information contained in databases or otherwise stored in machine readable form in the territory of any Member.* […]

(d) *Notwithstanding the preceding paragraph, a Member may take such measures as are necessary to ensure the security and confidentiality of messages, subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade in services.*

Most RTAs with provisions on access to and use of PT(T)NS incorporate both type of provisions with relatively limited wording changes. While some provisions refer to the right to access information located in the territory of any of the parties to the RTA, other provisions extend to information also located in the territory of any non-party to the RTA that is a WTO member.

In parallel, an increasing number of RTAs with provisions on access to and use of PT(T)NS include additional provisions on information confidentiality. 49 RTAs, including the agreement between Mexico and Uruguay, complement the parties' right to adopt measures necessary to ensure security and confidentiality of messages with the right to adopt measures necessary to protect users' personal data or privacy. Several RTAs to which the European Union is a party, including with Viet Nam, go further and require the parties to ensure the confidentiality of telecommunications and related traffic data without restricting trade in services. Although worded differently, a similar type of provisions is found in a couple of RTAs, including the agreement between Japan and Switzerland, requiring services suppliers to take appropriate measures to protect personal data, including individual records and accounts.

4.1.2.3 Resale

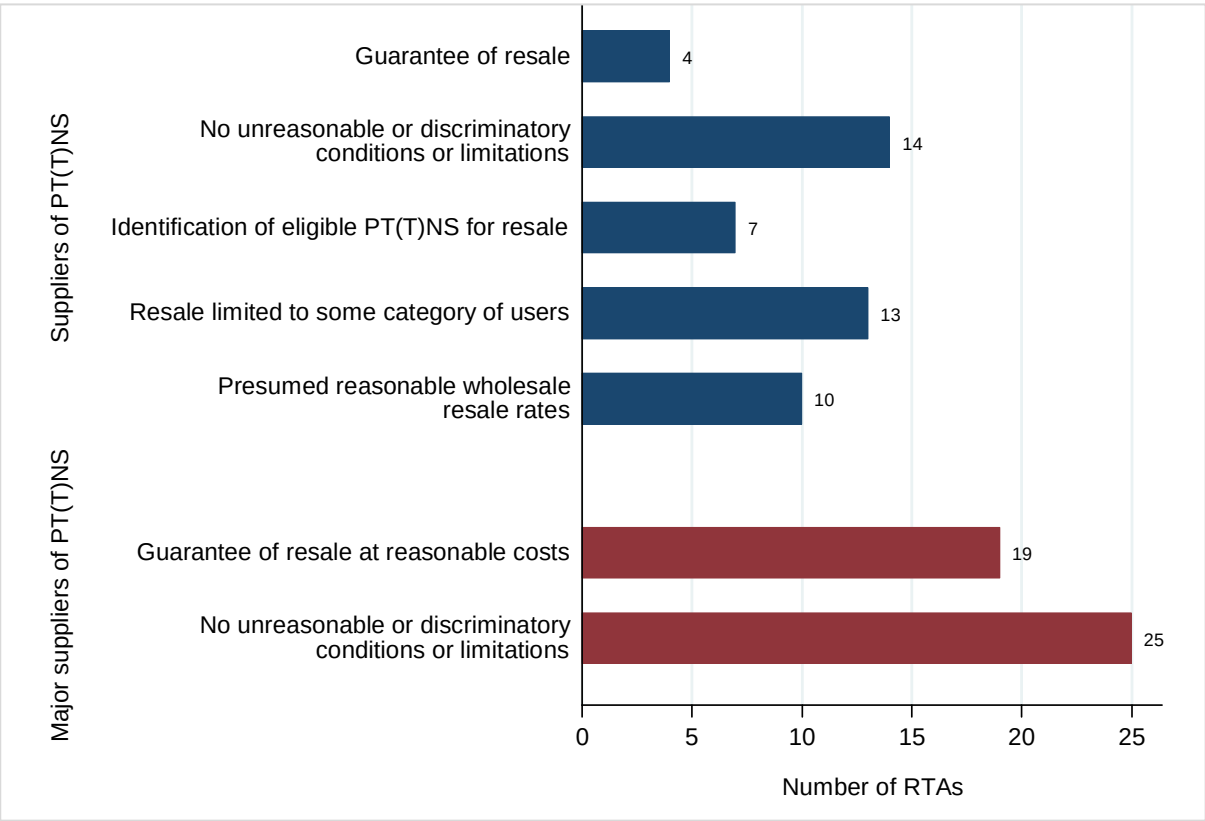
Re-sale refers to telecommunications services provided by suppliers that do not own or operate telecommunications facilities (i.e. non-facilities-based suppliers) and therefore lease them to provide the services. Both the GATS Annex and Reference Paper beneficiaries already include non-facilities-based suppliers of telecommunications (of basic telecommunications, in the case of the Reference Paper). However, an increasing number of RTAs clarify the legal rights of PT(T)NS suppliers to supply their services through re-sale. As highlighted in Figure 5, different types of provisions on resale have been incorporated in these RTAs. In some cases, these provisions refer to PTS suppliers in general, while in other cases, the provisions address specifically major suppliers of PTS.

Only a couple of recent RTAs guarantee the general access to and use of PT(T)NS for resale services. For instance, the CPTPP stipulates that no party shall prohibit the resale of PTS.[24] A relatively more common provision, found in 19 agreements, including the RTA between Chile and the United States, requires the parties to ensure that dominant suppliers of PTTNS offer for resale, at reasonable costs, to other PTTNS suppliers, PTS that they provide at retail to end-users.

These types of provisions are often complemented with another provision requiring the parties to ensure that PT(T)NS suppliers, found in 17 RTAs, or major suppliers of PT(T)NS, found in 21 RTAs, do not impose unreasonable or discriminatory conditions or limitations on re-sale of such services. A similar type of provisions but worded slightly differently by replacing the term unreasonable is found in a couple of RTAs. For instance, the RTA between India and Malaysia refers to unfair or discriminatory conditions or limitations, while the RTA between Canada and Colombia refers to unjustly discrimination or undue preference.

[24] A related provision found in the CPTPP and the RTA between Australia and Peru further stipulates that if a party does not require that a major supplier offer a specific PTS for resale, it nonetheless shall allow service suppliers to request that the service be offered for resale, without prejudice to the party's decision on the request.

Figure 5: Provisions on resale are incorporated in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

A couple of agreements confirm explicitly that the parties retain the right to limit resale. For instance, the RTA between the Republic of Korea and Singapore stipulates that the parties may determine, in accordance with their domestic laws and regulations, the type and scope of resale in their respective territory. In parallel, a limited but increasing number of RTAs include provisions that specify the type of resale limitations.

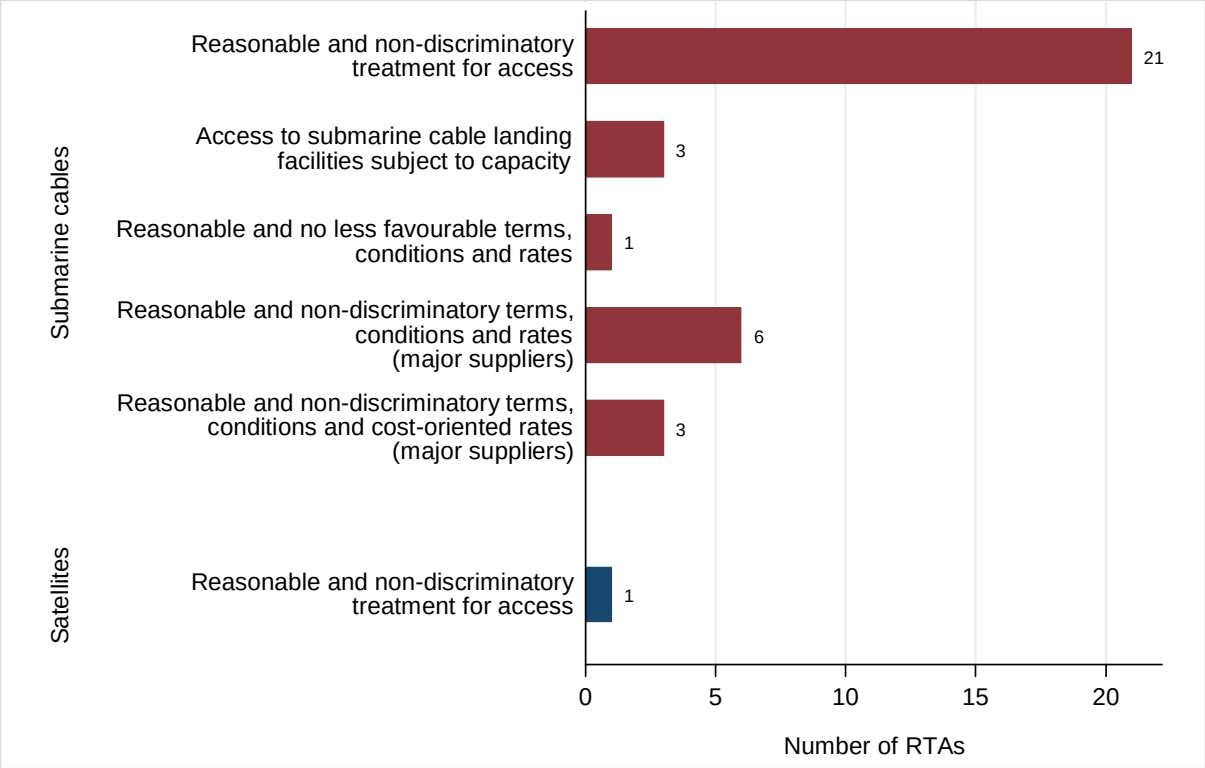
Seven agreements, including the RTA between Canada and Peru, stipulate that the parties may identify the PT(T)NS available for provision on a mandatory resale basis. Some RTAs, such as the RTA between Australia and the United States, further specify that the identification of eligible PT(T)NS for resale must be based on the need to promote competition or other factors considered relevant. In a couple of recent agreements, including the RTA between Australia and Peru, the eligibility criteria must be based on the need to promote competition or to benefit the long-term interests of end-users. Several RTAs, such as the Additional Protocol to the Framework Agreement of the Pacific Alliance, foresee the possibility or the obligation to prohibit a reseller that obtains, at wholesale rates, a PTS available at retail to only a limited category of users from offering the service to a different category of users.

As mentioned above, many RTAs specify that resale rates must be provided at reasonable costs. Several of these RTAs, including the RTA between Australia and the Republic of Korea, clarify that reasonable rates may be determined through any methodology considered appropriate by the parties. The RTA between Chinese Taipei and Nicaragua further specifies that the reasonability criteria shall be established according to the conditions of each party's market. In that context, several RTAs, including the RTA between Singapore and the United States, confirm that wholesale resale rates that are set pursuant to national law and regulations are presumed reasonable.

4.1.2.4 Submarine cables system and satellite services

Submarine cables and satellites offer primary transmission capacity. Submarine cables are "landed" by connecting into local networks via an affiliate or, often, a contractual arrangement with a domestic supplier of telecommunications to supply capacity from abroad or into the local market. Similarly, communications satellites are used mainly in long-distance telephone communications and for distribution of TV signals. A limited but increasing number of RTAs include provisions related to the right to access submarine cables and satellite services, as shown in Figure 6. Some of the various types of provisions on submarine cables system and satellites services have been incorporated in one or a couple of RTAs.

Figure 6: Provisions on submarine cables and satellite services are included in a limited number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

The most common provision on the right of access to submarine cables, found in 21 RTAs, such as the RTA between Australia and Chile, requires the parties to ensure that enterprises that operate submarine cable systems accord reasonable and non-discriminatory access to the submarine cable system, including landing facilities.[25] With the exception of the RTA between China and the Republic of Korea, the obligation of reasonable and non-discriminatory treatment for access to submarine cables is only applicable to operators that have been authorized to operate submarine cable systems as a PTS. A similar provision, found in the RTA between Morocco and the United States, but applicable to satellites, requires each party to ensure that authorized enterprises accord reasonable and non-discriminatory treatment with respect to access to satellite services by PTS suppliers of the other party.

A couple of agreements, including the RTA between Australia and the Republic of Korea, clarify that access to submarine cable landing facilities is subject to capacity and can be done through facilities leased from a licenced PTNS supplier. The RTA between Singapore and the United States further specifies that the access to submarine cables shall be provided on reasonable terms, conditions, and rates that are no less favourable than offered to any other PTS supplier in like circumstances.

[25] The RTA between Chile and the United States only refers to non-discriminatory treatment.

In other RTAs, such as the RTA between Australia and Hong Kong, China, the provision on access to submarine cables targets major suppliers requiring them to allow PTS suppliers of the other party to access the submarine cable landing station for the purpose of interconnection with the submarine cables owned by any telecommunications supplier subject to technical feasibility and pre-existing contractual commitments.

A related provision, found in 6 RTAs, specifies that, where submarine cable landing stations and services cannot be economically or technically substituted, a major supplier operating such cable landing stations and services shall provide submarine cable capacity, and, in a few RTAs, international leased circuits, backhaul links and cross connect links, at reasonable and non-discriminatory terms, conditions and rates. The RTA between the Republic of Korea and the United States further requires transparent terms, conditions and rates for access. Similarly, the RTA between Singapore and Turkey requires timely terms, conditions and rates for access to international submarine cable landing stations. Likewise, a couple of agreements, including the RTA between India and Malaysia, oblige governments to ensure that major suppliers offering submarine cable capacity facilitate the co-location of transmission and routing equipment of the suppliers or PTS at reasonable and non-discriminatory cost-oriented landing rates.

4.1.3 Regulators' rights

The GATS Annex establishes the right of regulators to condition the access to and use of PTTNS under certain conditions. In particular, the Annex sets out the regulatory objectives for which conditions on access to and use of PTTNS may be imposed, namely the safeguard of the public service responsibilities of PTTNS suppliers; the protection of the technical integrity of PTTNS; and the guarantee of supplying services in conformity with services schedule commitments.

GATS Annex (Art. 5 Access to and use of PTTNS)

(e) *Each Member shall ensure that no condition is imposed on access to and use of* [*PTTNS*] *other than as necessary*:

(i) *to safeguard the public service responsibilities of suppliers of* [*PTTNS*]*, in particular their ability to make their networks or services available to the public generally*;

(ii) *to protect the technical integrity of* [*PTTNS*]; *or*

(iii) *to ensure that service suppliers of any other Member do not supply services unless permitted pursuant to commitments in the Member's Schedule.*

In that context, the Annex provides an illustrative list of terms and conditions that could be relevant to satisfying the regulatory objectives for which conditions on access to and use of PTTNS may be imposed, including restrictions on resale or circuit interconnection; requirements to use specified technical interfaces or to ensure interoperability; type approval of terminal; and notification, registration and licensing.

GATS Annex (Art. 5 Access to and use of PTTNS)

(f) *Provided that they satisfy the criteria set out in paragraph* (e)*, conditions for access to and use of* [*PTTNS*] *may include*:

(i) *restrictions on resale or shared use of such services*;

(ii) *a requirement to use specified technical interfaces, including interface protocols, for inter-connection with such networks and services*;

(iii) *requirements, where necessary, for the inter-operability of such services and to encourage the achievement of the goals set out in paragraph* 7(a);

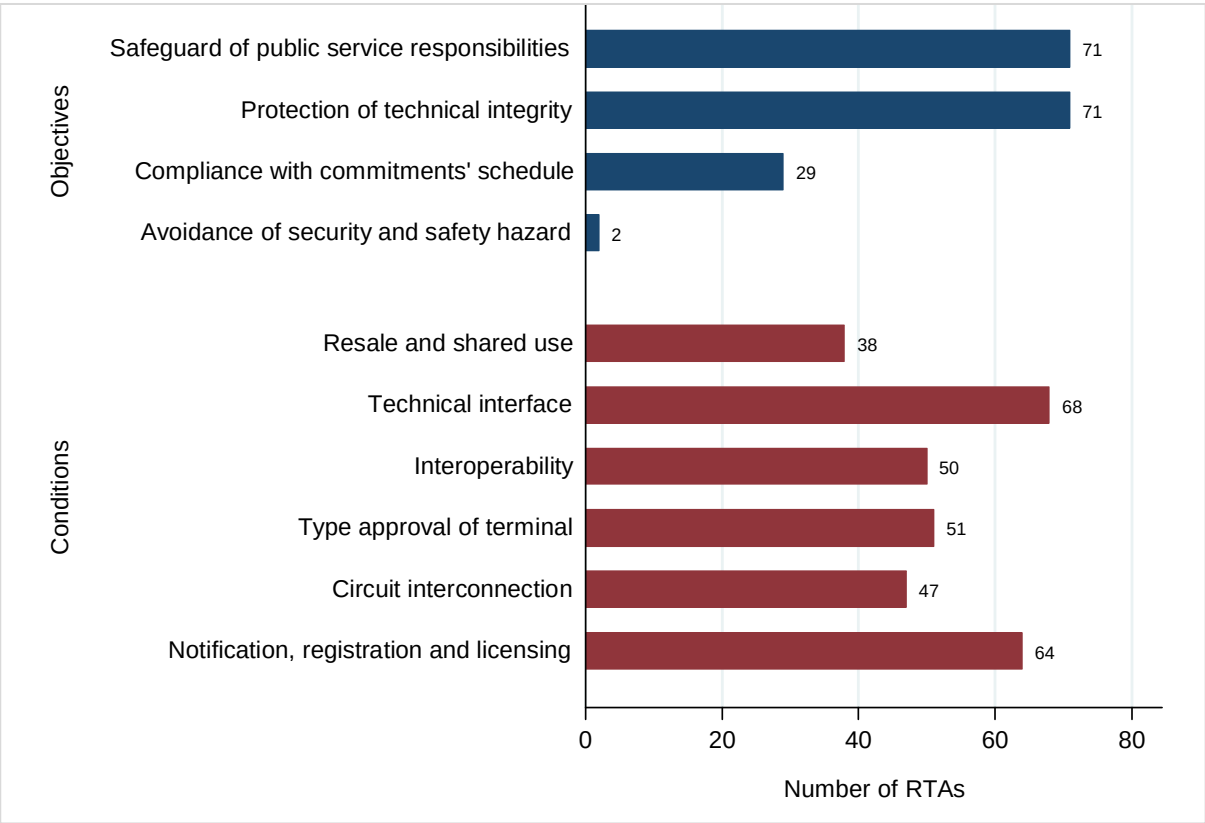
(iv) *type approval of terminal or other equipment which interfaces with the network and technical requirements* […];

(v) restrictions on inter-connection of private leased or owned circuits […]; or

(vi) *notification, registration and licensing*.

Most RTAs with provisions related to access to and use of PT(T)NS include provisions that replicate, clarify or elaborate upon the right of regulators to condition access to and use of PT(T)NS established under the GATS Annex. As highlighted in Figure 7, most of these RTAs replicate some of the regulatory objectives set in the GATS Annex for which conditions on access to and use of PT(T)NS may be imposed, in particular those related to the safeguard of the public service responsibilities of PT(T)NS suppliers and to the protection of the technical integrity of PT(T)NS. Less than half of these RTAs mention ensuring that service suppliers of the other party do not supply services unless permitted pursuant to commitments in the party's schedule as a regulatory objective to condition access to and use of PT(T)NS. A couple of agreements, including the RTA between India and Japan, expand the list of regulatory objectives by specifying that conditioning access to and use of PTTNS may be necessary to ensure that such access to and use of PTTNS does not constitute a security and safety hazard and is not in contravention of any publicly available statute, rule or regulation applied without discrimination.

Figure 7: Many RTAs replicate the provisions on regulatory objectives and illustrative conditions



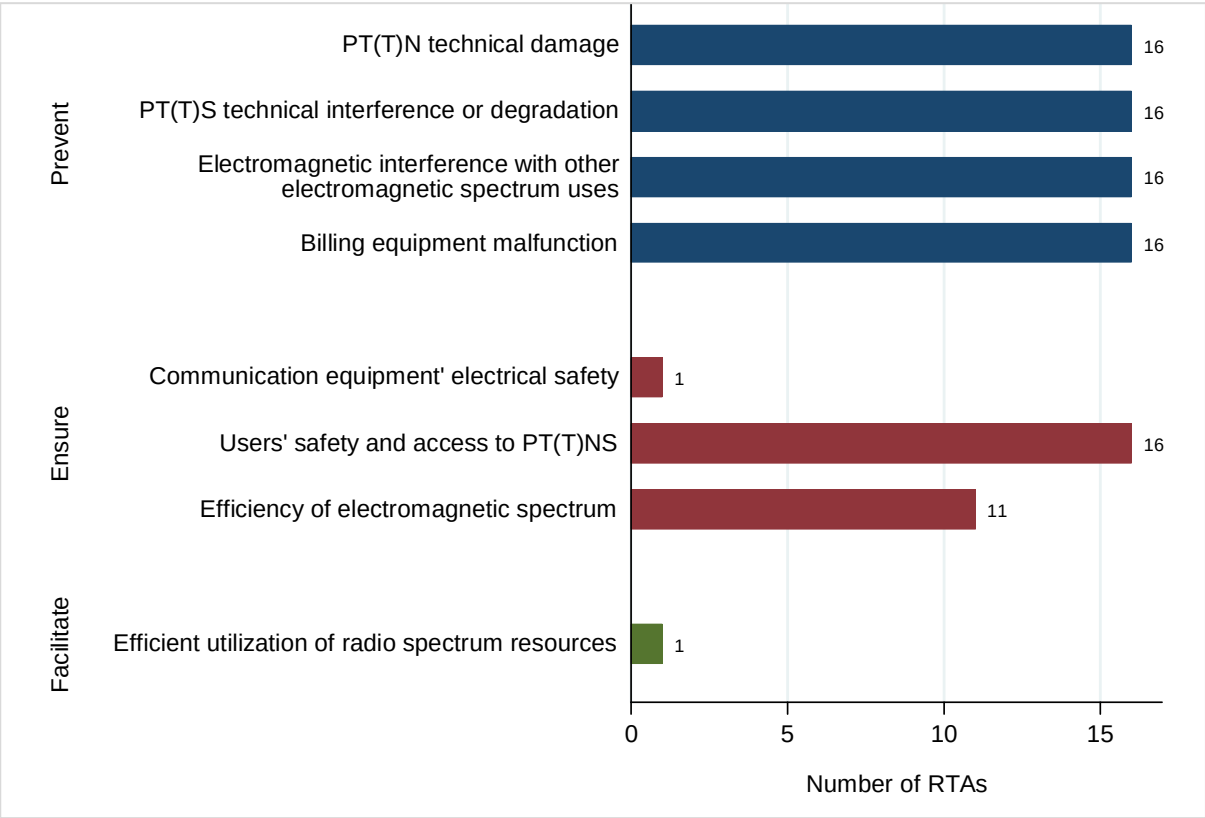
Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Similarly, many RTAs with provisions on access to and use of PT(T)NS replicate, or in some cases modify slightly, some of the conditions listed in the GATS Annex that could justify conditioning access to and use of PT(T)NS. The two most common conditions found in RTAs are related to the use of specified technical interfaces for interconnection with PT(T)NS and to notification, registration and licensing, respectively. The least common illustrative conditions included in half of the RTAs refers to restrictions on resale or shared use of PT(T)S.

A limited number of RTAs incorporate provisions on standards-related measures that elaborate on the conditions on the attachment of terminal or other equipment to PT(T)N, particularly in relation to the safeguarding of public service responsibilities and the protection of the network's technical integrity.[26] A common provision found in these agreements requires the parties to ensure that the network termination points for their PT(T)N are established on a reasonable and transparent basis. Most of these 16 agreements, including the RTA between Canada and Chile, further clarify that an approval for attachment of terminal cannot be required when the equipment is connected on the customer's side of authorized equipment that serves as protective device. However, the parties may require approval for the attachment to the PT(T)N of terminal or other equipment that is not authorized, provided that the criteria for approval are consistent with the listed regulatory objectives authorizing the adoption of standards-related measures relating to the attachment of terminal or other equipment to PT(T)N.

As highlighted in Figure 8, conditions on the attachment of terminal or other equipment to PT(T)N can be introduced to meet different objectives. These regulatory objectives range from preventing technical damage to PT(T)N, technical interference with or degradation of PT(T)S, electromagnetic interference with other electromagnetic spectrum uses, and billing equipment malfunction to ensuring compatibility with other electromagnetic spectrum uses and users' safety and access to PT(T)NS. Additional regulatory objectives to justify the adoption or maintenance of standards-related measures relating to the attachment of terminal or other equipment to PT(T)N are found in a few RTAs. For instance, the RTA between Chinese Taipei and Panama includes ensuring the efficient use of electromagnetic spectrum as a regulatory objective. Similarly, the RTA between Chile and the Republic of Korea lists ensuring electrical safety of communication equipment and facilitating the efficient utilization of radio spectrum resources as a possible objective to condition the attachment of terminal or other equipment to PT(T)N.

Figure 8: A limited number of RTAs detail the conditions on the attachment of terminal equipment covered by standard-related measures



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

[26] See section 4.10.

4.2 Competitive safeguards

Over the years, the telecommunications sector in many economies has evolved significantly, from public monopolies to effective competition. In this context, competitive safeguards are often considered as part of the conditions necessary to ensure the implementation of market opening commitments, and ultimately the development of a fair and competitive telecommunications industry.

The Reference Paper on Regulatory Principles on Basic Telecommunications provides a competitive framework for basic telecommunications services by means of competitive safeguards and interconnection rules, which complement the GATS competition rules applicable to any service sector. The GATS Article VIII requires WTO members to ensure that any monopoly or exclusive service suppliers does not act in a manner inconsistent with most favoured nation obligations. Where a monopoly or exclusive suppliers competes in a sector where it does not have monopoly rights, members must ensure that these entities do not leverage their position so as to negate market access commitments. The GATS Article IX competition rules further require governments to engage in consultations, upon request, with a view to eliminating business practices of any service suppliers that may restrain competition in trade in services.

The scope of the provisions of the Reference Paper is more limited than the GATS competition rules and apply only to dominant suppliers of basic telecommunications services. As explained in section 4.1.1., the definition of major suppliers of the Reference Paper sets two alternative criteria that determine when an entity is a major supplier, namely the control over essential facilities or the use of market position.

4.2.1 Prevention of anti-competitive practices

The Reference Paper requires adopting and maintaining appropriate measures aimed at preventing anti-competitive practices in the provision of basic telecommunications services. The Reference Paper further lists three types of anti-competitive practices that the measures have to address: anti-competitive cross-subsidization; use of information from competitors for anti-competitive advantage; and holding from other services suppliers necessary technical information about essential facilities and commercially relevant information.

Reference Paper (Art. 1 Competitive safeguards)

1.1 *Prevention of anti-competitive practices in telecommunications*

Appropriate measures shall be maintained for the purpose of preventing suppliers who, alone or together, are a major supplier from engaging in or continuing anti-competitive practices.

1.2 *Safeguards*

The anti-competitive practices referred to above shall include in particular:

(a) *engaging in anti-competitive cross-subsidization*;

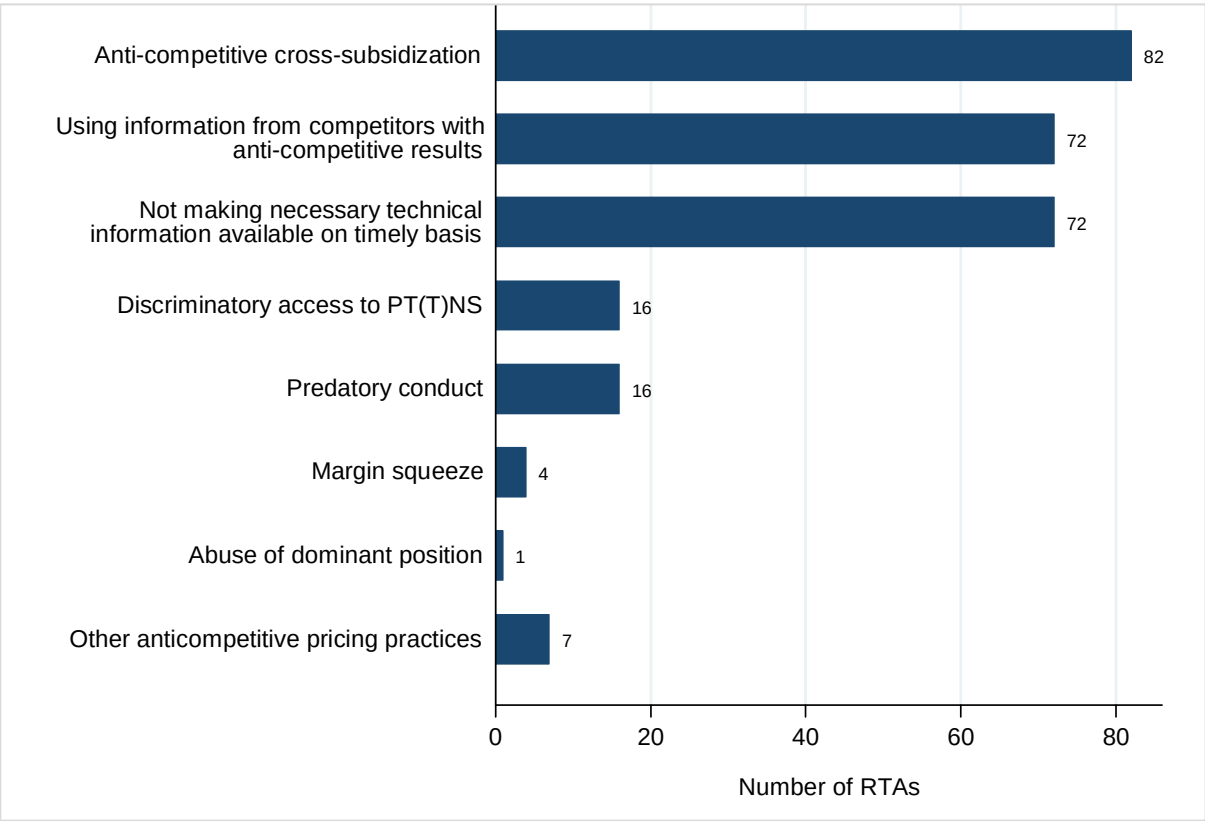
(b) *using information obtained from competitors with anti-competitive results*;

(c) *not making available to other services suppliers on a timely basis technical information about essential facilities and commercially relevant information which are necessary for them to provide services*.

A majority of RTAs with provisions on telecommunications services, namely 90 agreements, incorporate specific provisions related to competitive safeguards. Most of these RTAs replicate the obligation of the Reference Paper to maintain appropriate measures to prevent major suppliers of PT(T)NS from acting in an anti-competitive manner.[27] Similarly, most of these RTAs list the same anti-competitive practices included in the Reference Paper, such as anti-competitive cross-subsidization. A limited number of these RTAs mention additional anti-competitive practices by major suppliers of PT(T)NS, including discriminatory access to PT(T)NS, predatory conduct, margin squeeze and abuse of dominant position, as featured in Figure 9.

[27] Most RTAs with such provisions do not refer to basic telecommunications services but to PT(T)NS.

Figure 9: A limited number of RTAs expand the list of major suppliers' anti-competitive practices

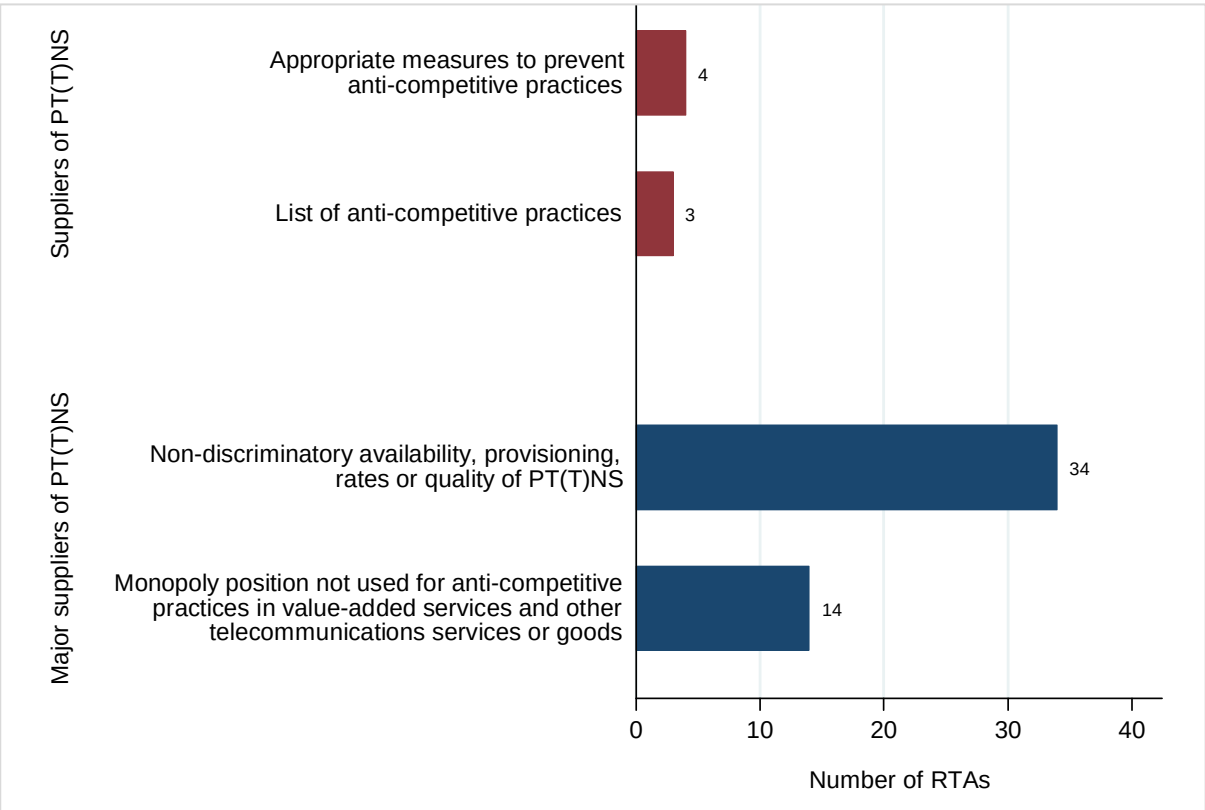


Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

In parallel, several RTAs include a few other types of provisions that elaborate upon the provisions on anti-competitive practices of the Reference Paper, as highlighted in Figure 10. Some of these provisions expand their scope by covering all PT(T)NS suppliers and not only major suppliers. A few agreements, such as the RTA between Australia and Malaysia, further require the parties to maintain and effectively enforce appropriate measures to prevent PTNS suppliers from engaging in anti-competitive practices. The RTA between Australia and Singapore, which includes a similar provision, also requires the parties to define anti-competitive practices, including misuse of market power and anti-competitive horizontal and vertical arrangements, in their respective competition regime.

The other types of provisions on competitive safeguards draw on the GATS competition rules. 34 RTAs, including the RTA between Peru and the United States, require major suppliers to accord PT(T)NS suppliers of the other party treatment no less favourable than such major suppliers accord to their subsidiaries, affiliates, or non-affiliated service suppliers regarding the availability, provisioning, rates, or quality of like PT(T)NS. Another provision, relatively less common, found in 14 agreements, including the RTA between Canada and Chile, further clarifies that major suppliers of PT(T)NS cannot use their position to engage in anti-competitive practices in the provision of enhanced or value-added services or other telecommunications-related services or goods.

Figure 10: New types of provisions on anti-competitive practices are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services.

4.2.2 Approaches to regulation

The Reference Paper is silent as to the regulatory approach to be adopted to ensure the competitive safeguards are in place, in particular whether to employ *ex-ante* or *ex-post* regulatory approaches. An *ex-ante* regulatory approach seeks to identify problems beforehand and influence stakeholder behaviour and responses through regulatory action. Conversely, an *ex-post* regulatory approach addresses competition problems after they arise through targeted regulatory action. In practice, many governments employ a combination of *ex-ante* and *ex-post* approaches. It has often become common for regulation to be less intrusive as competition takes hold in the sector.

Complementing the Reference Paper provisions on competitive safeguards and the GATS provisions on competition rules, a limited but increasing number of RTAs have elaborated upon the means to implement competitive safeguards in the telecommunications services industry. A couple of agreements, including the CPTPP, recognize that that regulatory needs and approaches differ market by market, and that each party may determine how to implement the obligations set out in the chapter or section on telecommunications services. Several RTAs explicitly recognize the different implementation means at the disposal of the parties. Overall, two different modalities of implementation have been explicitly addressed in RTAs, as highlighted in Figure 11.

The first modality of implementation, found in 26 RTAs, refers to a direct regulatory approach.[28] For instance, the RTA between the European Union and Japan recognizes that the parties may engage in direct regulation either in anticipation of an issue that they expect may arise or to resolve an issue that has already arisen in the market. Similarly, the RTA between Japan and Singapore stipulates

[28] This figure does not include RTAs with provisions on forbearance as well as provisions on harmonization of telecommunications and ICT policies.

that the parties may, in accordance with their respective laws and regulations, determine the appropriate level of regulation required to promote fair competition in telecommunications services. In that context, a couple of agreements, including the RTA between the European Union and Viet Nam, specify that the designation of a PTNS supplier as a major supplier shall be done in accordance with each party's domestic laws, regulations and procedures. A related but more detailed provision is included in a couple of other RTAs to which the European Union is a party, including with the Republic of Moldova, requiring the parties to determine on the basis of a market analysis whether the relevant market is effectively competitive in order to decide to impose, maintain, amend or withdraw a specific regulation. If a relevant market is determined by the regulatory authority to not be effectively competitive, a complementary provision further requires the party to identify and designate services suppliers with significant market power on that market and to impose, maintain or amend, as appropriate, specific regulatory obligations.

While most provisions on direct regulation found in RTAs are of a general nature, a limited number of RTAs refer to the adoption of specific types of obligations and measures.[29] Several RTAs to which the European Union is a party, including with Georgia, list the types of obligations that might be imposed on major suppliers if the relevant market is determined to be not effectively competitive. For instance, where there is a requirement for non-discrimination or for prevention of unfair cross-subsidy, an obligation may be imposed on a vertically integrated company to make transparent its wholesale prices and its internal transfer prices. An obligation to meet reasonable requests for access to and use of specific network elements and associated facilities might also be imposed in situations where denial of access or unreasonable terms and conditions having a similar effect are considered to hinder the emergence of a sustainable competitive market at the retail level or to not be in the end user's interest. Other specific obligations include cost recovery, price controls, provision of specified services needed to ensure interoperability of end-to-end services to users, and access to operational support systems or similar software systems necessary to ensure fair competition in the provision of services.

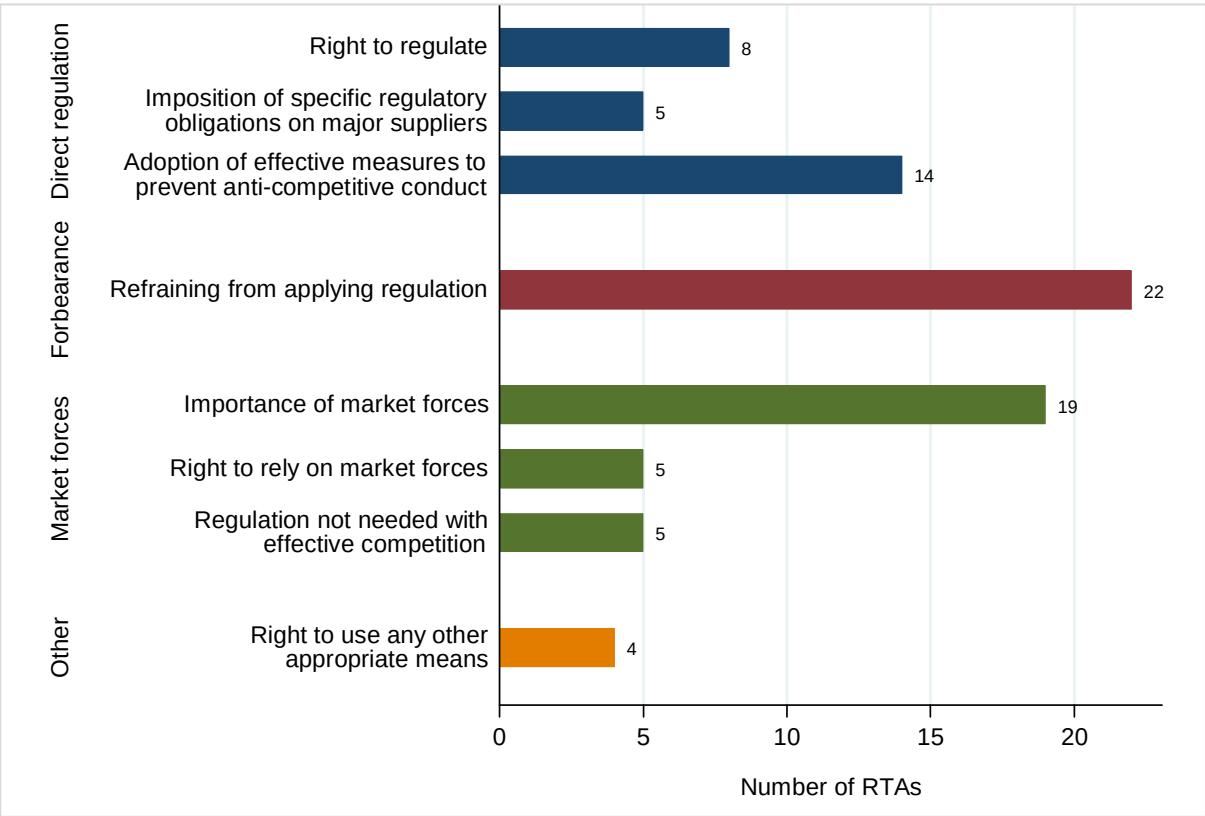
Similarly, 15 agreements, including the RTAs between Chile and Central America, require the parties to adopt or maintain effective measures to prevent anti-competitive practices by major suppliers. The effective measures include accounting requirements; requirements for structural separation; rules to ensure non-less favourable terms and conditions of access to and use of major suppliers' PT(T)NS; and rules to ensure the timely disclosure of technical changes to major suppliers' networks, services, and interfaces.

However, an increasing number of agreements, namely 21 RTAs, specifies that when a party engages in direct regulation, it may nonetheless refrain from applying that regulation, if the enforcement of that regulation is determined by the competent body to not be necessary to prevent unreasonable or discriminatory practices or to protect consumers, or if the forbearance of that regulation is consistent with the public interest, including the promotion and enhancement of competition. A few RTAs to which the United States is a party, including with Oman, clarify that the decision to forebear a regulation is subject to judicial review.

In line with the notion of forbearance, the second modality of implementation, found in 29 RTAs, suggests a light-handed market-based regulatory approach. A relatively common provision, included in 19 RTAs, recognizes the importance of relying on market forces to achieve wide choice in the supply of telecommunications services. A few RTAs with a similar provision, including the CPTPP, further specify that economic regulation may not be needed if there is effective competition or if a service is new to a market. The CPTPP and a couple of other RTAs further recognize that the parties may rely on the role of market forces, particularly with respect to market segments that are, or are likely to be, competitive or that have low barriers to entry, such as services provided by telecommunications services suppliers that do not own network facilities. A similar provision found in the RTA between the European Free Trade Associations states and Singapore specifies that there shall be primary reliance on private negotiations and industry self-regulation, subject to requirements designed to prevent anti-competitive conduct.

[29] Although note reviewed in this subsection, a few other provisions calling on or requiring the parties to adopt specific measures are discussed below.

Figure 11: A limited but increasing number of RTAs include provisions related to regulatory approaches



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

4.3 Interconnection rules

One of the main anti-competitive practices imposing constraints on market entry and viability of competing PTTNS suppliers has been the resistance of incumbents to offering interconnection to their network for the termination of calls or other services. Particularly, but not only, in the early stages of market reform, incumbents had been known to stall, overcharge, offer low quality connections, and even refuse interconnection. Negotiators of the Reference Paper were well aware of this, and therefore, made interconnection subject to detailed and strong provisions. To a certain degree, the Reference Paper interconnection rules overlap with the GATS Annex provisions on access to and use of PTTNS, since interconnection is also a form of access, while providing stronger disciplines than the GATS Annex, but for a smaller subset of suppliers, namely dominant suppliers of basic telecommunications services.[30]

Interconnection with a major supplier is guaranteed by the Reference Paper at any technically feasible point in the network. The Reference Paper further establishes disciplines on two essential aspects of interconnection: terms and conditions and transparency of interconnection arrangements. Most RTAs with comprehensive provisions on telecommunications services, namely 87 agreements, include provisions on interconnection. Many of these RTAs replicate or modify with few changes the Reference Paper provisions on interconnection rules. However, a limited but increasing number of RTAs clarify or expand some of the disciplines on interconnection established under the Reference Paper.

[30] WTO (2004), Panel report, *Mexico – Measures Affecting Telecommunications Services*, WT/DS204/R, adopted 1 June 2004.

4.3.1 Interconnection terms and conditions

The Reference Paper sets out three main obligations regarding interconnection terms and conditions. First, interconnection is required to be provided under non-discriminatory terms, conditions, rates and quality. Second, interconnection is required to be provided in a timely manner, on transparent and reasonable terms, conditions and cost-oriented rates, and sufficiently unbundled. Finally, interconnection can be provided, upon request, at additional points to existing network terminal points.

Reference Paper (Art. 2 Interconnection)

2.2 *Interconnection to be ensured*

Interconnection with a major supplier will be ensured at any technically feasible point in the network. Such interconnection is provided:

(a) *under non-discriminatory terms, conditions* (*including technical standards and specifications*) *and rates and of a quality no less favourable than that provided for its own like services or for like services of non-affiliated service suppliers or for its subsidiaries or other affiliates*;

(b) *in a timely fashion, on terms, conditions* (*including technical standards and specifications*) *and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided*;

(c) *upon request, at points in addition to the network termination points offered to the majority of users, subject to charges that reflect the cost of construction of necessary additional facilities*.

While most RTAs with provisions on telecommunications provisions, namely 77 agreements, incorporate most of the Reference Paper provisions related to interconnection terms and conditions, an increasing number of RTAs add clarifications or expand some of these disciplines, as featured in Figure 12.

A growing number of RTAs with provisions on interconnection require major suppliers of PT(T)NS to accord PT(T)NS suppliers of the other party treatment no less favourable than such major suppliers accord to their subsidiaries, affiliates, or non-affiliated service suppliers regarding the availability of technical interfaces necessary for interconnection. As discussed above, this type of provisions complements several other provisions on access to and use of PT(T)NS that cover also interconnection.

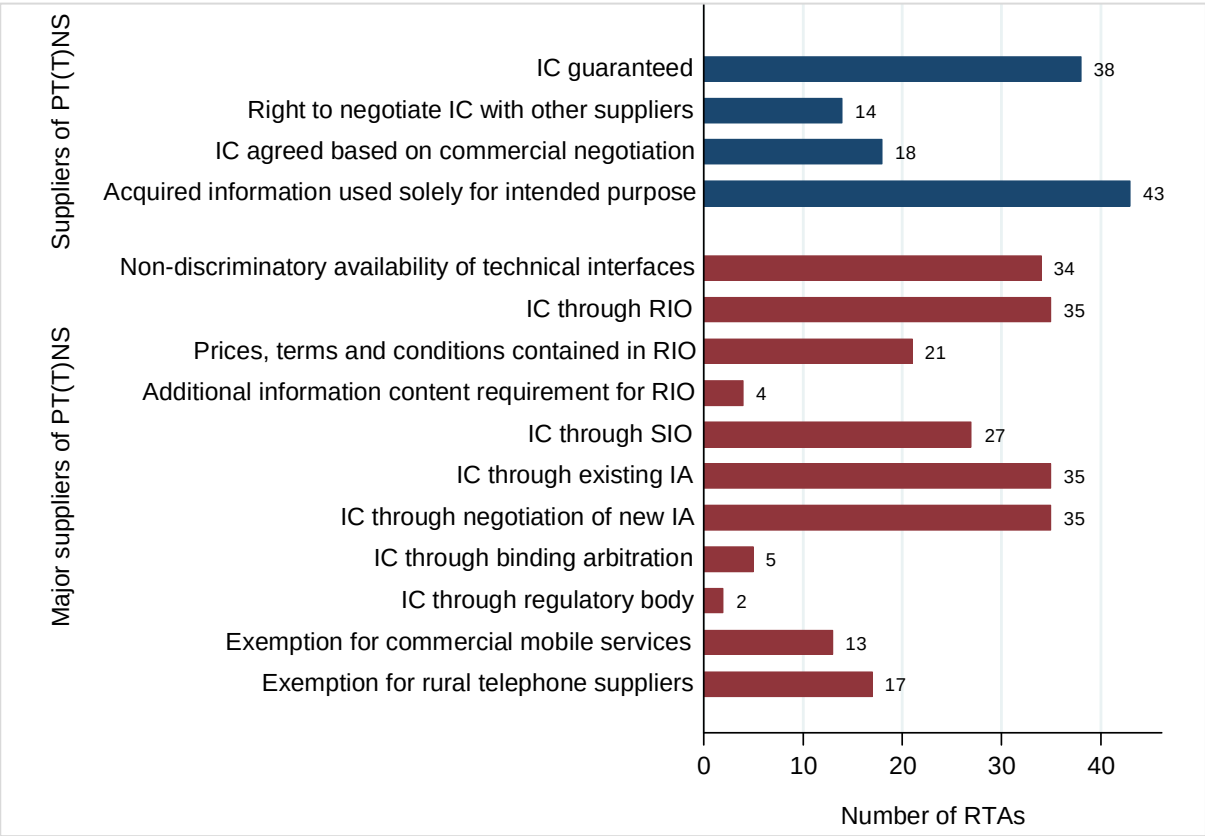
An increasing number of RTAs with provisions on interconnection with major suppliers explicitly specify the options through which PT(T)NS suppliers of one of the parties can interconnect their facilities and equipment with those of major supplier in the other party. The most common option listed is a reference interconnection offer. Some agreements, such as the RTA between Canada and the European Union, require major suppliers to establish a reference interconnection offer. A couple of RTAs, including the RTA between Japan and Singapore, further require major suppliers to provide a reference interconnection offer for approval by the relevant regulatory authorities.[31] A few agreements, including the RTA between Singapore and the United States, refer not only to a reference interconnection offer but also a standard interconnection offer. According to the definitions of reference interconnection offer and standard interconnection offer included in some RTAs, a standard interconnection offer does not require to be filed nor approved by the relevant regulatory authorities unlike the reference interconnection offer.[32]

[31] Several RTAs include a definition of reference interconnection offer, which refers to the fact such interconnection offer extended by a major supplier is filed with, approved by, or determined by a telecommunications regulatory body.

[32] Some agreements, such as the RTA between Australia and the United States, also refer to standard interconnection offers approved by a telecommunications regulatory body.

Some RTAs also specify the content of the reference interconnection offer, including the rates, terms, and conditions that the major supplier offers generally to PT(T)NS suppliers. A couple of RTAs, such as the RTA between Japan and Singapore, expand the minimum information content requirements for reference interconnection offer by requiring a list and description of the interconnection-related services offered, the terms and conditions for such services, the operational and technical requirements, and the procedures or processes used to order and provide such services. The RTA to which Singapore is a party with Japan and Chinese Taipei further, require reference interconnection offers to include clear and reasonable standard periods between the dates of request and commencement, and a statement regarding the duration of the proposed interconnection agreement, if it is fixed.

Figure 12: An increasing number of RTAs clarify and expand the provisions on interconnection terms and conditions



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. IC = interconnection; PT(T)NS = Public telecommunications (transport) network and services; RIO = reference interconnection offer; SIO = standard interconnection offer; IA = interconnection agreement.

Other relatively common options for interconnection with major suppliers, found in several agreements, including the RTA between the Republic of Korea and the United States, include the terms and conditions of an existing interconnection agreement or the negotiation of a new interconnection agreement. A couple of RTAs, including the RTA between India and the Republic of Korea, recognize that timeliness may vary from case to case, depending upon the complexity of each interconnection negotiation, which may be affected by a range of factors. These RTAs, however, require interconnection to not be delayed without justifiable reasons.

Only a few RTAs, including the RTA between Australia and Malaysia, specify that PT(T)NS suppliers may interconnect with major suppliers through binding arbitration. Similarly, a couple of RTAs, such as the RTA between Australia and Peru, include a provision referring to the possibility to interconnect with major suppliers through the terms and conditions set by a telecommunications regulatory body or other competent body. This option is also explicitly recognized in a number of other RTAs, which provide a definition of reference interconnection offer, in which the interconnection offer extended by a major supplier can be determined by a telecommunications regulator body.

A limited number of RTAs narrow the scope of application of the provisions on interconnection with major suppliers by specifying that suppliers of commercial mobile services are not subject to them. Likewise, 16 RTAs exempt rural exchange carriers from these obligations related to interconnection with major suppliers, unless a regulator decides otherwise.

Besides provisions on interconnection with major suppliers, an increasing number of RTAs include several provisions that cover explicitly interconnection with any PTNS supplier regardless of its position in the market or control over essential facilities.[33] As explained above, most RTAs with provisions on access to and use of PT(T)NS replicate the GATS Annex provision requiring the parties to ensure that service suppliers of the other party are permitted to interconnect private leased or owned circuits with PT(T)NS. This provision is complemented by a few other provisions, some of which are similar to the ones addressing interconnection with major suppliers. For instance, 37 agreements, including the RTA between Australia and Chile, require the parties to ensure PT(T)NS suppliers of a party provide, directly or indirectly, interconnection with PT(T)NS suppliers of the other party. A few agreements, such as the RTA between Australia and Hong Kong, China, further require such interconnection to be provided at reasonable costs. Similarly, a couple of RTAs, such the Additional Protocol to the Framework Agreement of the Pacific Alliance, requires such interconnection to be provided at cost-oriented costs in the absence of an agreement between the suppliers of PTS.

Several RTAs, including the RTA between the European Union and Viet Nam, require the parties to ensure that authorised suppliers of PT(T)NS have the right, and when requested by another supplier, the obligation, to negotiate interconnection with each other for the purposes of PT(T)NS. Unlike the Reference Paper, a limited but increasing number of RTAs, including the RTA between India and Japan, explicitly call for rates, terms and conditions of interconnection to be determined, in principle, through commercial negotiations.

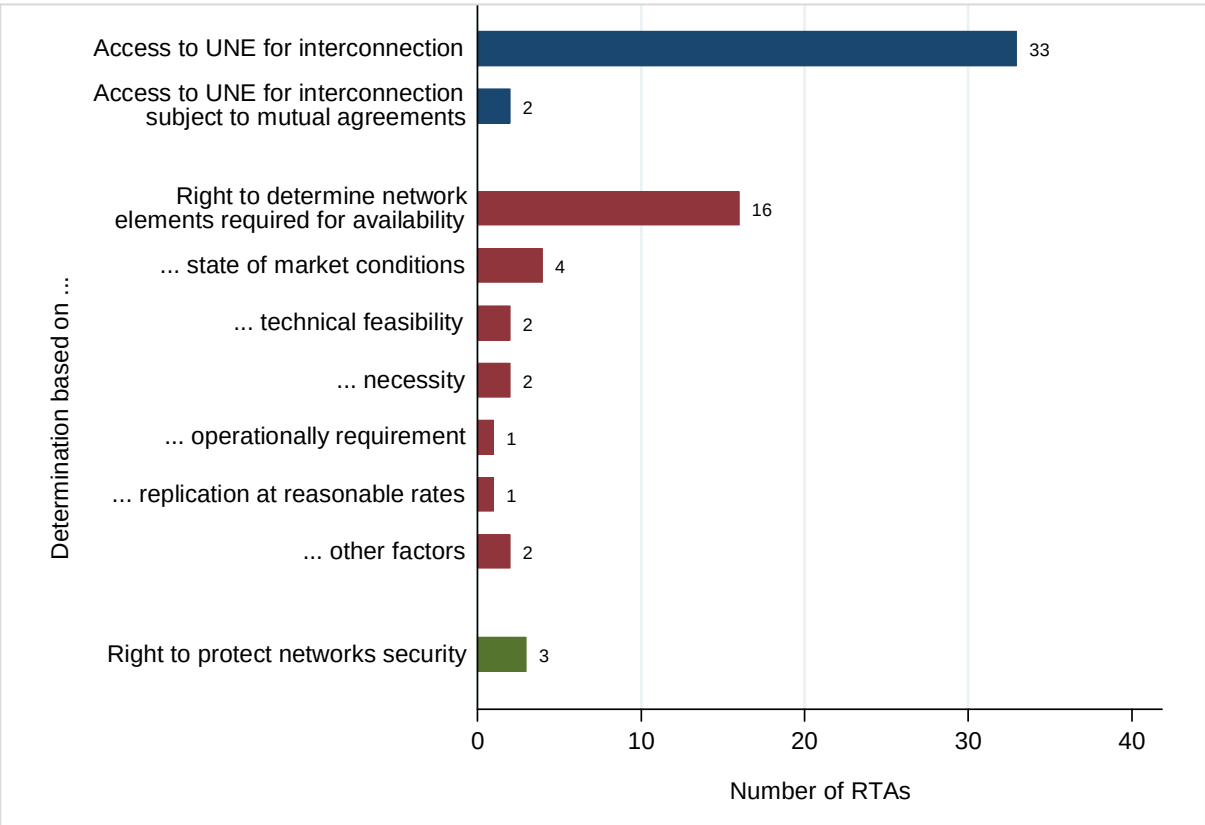
As explained above, the Reference Paper requires the adoption of appropriate measures to prevent major suppliers from engaging in competitive practices, including using information obtained from competitors with anti-competitive results. An increasing number of RTAs include a provision on commercially sensitive information acquired during the negotiation of interconnection arrangements regardless of the involvement of a major supplier. Several agreements, including the RTA between Armenia and the European Union, require the parties to ensure that PT(T)NS suppliers that acquire information from another supplier during the process of negotiating interconnection arrangements use that information solely for the purpose for which it was supplied and respect at all times the confidentiality of information transmitted or stored. Although worded differently, a similar type of provisions is found in several RTAs, including the RTA between India and Malaysia, requiring the parties to ensure that PT(T)NS suppliers take reasonable steps to protect the confidentiality of commercially sensitive information obtained as a result of interconnection arrangements and only use such information for the purpose of providing the interconnection requested.

4.3.2 Unbundling of network elements

As explained above, the Reference Paper guarantees, among others, the right of suppliers to interconnect with a major supplier's network on a sufficiently unbundled basis so that they do not need to pay for network components or facilities not required for the service to be provided. Building on this Reference Paper obligation, a limited but increasing number of RTAs include a few specific provisions related to unbundling of network elements, often found in a dedicated article to unbundling of network elements, as highlighted in Figure 13.

[33] As discussed above these provisions complement several provisions on access to and use of PT(T)NS that cover also explicitly interconnection.

Figure 13: Provisions on unbundling of network elements are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. UNE = unbundling of network elements.

A limited but increasing number of RTAs, such as the RTA between Peru and the United States, specify that the parties may determine the network elements to be made available in their respective territory for supply on a mandatory unbundled basis and the classes of competitors eligible to access network elements in accordance with their respective laws or regulations. Only a few RTAs with such provision, including the RTA between the Republic of Korea and Singapore, refer only to the parties' right to specify the network elements required to be made available. Similarly, only a couple of agreements, including the RTA between the European Union and Viet Nam, require explicitly the parties to determine specific network elements requested to be made available in their respective territory in accordance with their respective domestic laws and regulations.

A few RTAs with the provision on the right to determine specific network elements further specify what must be taken into account when determining the network elements to be made available. Many of these complementary provisions are only found in one or a couple of RTAs. For instance, under the RTA between Australia and Singapore, the determination of the specific network elements to be made available must be done on the basis of the technical feasibility of unbundling and the state of competition in the relevant market. Similarly, the RTA between Chile and the United States requires the competent body to consider, at a minimum, whether access to such network elements is necessary, and whether the failure to provide access to such network elements would impair the ability of PTS suppliers of the other party to provide the services they seek to offer. The RTA between Singapore and the United State includes the same provision but adds that the telecommunications regulatory body must further consider whether the network elements can be replicated or obtained from other sources at reasonable rates, such that the unavailability of these network elements from the major supplier will not impair the ability of other PTS suppliers to provide a competing service, and whether the network elements are technically or operationally required for the provision of a competing service. If network elements are not determined by governments, only two RTAs, including the RTA between India and Singapore, specify that access to unbundled network elements, at premises owned or controlled by the major suppliers, are subject to mutually agreed terms and conditions between service suppliers.

A few agreements with a specific article on unbundling of network elements, including the RTA between India and the Republic of Korea, confirm that nothing in that article shall prevent the parties from taking measures as are necessary to protect the security of their networks provided such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade in services.

4.3.3 Transparency of interconnection procedures and arrangements

The transparency of terms and conditions for interconnection, including prices and negotiation procedures, plays an important role in speeding-up negotiation, avoiding disputes and giving confidence to market players that a service is being provided on non-discriminatory terms. The Reference Paper requires negotiation procedures and interconnection agreements to be made publicly available. The Reference Paper does not prescribe any particular approach for implementing transparency obligations, thereby allowing governments to decide whether to require the major suppliers to publish the relevant information, in particular with respect to reference interconnection offer and interconnection agreements, or to provide this information to regulators, who will then publish it.

Reference Paper (Art. 2 Interconnection)

2.2 *Public availability of the procedures for interconnection negotiations*

The procedures applicable for interconnection to a major supplier will be made publicly available.

2.3 *Transparency of interconnection arrangements*

It is ensured that a major supplier will make publicly available either its interconnection agreements or a reference interconnection offer.

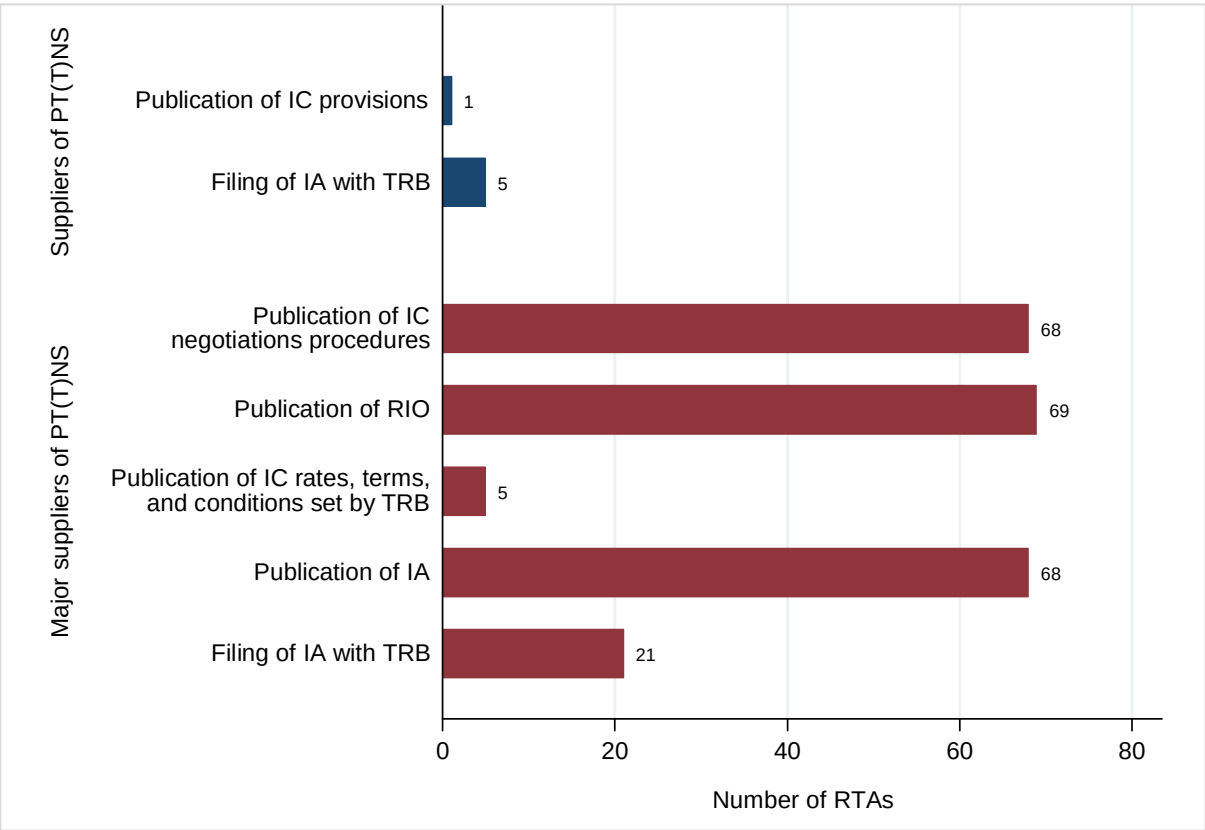
Most RTAs with provisions on interconnection with major suppliers, namely 74 agreements, include provisions establishing transparency obligations related to interconnection with major suppliers. While most of these provisions replicate the provisions on transparency related to interconnection with major suppliers set out in the Reference Paper, several other provisions, found in a limited but increasing number of RTAs, provide some clarification regarding the transparency of interconnection arrangement, as highlighted in Figure 14.

A large number of RTAs require the parties to ensure that major suppliers make publicly available either their respective reference interconnection offer or interconnection agreements. Some of these agreements, such as the RTA between Japan and Peru, also extend this transparency requirement to standard interconnection offers, which typically do not need to be filed with or approved by the telecommunications regulatory body.

Conversely, some RTAs, such as the RTA between Panama and Singapore, require major suppliers to file all interconnection agreements to which they are party with the telecommunications regulatory body. In that context, some of these and couple of other RTAs further require the telecommunications regulatory body to make these interconnection agreements publicly available. A few agreements, including the RTA between Australia and Hong Kong, China, also require the public availability of rates, terms and conditions for interconnection with a major supplier set by the telecommunications regulatory body or other competent body.

As explained above, an increasing number of RTAs include provisions on interconnection that are not specific to major suppliers. A limited number of these RTAs, including the RTA between the European Free Trade Association states and Singapore require PTS suppliers to file their interconnection agreements to the telecommunications regulatory body. Similarly, the RTA between Colombia and Costa Rica is the only notified RTA to explicitly require the parties to make publicly available relevant procedures of their regulatory body, including those related to interconnection.

Figure 14: Provisions clarifying the transparency obligations of interconnection arrangements are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. IC = interconnection; PT(T)NS = Public telecommunications (transport) network and services; RIO = reference interconnection offer; IA = interconnection agreement; TRB = telecommunications regulatory body.

4.4 Independence of telecommunications regulators

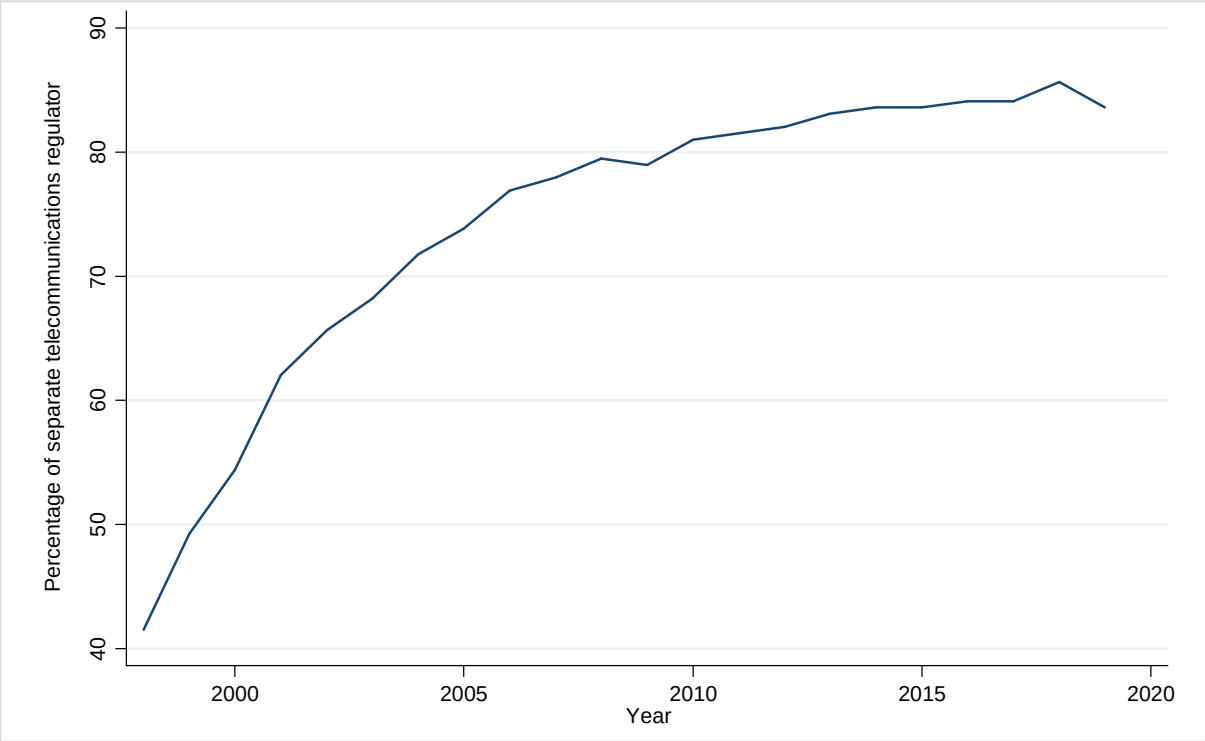
As discussed above, the telecommunications sector has experienced important changes in regulatory practices over the years. Sector regulatory practices adapted initially to force the introduction of competition. The Reference Paper requires regulators to be independent and their decisions and procedures to be impartial vis-à-vis market participants in the telecommunications sector. The provision complements the GATS Article VI:1, which requires all measures of general application affecting trade in services to be administered in a reasonable, objective and impartial manner for service sectors in which commitments are undertaken.

Reference Paper (Art. 5 Independent regulators)

The regulatory body is separate from, and not accountable to, any supplier of basic telecommunications services. The decisions of and the procedures used by regulators shall be impartial with respect to all market participants.

Since the Reference Paper first began to be adopted by WTO members in 1998, the share of governments with independent regulators has grown from 42 per cent to more than 80 per cent as of 2019, as illustrated in Figure 15. Nowadays, regulatory functions are not only separated from the operators, but often also separated from the policy-making arm of governments.

Figure 15: Most telecommunications regulatory authorities have autonomous decision-making powers



Source: ITU ICT-Eye.
Note: 195 economies surveyed.

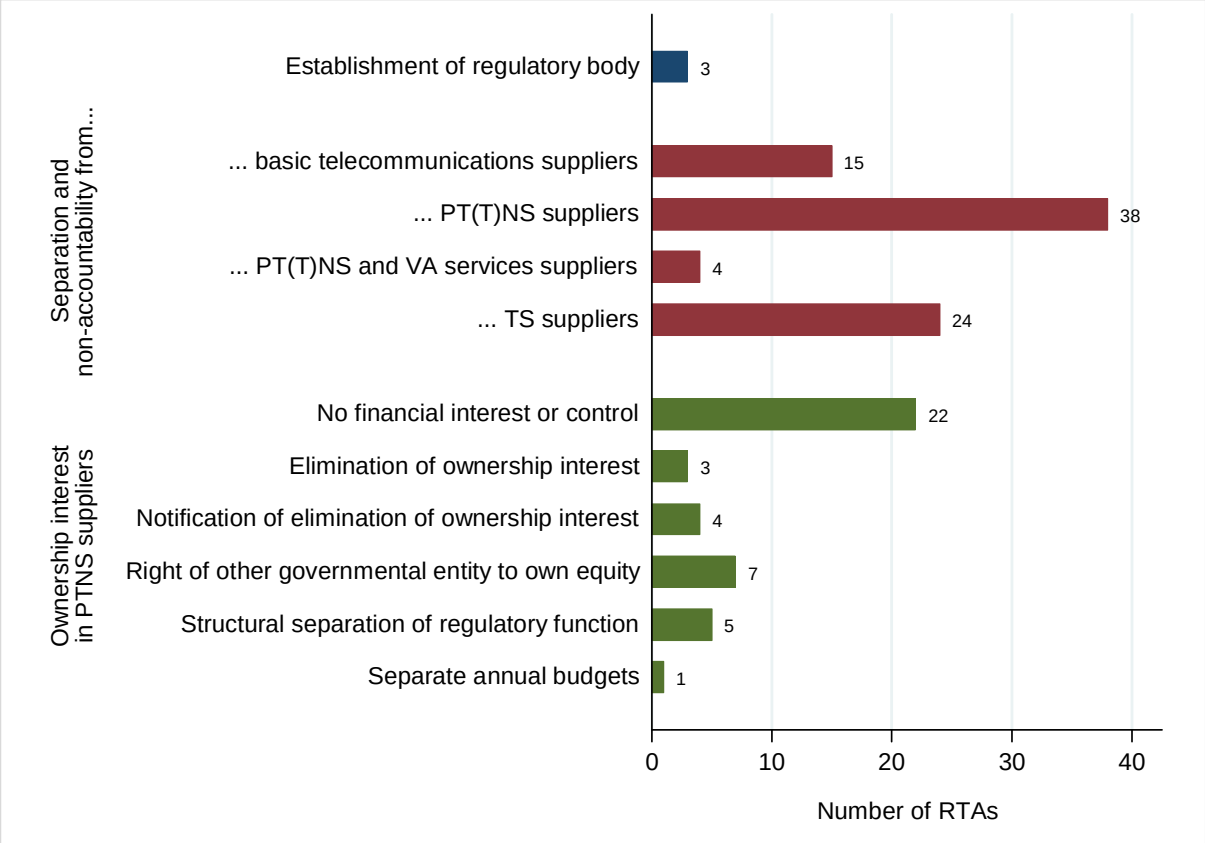
Most RTAs with provisions on telecommunications services, namely 79 agreements, include provisions on independence of the telecommunications regulatory body. However, an increasing number of RTAs add clarifications or expand the Reference Paper disciplines with respect to telecommunications regulators' (1) creation, separation and non-accountability; (2) impartial decisions and procedures; and (3) enforcement powers.

4.4.1 Creation, separation and accountability

A couple of RTAs, such as the RTA between the Association of Southeast Asian Nations (ASEAN), Australia and New Zealand, explicitly requires establishing or maintaining a telecommunications regulatory body as part of the domestic legal framework. While some agreements, such as the RTA between Colombia and the European Free Trade Association states, replicate the Reference Paper language on separation of the regulatory body, an increasing number of RTAs expand the scope of such provision and require the separation and non-accountability of the regulatory body from operators beyond suppliers of basic telecommunications services, as highlighted in Figure 16. Some agreements, such as the RTA between the Republic of Korea and Peru, require the parties to ensure that their respective telecommunications regulatory body is separate from, and not accountable to, any PT(T)NS supplier. A few RTAs, including the RTA between Canada and Peru, extend the separation of the regulatory body to value-added services suppliers. Similarly, several agreements, including the RTA between Australia and Japan, require regulators to be independent from any telecommunications supplier.

A limited number of RTAs further clarify the methods through which independence and non-accountability are achieved. Several agreements, including the USMCA, require the parties to ensure that their respective telecommunications regulatory bodies do not hold a financial interest or maintain an operating role in any PTS supplier. Only a few agreements with such provision, including the RTA between Australia and Chile, refer to PTNS. Similarly, a few agreements, such as the RTA between Morocco and the United States, require governments to maintain the absence of or eliminate as soon as feasible their ownership in any PTS supplier. Most of these RTAs and a few other further require notifying as soon as possible the other party of the government's intention to reduce or eliminate their ownership in PTS supplier.

Figure 16: Provisions expanding the disciplines on independence of telecommunications regulatory bodies are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PT(T)NS = Public telecommunications (transport) network and services; TS = Telecommunications services; VA = value-added.

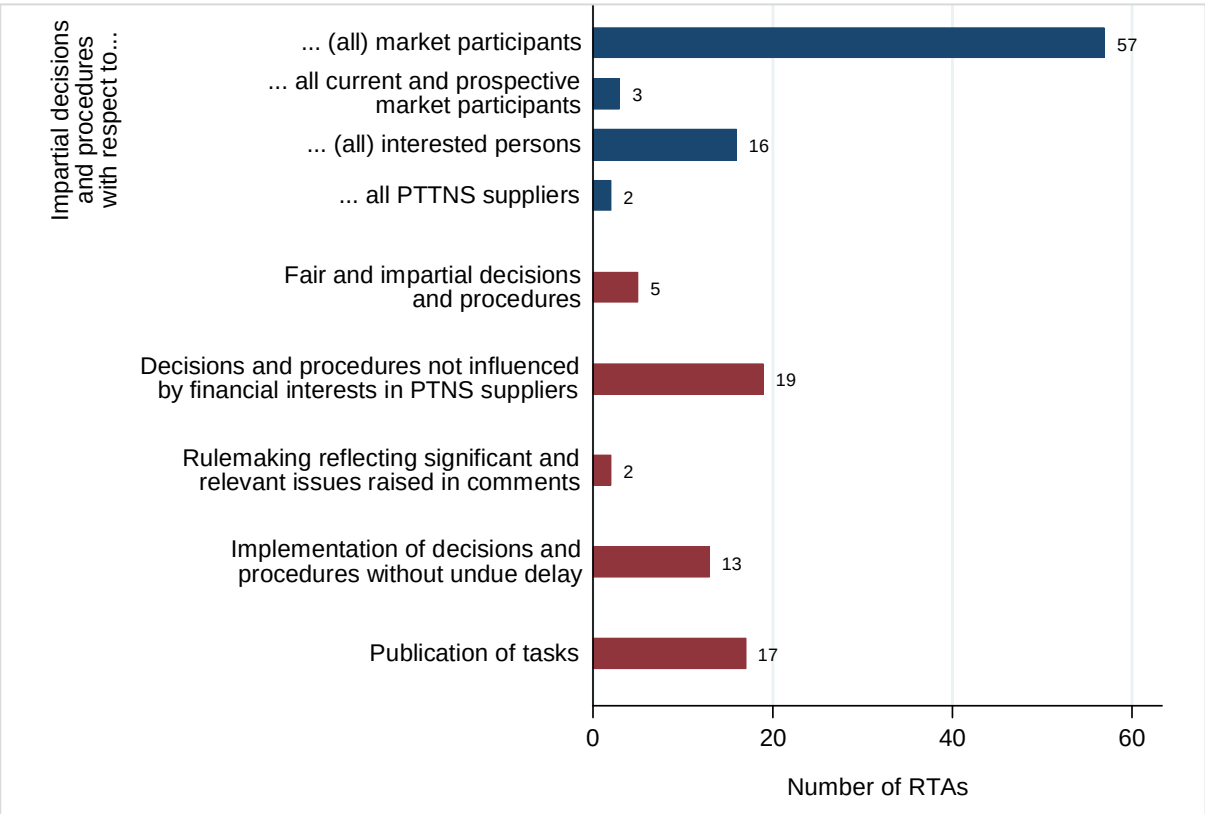
Conversely, if a party retains ownership or control of a PT(N)S supplier, a few agreements, including the RTA between the European Union and Ukraine, require the effective structural separation of the regulatory function from activities associated with any telecommunication supplier owned or controlled by the government. The RTA between Armenia and the European Union further requires regulatory authorities to have separate annual budgets. Some recent agreements, including the RTA between Australia and Peru, clarify that the requirement of no financial interest and operating role does not prohibit a government entity other than the telecommunications regulatory body from owning equity in a PTS supplier.

4.4.2 Impartial decisions and procedures

Most RTAs with provisions on independent regulators replicate the Reference Paper obligation of impartial decisions and procedures of telecommunications regulatory bodies with respect to all market participants. A couple of agreements with such provision, including the RTA between Australia and Japan, refer specifically to all current and prospective market participants. Similarly, some RTAs, such as the RTA between the European Union and Singapore, require not only impartial but also fair decisions and procedures of regulators.

Besides the obligation of separation discussed above, a limited but increasing number of RTAs explicitly clarify the way in which impartiality is achieved, as shown in Figure 17. Several agreements, including the RTA between Mexico and Panama, require the parties to ensure that any financial interest that they hold in a PT(N)S supplier does not influence the decisions made and procedures used by their telecommunications regulatory body.

Figure 17: Provisions clarifying the disciplines on impartiality of telecommunications regulatory bodies are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PTNS = Public telecommunications network and services; PTTNS = Public telecommunications transport network and services.

A complementary provision to the obligation of impartial decisions and procedures, found in some RTAs, including the RTA between the European Union and Singapore, requires the decisions and procedures of the telecommunications regulatory body to be made and implemented without unduly delay. Although worded differently, the RTA between Canada and the European Union includes a relatively similar provision but further requires the decisions and procedures of the telecommunications regulatory body to be administered in a transparent manner. In that context, and in addition to specific transparency provisions discussed in detail below, a limited number of agreements, including the RTA between the European Union and Ukraine, further require the easily accessible and clear publication of the tasks and duties to be undertaken by the regulatory authorities, in particular where those tasks are assigned to more than one body.[34] Under a couple of agreements, such as the RTA between India and Malaysia, the telecommunications regulatory body is also required to respond in its rulemaking to all significant and relevant issues raised in comments filed with the telecommunications regulatory body. As discussed in greater detail in the next subsection, an increasing number of RTAs guarantee the right of any user or supplier, that have been affected by the decision of the regulatory authority, to appeal against that decision.

4.4.3 Enforcement powers

While the Reference Paper is silent on the empowerment of the telecommunications regulatory bodies, an increasing number of RTAs explicitly address this issue, in particular the need for regulatory enforcement powers, as highlighted in Figure 18.

[34] The RTA between Armenia and the European Union is the only notified RTA to include a detailed provision specifying, among other things, that the head of a regulatory authority, or where applicable, members of the collegiate body fulfilling that function within a regulatory body may be dismissed only if they no longer fulfil the conditions required for the performance of their duties which are laid down in advance in domestic law.

Some agreements, such as the RTA between the European Union and Singapore, require the regulatory authorities to be sufficiently empowered to regulate the telecommunications sector. A couple of agreements, including the RTA between the European Union and Japan, further requires the telecommunications regulatory bodies to be sufficiently empowered to carry out the task assigned to them. In that context, several agreements, including the RTA between Panama and the United States, require the parties to endeavour to ensure that their telecommunications regulatory bodies have adequate resources to carry out their functions. Only a couple of RTAs, including the RTA between Singapore and Turkey, refer explicitly to adequate financial and human resources to carry out the tasks of the regulatory bodies.

An increasing number of RTAs include provisions that explicitly require the telecommunications regulatory bodies to have the authority or power to address specific issues. For instance, the Additional Protocol to the Framework Agreement of the Pacific Alliance requires the parties to provide their respective regulatory bodies with power to require interconnection at cost-oriented rates. Similarly, the USMCA requires the parties to ensure that their respective telecommunications regulatory body has the authority to impose requirements on a major supplier that are additional to or different from requirements imposed on other suppliers in the telecommunications sector.

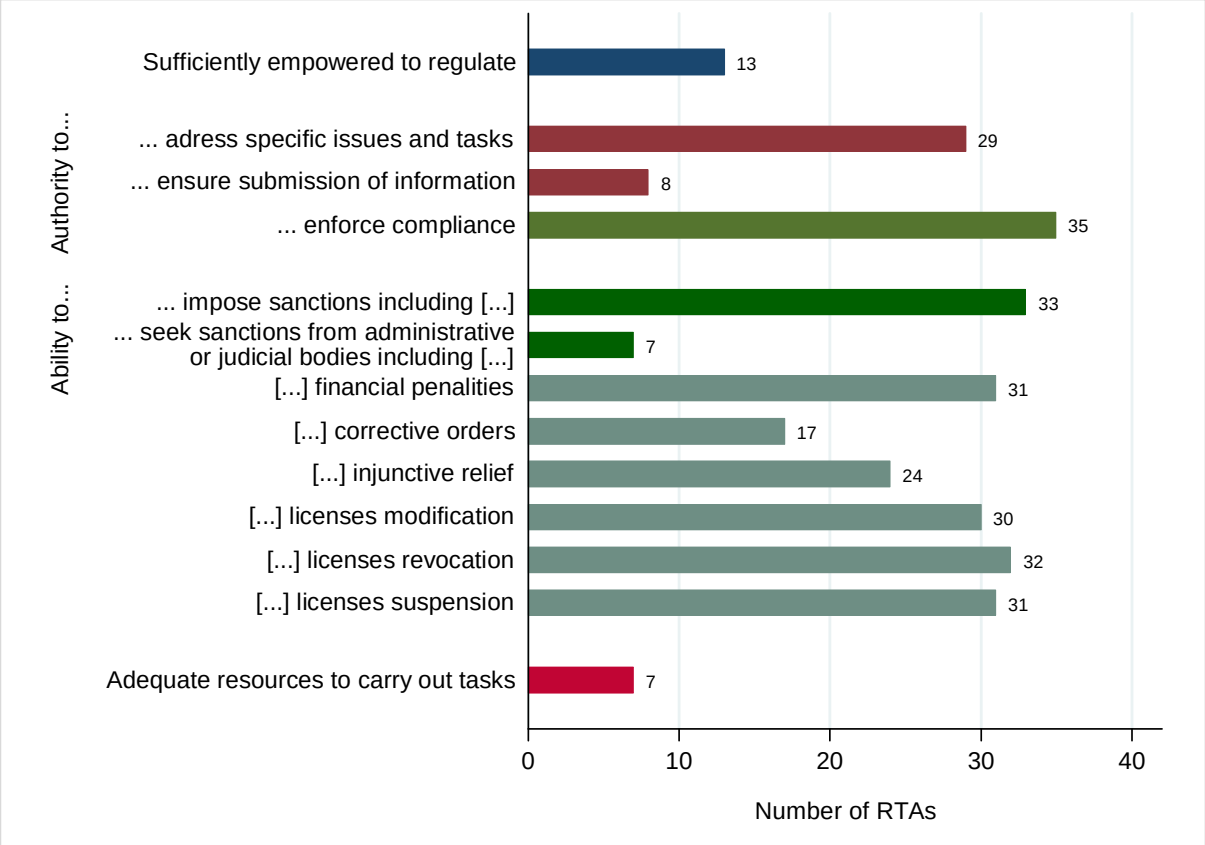
In parallel, several RTAs incorporate provisions that require the telecommunications regulatory bodies to have the authority or power to perform specific tasks. For instance, the RTA between the European Union and Ukraine specifies that the regulatory authority shall have the power to carry out an analysis of relevant product and service markets liable to an *ex ante* regulation. Similarly, a few agreements, including the RTA between the European Union and Viet Nam, require regulatory authorities to have the power to ensure that T(T)NS suppliers within their respective territories provide them, upon request and promptly, with all the information, including financial information, which is necessary to enable the regulatory authorities to carry out their tasks. These RTAs further specify that information requested by the regulatory authorities shall be proportionate to the performance of their task. A couple of these RTAs, including the RTA between Armenia and the European Union, require the regulatory authorities to treat the information requested in accordance with the requirements of confidentiality. A few of these RTAs, including the RTA between the European Union and Georgia, also require the regulatory authorities to provide the reasons justifying their request for information.

Enforcement is another crucial task of the telecommunications regulatory authorities that is the object of specific provisions included in an increasing number of RTAs, often found in a specific article entitled enforcement. Several agreements, including the RTA between Australia and Peru, require the parties to provide their respective telecommunications regulatory body or other competent body with the authority to enforce their measures. Similarly, some agreements, including the RTA between Canada and Honduras, require adopting or maintaining appropriate procedures and authority to enforce compliance. Both provisions refer specifically to the enforcement of domestic measures adopted by the competent authorities in compliance with a subset of obligations related to telecommunications services set out in their respective RTAs.[35]

Most RTAs with a provision on enforcement, including the RTA between Costa Rica and Singapore, further specify that providing the competent authorities with the authority to enforce must include the ability to impose effective, or in some other RTAs appropriate, sanctions. Some agreements, including the RTA between Australia and the Republic of Korea, refer also to the ability of the competent authorities to seek effective sanctions from administrative or judicial bodies. Most RTAs with provisions on enforcement provides a list of type of sanctions, including financial penalties, corrective orders, injunctive reliefs (on an interim or final basis), and modification, suspension or revocation of licences or other authorizations.

[35] One of the few exceptions is found in the RTA between Canada and the Republic of Korea, in which the provision on enforcement refers to the enforcement of domestic measures relating to the obligations under the chapter on telecommunications services.

Figure 18: Provisions on empowerment of telecommunications regulatory bodies are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

4.5 Dispute resolution mechanisms

Dispute resolution mechanisms are essential to resolve any dispute that might arise between PT(T)NS suppliers, between suppliers and users, and between suppliers and authorities. Access to a dispute resolution mechanism can bring predictability to suppliers and act as an important factor to attract investment in the sector. The Reference Paper requires independent domestic bodies, which can be telecommunications regulatory bodies, to grant suppliers of basic telecommunications services with access to a dispute resolution mechanism in the case of disputes related to interconnection with major suppliers.

Reference Paper (Art. 2 Interconnection)

2.5 *Interconnection*: *dispute settlement*

A service supplier requesting interconnection with a major supplier will have recourse, either:

(a) *at any time or*

(b) *after a reasonable period of time which has been made publicly known*

to an independent domestic body, which may be a regulatory body as referred to in paragraph 5 *below, to resolve disputes regarding appropriate terms, conditions and rates for interconnection within a reasonable period of time, to the extent that these have not been established previously*.

Most RTAs with provisions on telecommunications services, namely 78 agreements, incorporate provisions on resolution of domestic telecommunications disputes. A large number of RTAs replicate, and in some cases add clarifications to the right of PT(T)NS suppliers to have recourse to an independent domestic body to resolve disputes with a major supplier regarding interconnection. In parallel, an increasing number of RTAs incorporate provisions that build on the GATS Article VI:2, which provides the right of any foreign service supplier to access a recourse mechanism to appeal an administrative decision. In particular, these agreements expand the scope of application of the provisions on resolution of telecommunications disputes by explicitly addressing the right of PT(T)NS suppliers to (1) have recourse to regulatory authorities to resolve disputes regarding domestic measures; (2) request reconsideration of decisions made by regulatory authorities; and (3) appeal and request a judicial review of the decisions of the regulatory authorities.

4.5.1 Recourse to regulatory authorities

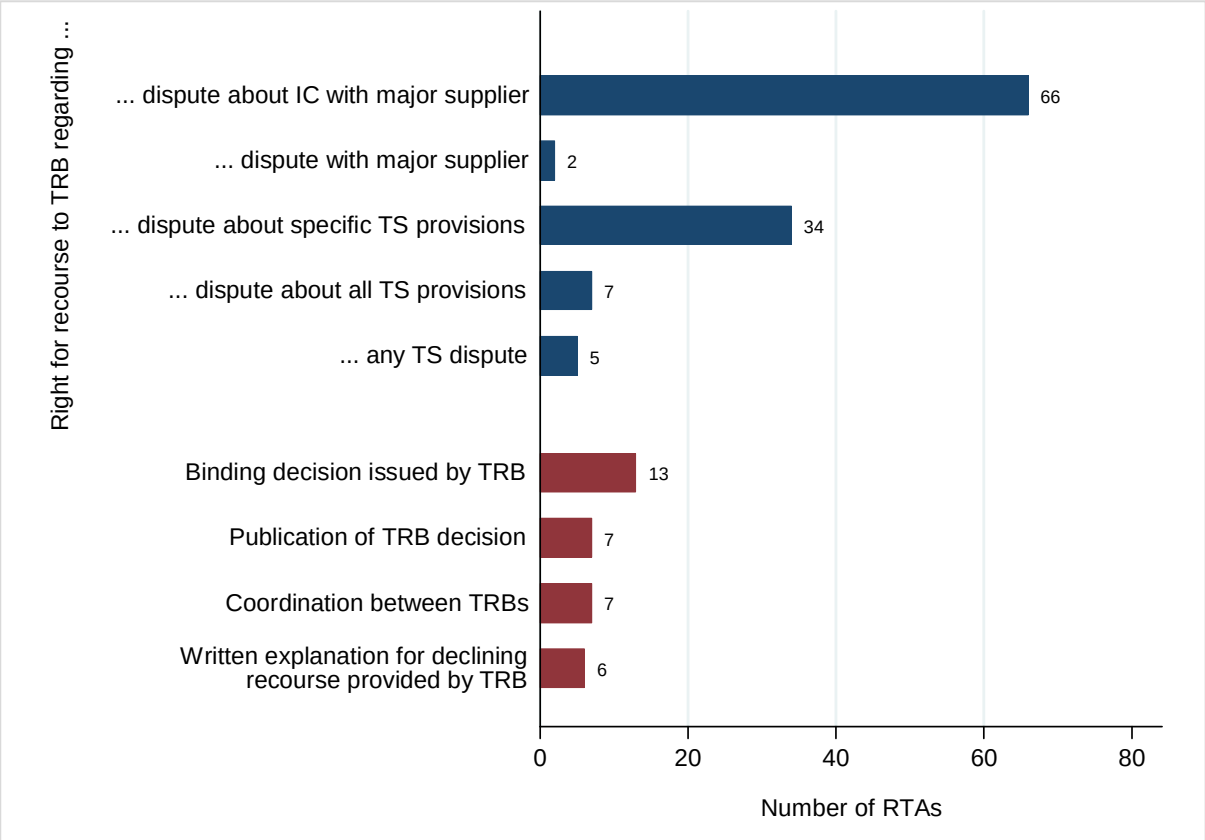
Although often worded differently, the provision guaranteeing the right of PT(T)NS suppliers to have timely recourse to an independent domestic body to resolve disputes with major suppliers regarding the terms, conditions and rates for interconnection is found in a large number of RTAs. In most of these agreements, the obligation only and specifically applies to the telecommunications regulatory body.

While the Reference Paper is silent on the way to conduct the dispute settlement mechanism concerning interconnection with major suppliers, a limited number of agreements to which the European Free Trade Associations states are a party, including with Singapore, require the regulatory body to fix the conditions for the interconnection in accordance with the normal principles governing the market and the sector in question and in accordance with the principles set out in the agreement. These RTAs further specify that domestic legislation may provide for special conciliation proceedings.

As highlighted in Figure 19, the provision on recourse for interconnection with major suppliers is supplemented in an increasing number of agreements, including the RTA between Colombia and the Republic of Korea, by another provision guaranteeing the right of PT(T)NS suppliers to have recourse to resolve other specific matters. Under this type of provisions, enterprises or PT(T)NS suppliers of a party may submit a recourse to the telecommunications regulatory body or other relevant body of the other party to resolve disputes regarding the other party's measures relating to matters set out in specific provisions on telecommunications services, including access to and use of PT(T)NS, interconnection and safeguard measures. Only a few agreements, including the RTA between Japan and Mongolia, extends the right to have recourse to the telecommunications regulatory body or dispute settlement body to settle any disputes in accordance with the parties' respective laws and regulations. Similarly, only a couple of agreements, including the RTA between Colombia and the European Free Trade Association states, refer specifically to any disputes regarding major suppliers, and not only about interconnection.

A limited number of RTAs with a provision on recourse for specific matters, including the RTA between the European Union and Viet Nam, further require the regulatory authority to issue a binding decision to resolve the dispute within a reasonable period of time. When such a dispute concerns the cross-border provision of services, some of these agreements, including the RTA between the European Union and Ukraine, require the national regulatory authorities concerned to coordinate their efforts in order to bring about a resolution of the dispute. Some of these agreements also require the regulatory authority to provide a full statement of the reasons on which its decision is based and to make its decision available to the public, having regard to the requirements of business confidentiality. A few other RTAs, such as the RTA between Australia and Peru, require the telecommunications regulatory body to provide, within a reasonable period of time, a written explanation for its decision not to initiate action on a request to resolve a dispute.

Figure 19: An increasing number of RTAs expand the scope of the provisions on recourse



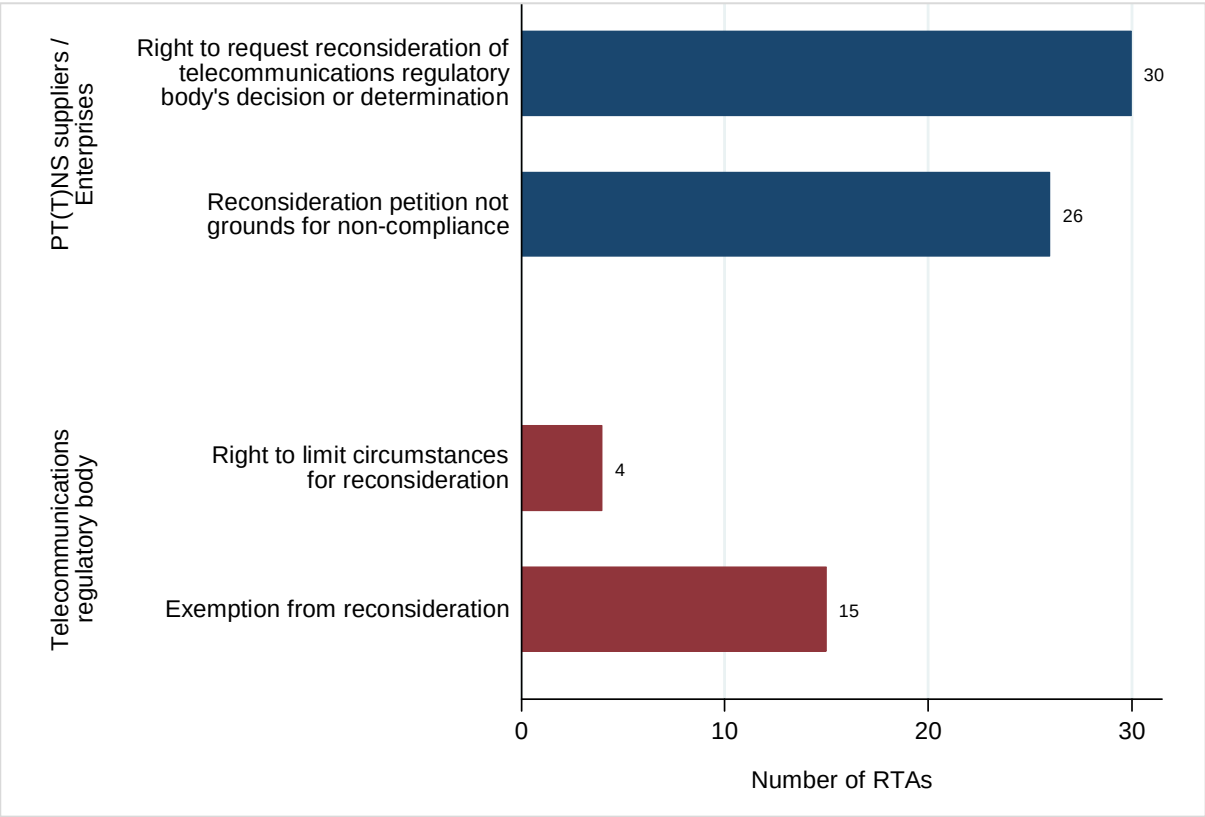
Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. IC = interconnection; TS = telecommunications services; and TRB = telecommunications regulatory body.

4.5.2 Reconsideration of regulatory authorities' decisions

Besides the right for recourse, an increasing number of agreements, including the RTA between Canada and Peru, require the parties to ensure that any PT(T)NS supplier, or in some RTAs any enterprise, aggrieved or whose (legally protected) interests are adversely affected by a determination or decision of the telecommunications regulatory body, may petition that body for reconsideration of the determination or decision. As highlighted in Figure 20, many of the RTAs with such provision, including the RTA between Oman and the United States, further clarify that a petition for reconsideration does not constitute grounds for non-compliance with the determination or decision of the telecommunications regulatory body unless an appropriate authority stays such determination or decision.

A couple of recent RTAs, including the CPTPP, specify that the parties may limit the circumstances under which reconsideration is available, in accordance with their respective laws and regulations. In that context, some RTAs specify that some decisions or determinations made by the telecommunications regulatory body are exempted from the scope of application of the provision on reconsideration. In several cases, such as the RTA between Canada and Panama, petition for reconsideration of rulings of general application is not allowed unless provided for under the party's laws and regulation. In some other cases, such as the RTA between Canada and Honduras, reconsideration does not apply to a determination or decision related to the establishment and application of spectrum and frequency management policies. In a few other cases, such as the RTA between Canada and the Republic of Korea, a determination or decision regarding disputes between service suppliers or between service suppliers and users cannot be subject to a reconsideration petition.

Figure 20: Provisions on reconsideration are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

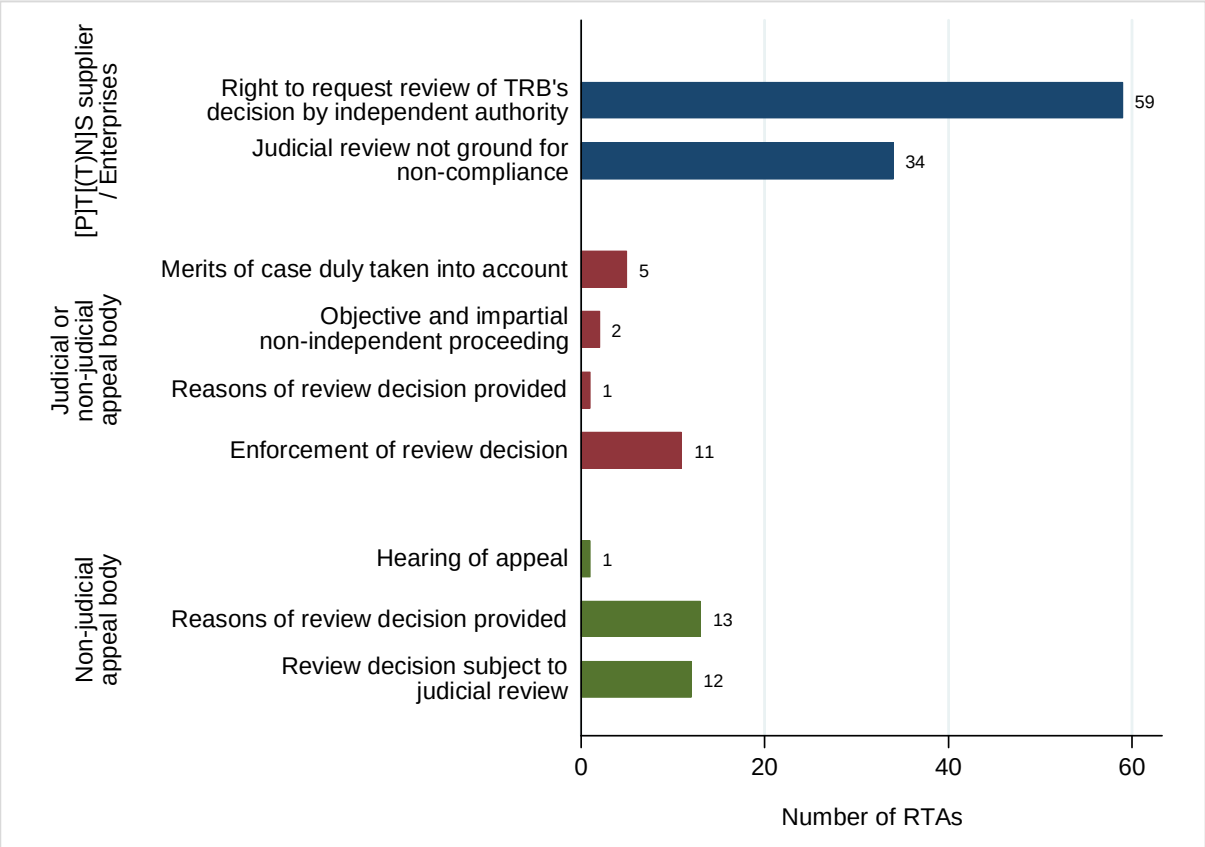
4.5.3 Appeal and judicial review of regulatory authorities' decisions

In addition to the right for recourse and in some cases the right for reconsideration, an increasing number of RTAs guarantee the right to appeal the decisions made by the telecommunications regulatory body to an independent body. In particular, many RTAs, including the RTA between India and Malaysia, stipulate that any PT(T)NS supplier, or in some agreements any services supplier or any enterprise, aggrieved or whose (legally protected) interests are adversely affected by a determination or decision of the telecommunications regulatory body, has the opportunity to appeal such determination or decision to an independent judicial or administrative authority.

Just like the provision on reconsideration, several RTAs with a provision on the right for appeal, such as the CPTPP, clarify that, pending the outcome of the appeal, the making of an application for judicial review does not constitute grounds for non-compliance with the determination or decision of the telecommunications regulatory body, unless the judicial body issues an order that the determination or decision not be enforced while the legal proceeding is pending.

Other provisions on appeal, found in a limited number of RTAs, specify the way to conduct the appeal proceedings, as shown in Figure 21. A couple of RTAs to which the EU is a party, including with Georgia, require the parties to ensure that the merits of the case are duly taken into account. A couple of other agreements, including the RTA between the Republic of Korea and Viet Nam, require the parties to ensure that the administrative, arbitral or judicial appeal procedures provide for an objective and impartial review, when these appeal procedures are not independent of the telecommunications regulatory body.

Figure 21: Provisions on reconsideration and appeal of telecommunications regulatory body's decisions are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. TRB = telecommunications regulatory body.

Some provisions, found in a limited number of RTAs, apply only to appeal proceedings conducted by a non-judicial body, such as an administrative body. For instance, the RTA between Australia and Singapore specifies that during the hearing of appeals PTNS suppliers of the other party, which are party to the appeal, must have a fair and reasonable opportunity to obtain sufficient information to enable them to form informed views on the issues to be determined in the appeal and to provide these views to the administrative authority. The administrative authority is further required to take into account the views provided by the PTNS suppliers of the other party involved in the appeal. A relatively more common provision, found also in the RTA between Australia and Singapore, requires the administrative authority to make available its decision and an explanation of the reasons for its decision. In several agreements, including the RTA between the European Union and Viet Nam, the non-judicial authority is explicitly required to provide reasons for its decision in written form. A complementary provision, found in most of these RTAs, further stipulates that the decisions of the non-judicial appeal body are also subject to review by an impartial and independent judicial authority.[36]

On a more general note, a limited number of agreements, including the RTA between the European Union and Colombia, Ecuador and Peru, stipulate that the decisions adopted by the review or appeal bodies shall be effectively enforced. Some of these agreements, such as the RTA between Central America and Mexico, further specify that the effective enforcement of the decisions taken by the appropriate bodies shall be done in accordance with the applicable legal proceedings.

[36] The RTA between Canada and the European Union is the only notified RTA to explicitly require the judicial, quasi-judicial or administrative authority to provide the written reasons supporting its determination or decision.

4.6 Allocation and use of scarce telecommunications resources

Suppliers of telecommunications services and networks may need specific scarce telecommunications resources, such as radio spectrum, telephone numbers or rights of way, to supply their services. The demand for scarce telecommunications resources, including spectrum is stressed by rapid growth of technologies, such as the internet of things and mobile technologies, particularly mobile broadband. Unreasonable or limited access to these resources can pose an obstacle to market entry and competition.

The Reference Paper establishes a set of principles to ensure an efficient use and effective allocation of scarce telecommunication resources. While most RTAs with detailed provisions on telecommunications services refer to the same principles, an increasing number of RTAs clarify, and in some cases expand, the disciplines regarding (1) the management of scarce telecommunication resources, in particular (2) the access and use of rights of way, and (3) radio spectrum management.[37]

4.6.1 Scarce telecommunication resources management

In the context of limited and scarce telecommunication resources and drawing on the GATS Article VI:5 on impartial, objective and reasonable regulation, the Reference Paper requires the allocation and use of telecommunications resources to be administered in an objective, transparent, timely and non-discriminatory manner.

Reference Paper (Art. 6 Allocation and use of scarce resources)

> *Any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, will be carried out in an objective, timely, transparent and non-discriminatory manner.* […]

While most RTAs with provisions on allocation and use of scarce resources, replicate the Reference Paper obligation of objective, timely, transparent and non-discriminatory procedures, only a couple of agreements have amended such obligation, as highlighted in Figure 22.[38] For instance, the RTA between the European Union and Japan requires the procedures for the allocation and use of scarce resources related to telecommunications to be carried out not only in an open objective, timely, transparent and non-discriminatory manner but also in a non-unduly burdensome manner. Similarly, a couple of RTAs to which the European Union is a party, including with Armenia, specify that the allocation and granting of rights for the use of scarce resources shall also be carried out in a proportionate manner. The agreement with Armenia further requires the procedures on allocation and use of scarce resources to be based on objective, transparent, non-discriminatory and proportionate criteria.

The RTA between Singapore and Turkey is the only notified RTA to explicitly specify that the number of rights of use of scarce resources shall only be limited in case it is necessary for the resources to be used by limited number of operators and for the purpose of providing efficient use of resources. A couple of agreements, including the RTA between Central America, the Dominican Republic and the United States, reiterate (in a footnote) the obligation to ensure that the competent domestic authority in charge of administrating the procedures for the allocation and use of limited resources is separate from, and not accountable to, any TS supplier. Similarly, a few RTAs to which the European Union is a party, including with Ukraine, specify that the assignment of national numbering resources and the management of national numbering plans are entrusted to the regulatory authority.

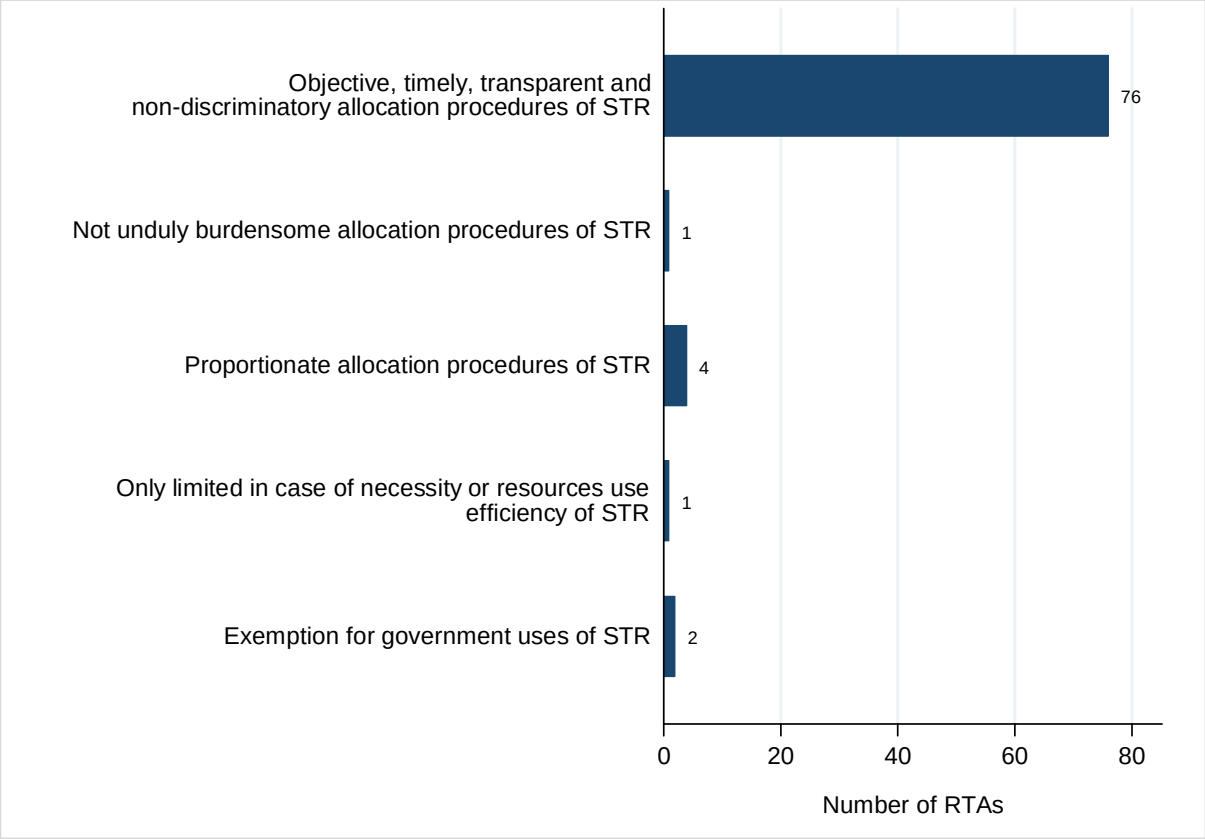
In a couple of RTAs, including the Additional Protocol to the Framework Agreement of the Pacific Alliance, the scope of application of the provision on allocation and use of scarce resources explicitly excludes the allocation procedures for governmental uses. Similarly, and as discussed below,

[37] As discussed in the section on mobile services and equipment, some RTAs also include specific provisions on access to telephone numbers.

[38] Although not referring explicitly to procedures related to the allocation and use of scarce resources, the agreement of the Common Market for Eastern and Southern Africa (COMESA) call on the member states to make rational use of existing telecommunications installations.

provisions on spectrum management do not apply to the allocation and assignment of spectrum for non-government telecommunications services.

Figure 22: Provisions clarifying the procedures related to the allocation and use of scarce telecommunications resources are only found in a couple of RTAs



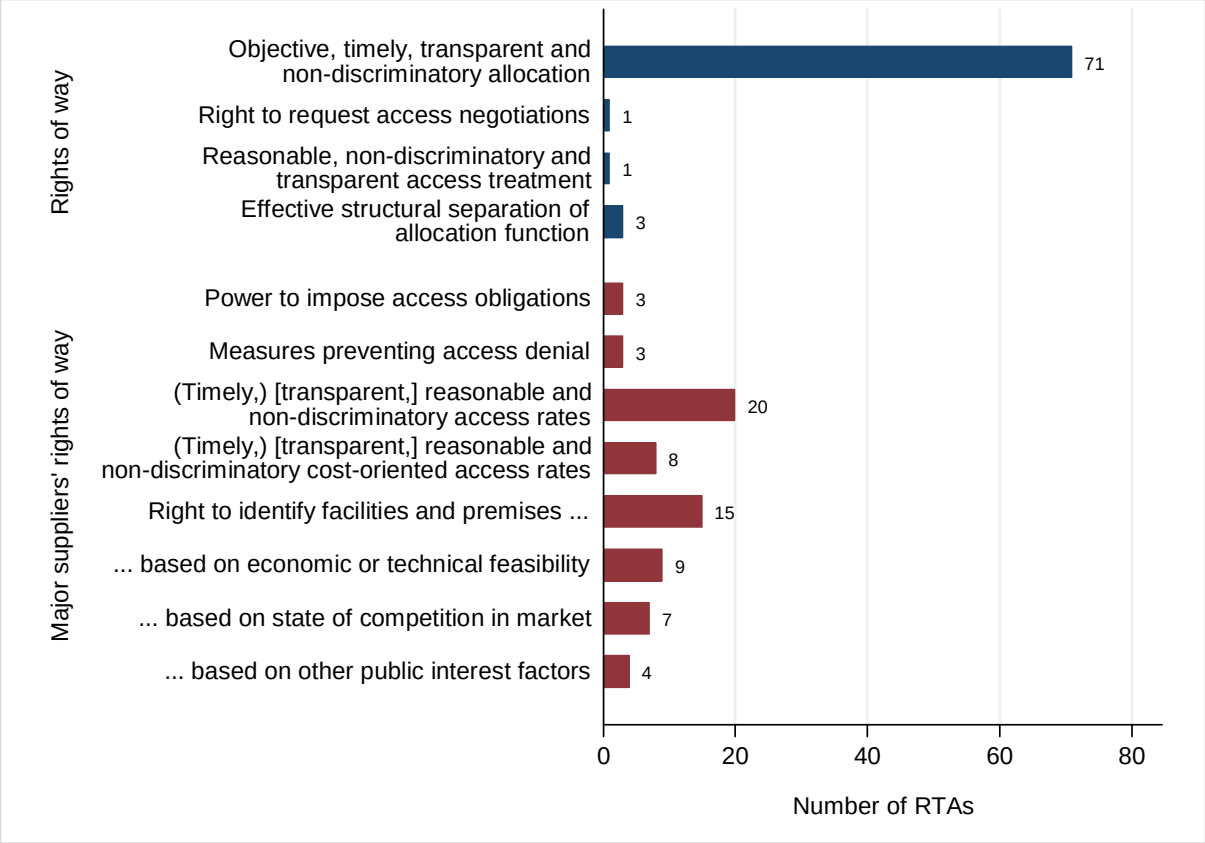
Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. STR = scarce telecommunications resources.

4.6.2 Access to and use of rights of way, poles, ducts and conduits

Rights of way are often used by telecommunications providers to build physical telecommunications network infrastructure, such as deploying cables and placing transmission towers, on lands that they do not own. Agreements to access and use these lands are usually made with the public or private landowners.

As explained above, the Reference Paper requires objective, timely, transparent and non-discriminatory procedures related to the allocation and use of rights of way. While many RTAs with provisions on allocation and use of scarce telecommunications resources replicate this obligation, an increasing number of RTAs clarify and expand the disciplines on access to rights of way. With a few exceptions, most of these provisions apply to rights of way owned or controlled by major suppliers, as highlighted in Figure 23. Most of these provisions refer not only to rights of way, but also to poles, (cable) ducts, masts, conduits, cable tunnels, transmission towers or underground facilities owned or controlled by major suppliers. Moreover, although some of these provisions do not mention the term rights of way, many of these provisions establish an indicative list of facilities owned or controlled by major suppliers by referring to the term "other structures", "other sites", "other facilities" or "network bottleneck facilities".

Figure 23: Provisions clarifying the disciplines on access to rights of way owned or controlled by major suppliers are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

The RTA between Australia and Japan is the only notified RTA to require the parties to ensure, subject to their respective laws and regulations, reasonable, non-discriminatory and transparent treatment with regard to access to conduits, cable tunnels, poles or other facilities, which can be used to establish telecommunications cables and are owned by public utilities, including PTTN owners, to any PTTNS supplier of the other party, when a supplier requests such access.[39] In that context, a couple of RTAs to which the EU is a party, including with Georgia, specify that when public or local authorities retain ownership or control of suppliers operating public communications networks and/or services, effective structural separation needs to be ensured between the function responsible for granting the rights of way from activities associated with ownership or control.[40] This provision complement the other provisions on independence of the telecommunications regulatory authorities discussed above.

The remain provisions on rights of way applied specifically to major suppliers. As discussed above, some provisions require the telecommunications regulatory bodies to have the power to perform explicit specific tasks, including with respect to rights of way. A couple of agreements, including the RTA between the European Union and Ukraine, explicitly specify that regulatory authority has the power to impose on the service supplier designated as having significant market power the obligation to provide co-location or other forms of facility sharing, including cable duct, building or mast sharing. A related provision, but worded differently, found in a couple of agreements, including the RTA between Australia and Chile, require the parties to maintain appropriate measures for the

[39] The 2003 version of the RTA between Australia and Singapore was the only notified RTA to explicitly require the parties to ensure that facilities-based suppliers may install, maintain and have access to their equipment in buildings or on land considered necessary by the party to enable PTS to be supplied to end users who are customers of the facilities-based supplier. This provision was later removed in the subsequent amended versions of the agreement.

[40] A couple of agreements, including the RTA between Australia and Japan, also require providing a clear and detailed explanation of reasons for any decision to deny access to rights of way.

purpose of preventing major suppliers from denying access to poles, ducts, conduits, transmission towers, underground facilities and rights-of-way, or any other structures, owned or controlled by such major suppliers, to PTNS suppliers of the other party in a manner which would constitute anti-competitive practices.

A relatively more common provision, found in several agreements, including the RTA between Colombia and the United States, require the parties to ensure major suppliers in their respective territory afford access to rights of way, poles, ducts and, conduits owned or controlled by such major suppliers to PTS suppliers of the other party on terms and conditions, and at rates, that are reasonable and non-discriminatory. A couple of these agreements, such as the RTA between India and Singapore, further require transparent terms, conditions and rate of access of rights of way owned by major suppliers. Similarly, some agreements, such as the RTA between Australia and the Republic of Korea, require major suppliers to provide access to rights of way and other facilities they owned on a timely basis and on terms and conditions, and at rates, that are reasonable, non-discriminatory and transparent. Likewise, a couple of recent agreements, including the CPTPP, specify that access to rights of way owned by major suppliers shall be provided on a timely basis and on terms and conditions, and at rates, that are reasonable, non-discriminatory, and transparent and subject to technical feasibility. A limited number of agreements, including the RTA between Australia and Japan, explicitly require the rates of access to rights of way owned by major suppliers to be cost-oriented.

These provisions on the terms, conditions and rates of access to rights of way owned or controlled by major suppliers are complemented in several agreements, including the RTA between Canada and the European Union, by another provision clarifying that nothing shall prevent a party from determining, under its domestic law and regulation, which particular structures and premises, including rights of way, owned or controlled by major suppliers in its territory, are required to be made available. Some of the agreements with such provision, such as the RTA between Australia and Hong Kong, China, go into even further detail and specify the factors to take into consideration when making such determination, such as the competitive effect of lack of access to the structures or premises owned or controlled by major suppliers, whether such structures or premises can be substituted in an economically or technically feasible manner in order to provide a competing service, or other specified public interest factors.

4.6.3 Radio spectrum and frequencies management

Radio spectrum is the part of the electromagnetic spectrum that is used by some radio transmission technologies and applications. Given that radio spectrum is a fixed telecommunications resource, which is in demand by an increasing number of users, the generation and transmission of radio waves in the specific frequency range of the radio spectrum are regulated by national laws to prevent interference between different users.

The Reference Paper not only requires, as explained above, an objective, timely, transparent and non-discriminatory allocation and use of radio frequencies but also the publication of the current state of allocated frequency bands. The Reference Paper specifies, however, that this publication obligation does not require to identify in detail the frequencies allocated for specific government uses.

Reference Paper (Art. 6 Allocation and use of scarce resources)

> [...] *The current state of allocated frequency bands will be made publicly available, but detailed identification of frequencies allocated for specific government uses is not required.*

In addition to the disciplines set out in the Reference Paper, discussions on spectrum management held during the negotiations on basic telecommunications have been reflected in the Chairman's Note on Market Access Limitations on Spectrum Availability.[41] The Note stresses that the words "subject to availability of spectrum/frequency", often mentioned in the market access column of telecommunications services schedules, are unnecessary and should be deleted from the schedules because the GATS guarantees the right to exercise spectrum/frequency management provided that

[41] WTO Group on Basic Telecommunications Chairman's Note on Market Access Limitations on Spectrum Availability (S/GBT/W/3).

this is done in accordance with the GATS Article VI on domestic regulations and other relevant provisions of the GATS. The Note further specifies that this includes the ability to allocate frequency bands taking into account existing and future needs. Moreover, the Note concludes that WTO members, which have made additional commitment in line with the Reference Paper on regulatory principles, are bound by its provision on allocation and use of scarce resources.

Most RTAs with provisions on allocation and use of scarce resources replicate the obligation to publish the current state of allocated frequency bands, including the exemption to identify in detail the frequencies allocated for government uses.[42] In parallel, drawing on the Chairman's Note on Market Access Limitations on Spectrum Availability, an increasing number of agreements incorporate different provisions related to the allocation and management of spectrum resources, as shown in Figure 24.[43]

Several agreements, including the RTA between the European Union and Viet Nam, stipulate that the parties retain the right to allocate frequency bands in a manner that takes into account existing and future needs. Most of these agreements, including the RTA between Canada and Peru, further add that such right include the ability to allocate frequency bands taking into account spectrum availability. In that context, a couple of RTAs to which the European Union is a party, including with Ukraine, requires the parties to ensure the effective management of radio frequencies for telecommunications services in their territory with a view to ensuring effective and efficient use of the spectrum. These agreements further specify that when demand for specific frequencies exceeds their availability, appropriate and transparent procedures shall be followed for the assignment of those frequencies in order to optimise their use and facilitate the development of competition.

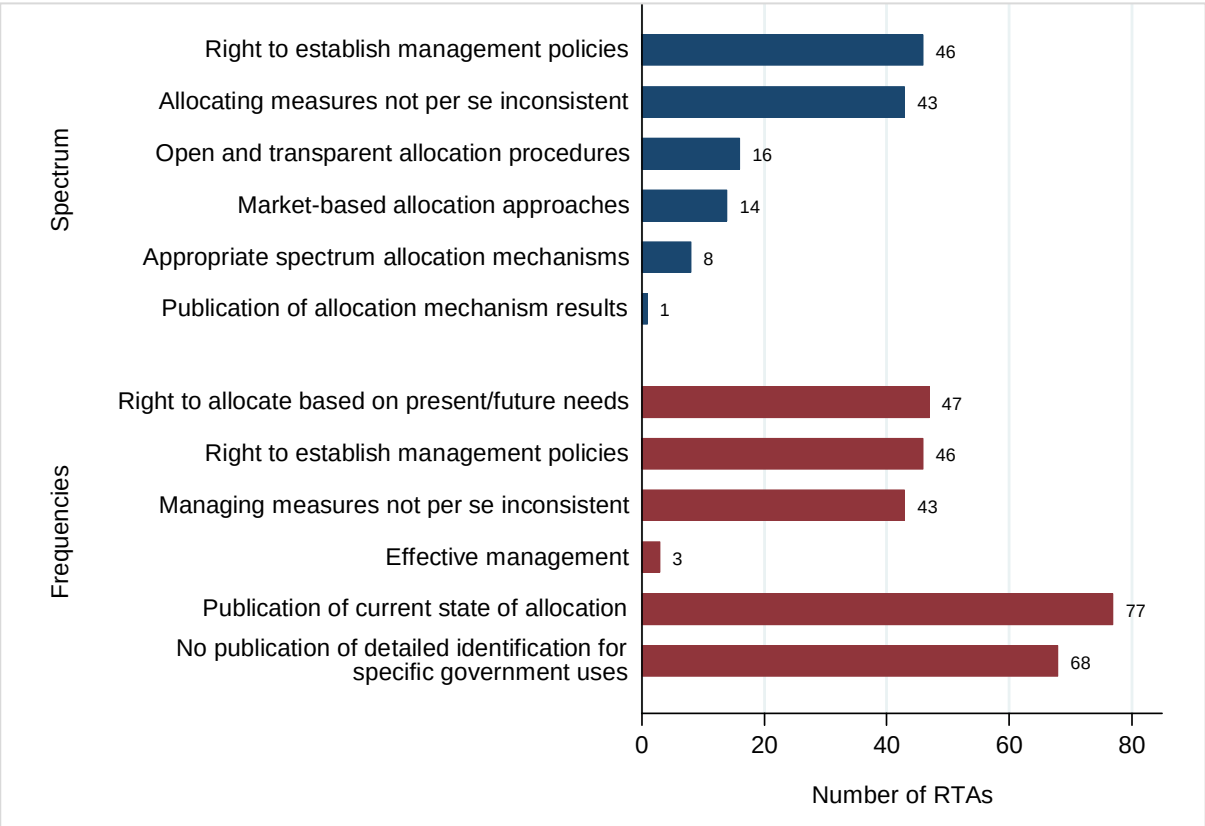
A relatively common provision, often complementary to the provision on the right to allocate frequency bands, confirms that measures allocating and assigning spectrum and managing frequency are not measures that are *per se* inconsistent with the article on market access as it applies to cross-border trade in services, and, in some agreements, as it applies to an investor or covered investment of the other party. A related provision found in many of these agreements, including the RTA between Canada and Panama, specifies that each party retains the right to establish and apply spectrum and frequency management policies that have the effect of limiting the number of PT(T)NS suppliers. Many of the RTAs with such provision, including the RTA between Japan and Mongolia, further add that each party retains such right provided the effect of limiting the number of PT(T)NS supplier is done in a manner consistent with other provisions of the RTA.

Several other provisions address the way to allocate and manage spectrum for commercial use. Several agreements, including the RTA between Canada and Peru, call on the parties to rely on an open and transparent spectrum allocation process for commercial telecommunications services that considers the public interest, including the promotion of competition. In that context, a limited number of agreements, including the RTA between Canada and Colombia, call on the parties to rely generally on market-based approaches in assigning spectrum for terrestrial non-government telecommunications services. A related but more specific provision found in relatively recent RTAs, including the CPTPP, confirm that the parties have the authority to use appropriate mechanisms, including auctions, to assign spectrum for commercial use. A few agreements with such provision, including the RTA between the Republic of Korea and the United States, list administrative incentive pricing or unlicensed use as other potential appropriate mechanismS to assign spectrum for commercial use. Similarly, a couple of agreements, including the RTA between Australia and Hong Kong, China, also mention tenders as another potential appropriate assignment mechanism. The RTA between Australia and Hong Kong, China, is also the only notified RTA to explicitly require make publicly available the results of the appropriate mechanisms for assigning spectrum for commercial use.

[42] The RTA between Armenia and the European Union is the only notified agreement to explicitly mention "radio spectrum" (instead of the word "frequencies") as part of the scarce resources subject to open, objective, timely, transparent, non-discriminatory and proportionate allocation procedures.

[43] The agreement establishing the Eurasian Economic Union (EAEU) includes idiosyncratic provisions on spectrum management. For instance, the agreement requires the issuance of permits for the use of radio spectrum to be carried out in the procedure determined by the legislation of the respective member states. The agreement further specifies that all fees related to the allocation and use of radio spectrum shall be charged in the procedure and amount determined by the legislation of the member states.

Figure 24: Provisions on radio spectrum and frequency management are included in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

4.7 Universal service obligations

Universal service obligations provide a safety net of services for portions of the population for which there are insufficient commercial incentives, such as those in low income, rural and remote areas. It may involve compensation schemes, such as dedicated funds. In the past it was generally provided via cross-subsidization by a monopoly operator.

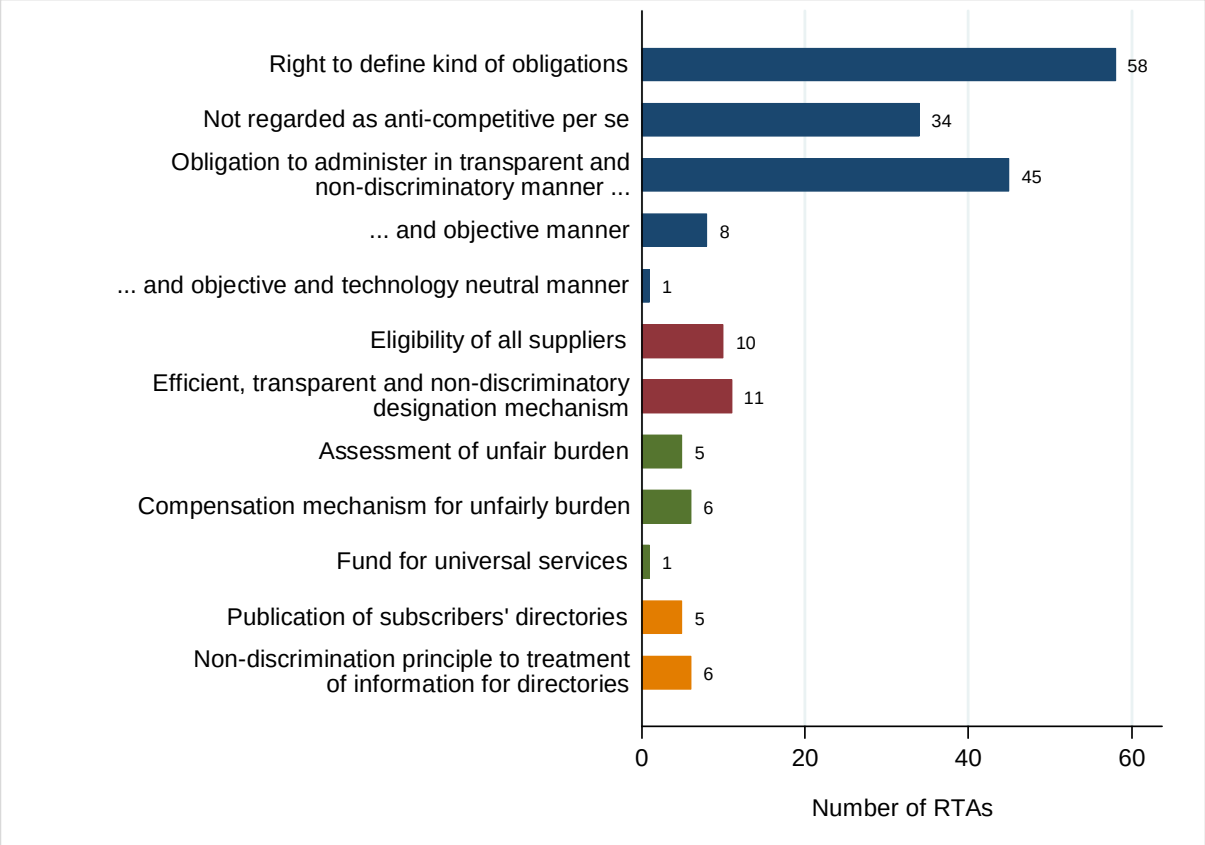
The Reference Paper establishes a framework for the administration of universal service obligations that is better adapted to a competitive market by ensuring competition is not distorted. In particular, the Reference Paper guarantees the governments' right to determine the type of universal service obligations to be met. The Reference Paper further specifies the conditions under which these universal service obligations are not considered as anti-competitive *per se*, namely a transparent, non-discriminatory, competitively neutral and not more burdensome than necessary administration of these obligations.

Reference Paper (Art. 3 Universal service)

Any Member has the right to define the kind of universal service obligation it wishes to maintain. Such obligations will not be regarded as anti-competitive per se, provided they are administered in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of universal service defined by the Member.

While most RTAs with provisions on telecommunications services, namely 79 agreements, include most of the Reference Paper provisions on universal service obligations, an increasing number of RTAs clarify or expand some of these disciplines, as highlighted in Figure 25.

Figure 25: Provisions clarifying and expanding the disciplines on universal service obligations are included in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

In particular, many agreements, including the RTA between Japan and Singapore, replicate the governments' right to define the kind of universal service obligations they wish to establish or maintain, as set out in the Reference Paper. Similarly, several RTAs replicate the provision of the Reference Paper specifying the conditions under which these universal service obligations are not considered as anti-competitive *per se*. A related provision, but worded differently, found in a larger number of agreements, including the RTA between Canada and Honduras, goes further and explicitly requires the parties to administer the universal services obligations in a transparent, non-discriminatory, and competitively neutral manner, and to ensure that these obligations are not more burdensome than necessary.[44]

Several of these agreements add additional conditions. Some agreements, including the RTA between Singapore and Turkey, require the administration of these universal services obligations to also be objective. Likewise, the RTA between Armenia and the European Union is the only notified agreement to specify that universal service obligations administered in a proportionate, transparent, objective and non-discriminatory way is not regarded *per se* as anti-competitive. The RTA between Montenegro and Ukraine is also the only notified agreement to stipulate that measures governing universal service shall be technologically neutral in addition to transparent, objective, non-discriminatory, neutral with respect to competition and not be more burdensome than necessary.
Several agreements, including the RTA between the European Union and Japan, specify that all TS suppliers should be eligible to provide universal service. In that context, a limited number of RTAs with provisions on universal service obligations (mostly negotiated by the European Union) also detail approaches to select and compensate universal services suppliers.

[44] The agreement establishing the Eurasian Economic Union (EAEU) is the only notified RTA to stipulate that the member states shall ensure the provision of universal telecommunications services on their territories on the basis of common principles and rules determined by recommendations of international organisations.

Some agreements, including the RTA between Canada and the European Union, require the designation of suppliers of universal service to be made through an efficient, transparent and non-discriminatory mechanism. A couple of agreements to which the European Union is a party, including with Ukraine, further require the mechanism for eligibility designation to also be objective. Similarly, the RTA between the European Union and Japan requires the transparent and non-discriminatory mechanism for eligibility designation to not be unduly burdensome.

A complementary provision, found in a few agreements, including the RTA between the European Union and Georgia, commits the parties to assess, where necessary, whether the provision of universal service represents an unfair burden on a supplier designated to provide universal service. A related provision, found in a couple of agreements, including the RTA between the European Union and Ukraine, further specify that when justified on the basis of such assessment, and taking into account the market benefit which accrues to a supplier that offers universal service, the regulatory authorities shall determine whether a mechanism is required to compensate the supplier concerned or to share the net cost of universal service obligations. In that context, the RTA between Singapore and Turkey is the only notified agreement to specify that any fund set up for the purposes of universal services shall be used in accordance with the relevant legislation of the party.

Several RTAs to which the European Union is a party include additional provisions on universal services that apply to fixed telephone services. In particular, several agreements, including between the European Union and Central America, require directories of all fixed telephony subscribers to be available to users in accordance with the parties' respective legislation. A related provision further requires the suppliers of telecommunications services that provide directories of subscribers to apply the principle of non-discrimination to the treatment of information that has been provided to them by other suppliers of such telecommunications services.

4.8 Licenses and other authorizations

Operating telecommunications facilities and providing telecommunications services may require an authorization. A telecommunication licence typically defines the terms and conditions of such authorization. Both the GATS Annex and the Reference Paper explicitly cover licensing through transparency provisions.
A large number of RTAs with comprehensive provisions on telecommunications services, namely 102 agreements, include specific provisions on licensing of PT(T)NS suppliers. While most of these provisions refer explicitly to licence, some of them also refer to concession, permit, registration or other type of authorization. Many of these RTAs replicate or modify with few changes some of the transparency provisions on licensing set out in the GATS Annex and the Reference Paper. However, a limited but increasing number of RTAs clarify or expand the disciplines related to (1) the design and implementation of licensing application procedures and (2) the transparency of licensing criteria and procedures.

4.8.1 Design and implementation of licensing application procedures

Although the GATS Annex and the Reference Paper are silent on the explicit way to design and implement telecommunication licensing procedures, the GATS establishes specific provisions on domestic regulation, including licenses and other authorizations. A limited but increasing number of agreements, namely 35 RTAs, include explicit provisions on the way to design and implement licensing application procedures, including with respect to application costs and fees and length of the decision-making process.[45] Many of these provisions on licensing draw on the language from the GATS and are often found in a single or couple of RTAs, as highlighted in Figure 26.

Some provisions, found in a limited number of agreements, apply to application fees and related administration costs. For instance, the RTA between the European Union and the Republic of Korea

[45] As explained above, many RTAs include provisions establishing a framework for the allocation and use of scarce telecommunications resources, including frequencies, numbers and rights of way. In that context, some of these agreements, including the RTA between the European Union and Ukraine, specify that, where necessary, a licence can be required to address issues of attributions of numbers and frequencies. More generally, the agreement establishing the Eurasian Economic Union (EAEU) is the only notified RTA to explicitly require all activities related to the provision of telecommunications services to be conducted on the basis of licenses issued by authorised authorities.

requires licence fees to be imposed and applied in a non-discriminatory manner upon the entry into force of the agreement. Similarly, the RTA to which the European Union is a party with Singapore and Viet Nam recommend or require, respectively, the application fees incurred by the applicant to be reasonable and to not in themselves restrict the supply of the service.

Other provisions on fees are not covered by the GATS disciplines on domestic regulation. A few agreements, including the RTA between the European Union and Ukraine, require the licence fees to not exceed the administrative costs normally incurred in the management, control and enforcement of the applicable authorisation. Worded differently, the RTA between the European Union and Japan stipulates that any administrative fees shall be objective, transparent and commensurate with the administrative costs of the regulatory authority.[46] Some agreements with such provisions further specify that licensing or authorisation fees do not include payments for auction, tendering or other non-discriminatory means of awarding concessions, or mandated contributions to universal service provision.

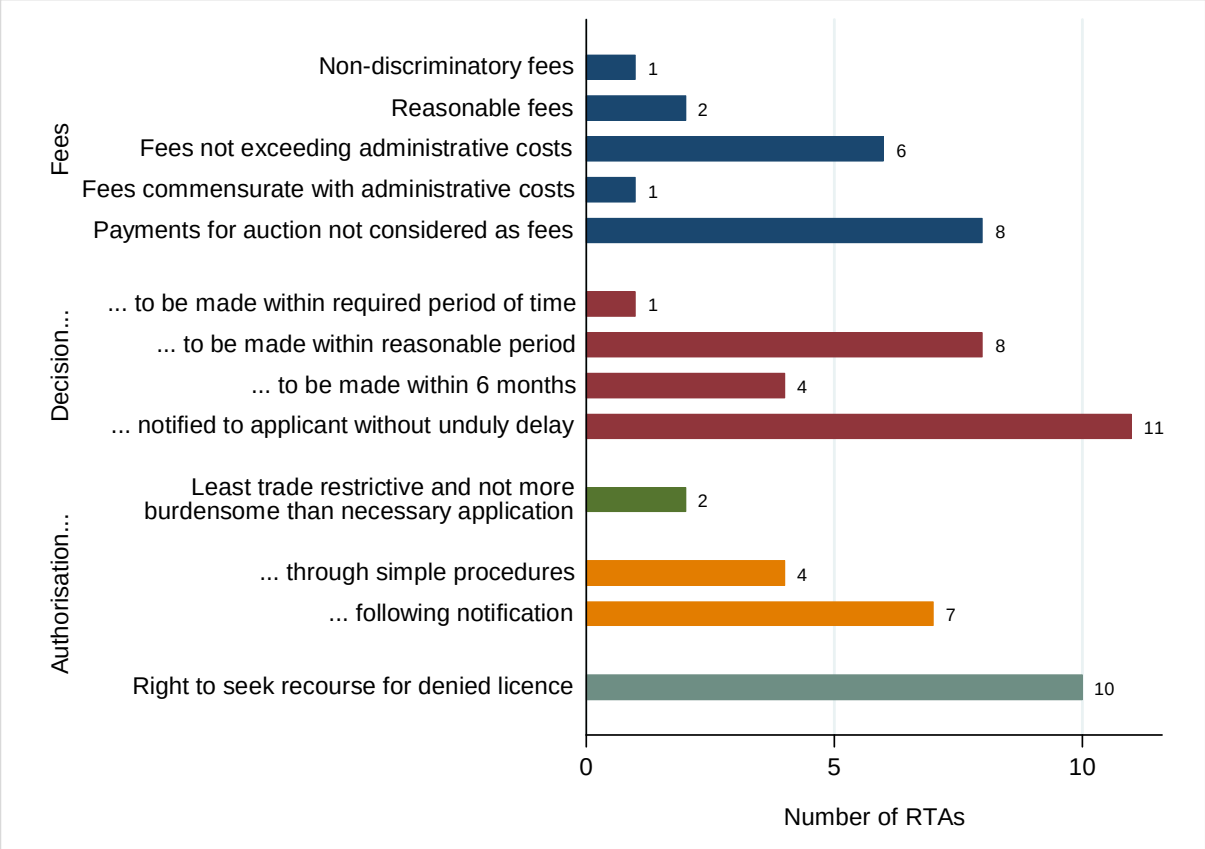
Some provisions address the length of the decision-making process. As discussed below, the Reference Paper refers to the time normally required to reach a decision regarding licence application. In the context of transparency, several GATS provisions refer to a reasonable period of time. The GATS Article III requires governments to make public measures of general application within a reasonable period of time. The GATS Article VI:3 also requires governments to inform applicants of the decision on their licence application within a reasonable period of time. Some RTAs apply the notion of reasonable period of time to the making-decision process. For instance, the RTA between Canada and Colombia stipulates that the parties shall make the decision on the application for a license, concession, permit, registration or other type of authorization within a reasonable period of time. A more specific provision, found in a couple of agreements, including the RTA between the European Free Trade Association states and Georgia, establish a maximum period of six months to reach a decision if the applicable conditions are fulfilled and the licences are not related to the use of frequency spectrum. A related provision, found in a few agreements, including the RTA between Japan and Peru, require the parties to notify the applicant of the outcome of its application without undue delay after a decision has been taken.

Drawing on the GATS disciplines, a few provisions explicitly address the way to implement the licensing requirements. In particular, the GATS Article VI:4 calls on members, pending the development of more detailed disciplines, to ensure that licensing procedures are not more burdensome than necessary and do not, in themselves, restrict the supply of a service. The RTAs to which Australia is a party with Chile and China require the parties to ensure that licensing requirements for suppliers of telecommunications networks or services of the other party are applied in the least trade restrictive manner and are not more burdensome than necessary. In that context, some provisions, found in a few RTAs to which the European Union is a party, aim at streamlining licensing and other authorization procedures. For instance, the RTA between the European Union and the Republic of Korea stipulates that the provision of telecommunications services shall, to the extent practicable, be authorised following a simplified authorisation procedure. A related provision, found in a few agreements, including the RTA between Canada and the European Union, call on or require the parties to ensure that the authorisation to supply telecommunications services, wherever possible, is based upon a simple notification procedure.

As discussed above, an increasing number of RTAs include provisions on dispute resolution mechanisms guaranteeing, among others, the right of PT(T)NS suppliers to request the regulatory authorities to reconsider their decisions and to appeal the decisions of the regulatory authorities. A few agreements, mostly negotiated by the European Union, include a specific provision guaranteeing the right of applicants to seek recourse against the rejection of their licence request. In particular, several agreements, including the RTA between the European Union and Viet Nam, specify that the applicant for a licence shall be able to seek recourse before an appeal body in case a licence has been denied. Some agreements with such provision, including the RTA between the European Union and Georgia, refer to the right to seek recourse to a domestic appeal body in the case where a licence has been *unduly* denied.

[46] Ongoing WTO discussions on services have had such a provision under consideration for some time.

Figure 26: Provisions on the design and implementation of licensing procedures are found in a limited number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

4.8.2 Transparency of licensing criteria and procedures

As discussed in the next subsection, transparency of domestic regulation is key to contribute to a predictable trading environment. The GATS Annex requires the transparency of relevant information on the conditions affecting access to and use of PTTNS, including notifications, registration and licensing requirements. Similarly, the Reference Paper requires the publication of the licensing application procedures for suppliers of basic telecommunications services, in particular the period of time and the criteria used to reach a decision, the terms and conditions of the licence, and the reasons for rejecting the licence request.

Reference Paper (Art. 4 Public availability of licensing criteria)

Where a licence is required, the following will be made publicly available:

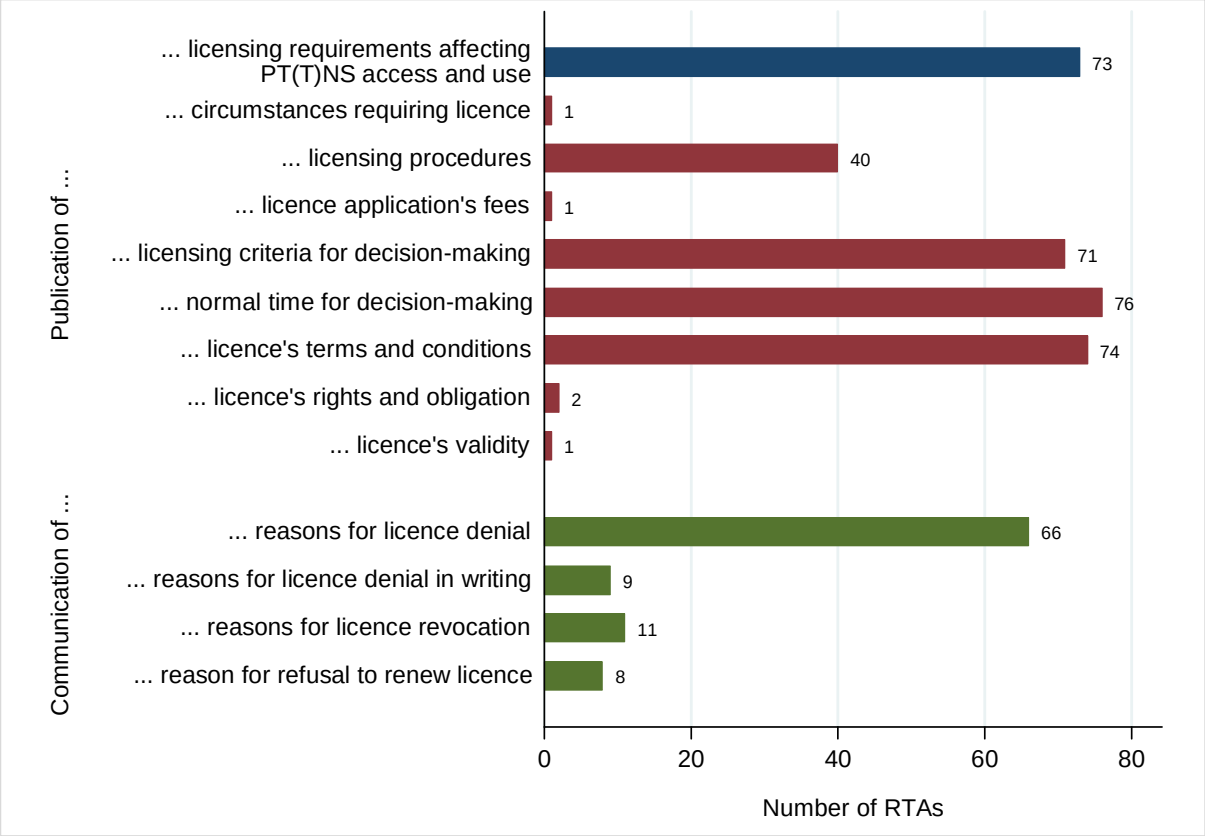
(a) *all the licensing criteria and the period of time normally required to reach a decision concerning an application for a licence and*

(b) *the terms and conditions of individual licences.*

The reasons for the denial of a licence will be made known to the applicant upon request.

Although most RTAs with detailed provisions on telecommunications services replicate or slightly modify the transparency provisions on licensing set out in the GATS Annex and the Reference Paper, an increasing number of agreements expand the transparency disciplines related to licensing of PT(T)NS suppliers. As highlighted in Figure 27, many agreements, including the RTA between Australia and Malaysia, not only require the publication of all criteria used to assess the licence applications but also the publication of all licensing application procedures. Some of these agreements, such as the RTA between Canada and Colombia, refer specifically to all *applicable* licensing or authorization criteria and procedures.

Figure 27: Provisions expanding the transparency disciplines on licensing are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Other transparency provisions on licensing are found in a couple of agreements. The RTA between the Association of Southeast Asian Nations (ASEAN), Australia and New Zealand is the only notified agreement to detail the type of information to be published, including the circumstances requiring a licence, the cost for applying for and obtaining a licence, and the period of validity of a licence. Similarly, the RTAs to which the European Union is a party with Armenia and Japan are the only notified agreement to explicitly require the publication, in an easily accessible form, of the rights and obligations resulting from an authorisation.

Although most RTAs with transparency provisions on licensing replicate the obligation to inform, upon request, applicants on the reasons for refusing to grant a licence, a limited but increasing number of agreements add clarification to this transparency obligation. In particular, some agreements, such as the RTA between the European Union and Singapore, require that, when requested, reasons for the denial of a licence shall be made known *in writing*. While the obligation to inform applicants typically refers only to cases of licence denial, some agreements, such as the RTA between the European Union and Japan, extend the obligation to decisions taken to revoke a license. Similarly, several agreements, including the RTA between Australia and Hong Kong, China extend the obligation to inform applicants of the reasons for any imposition of supplier-specific conditions on a licence, revocation of a licence, and refusal to renew of a licence.

4.9 Transparency of conditions on access to and use of PTTNS

Transparency is an essential pillar in improving market access for both domestic and foreign suppliers The GATS Annex requires the publication of any information on the conditions affecting access to and use of PTTNS and provides an illustrative list of relevant information, including information related to tariffs, technical interface specifications, relevant standard-setting bodies and conditions applying to attachment of terminal. However, the GATS Annex does not prescribe the

way in which the transparency provisions have to be implemented. Whether transparency relates to measures by or information in the hands of regulators, or to information that regulators must ensure that suppliers of PTTNS make public, depends on the type of information concerned and on national practice. Many governments require suppliers of PTTNS to provide the government with information about conditions affecting the use and access to PTTNS, who, in turn, make it public. Other governments require suppliers of PTTNS to make this information publicly available themselves.

The transparency disciplines set out in the GATS Annex complement the transparency provisions included in the GATS Article III, which apply only to government measures.

Annex (Art. 4 Transparency)

In the application of Article III of the Agreement, each Member shall ensure that relevant information on conditions affecting access to and use of public telecommunications transport networks and services is publicly available, including: tariffs and other terms and conditions of service; specifications of technical interfaces with such networks and services; information on bodies responsible for the preparation and adoption of standards affecting such access and use; conditions applying to attachment of terminal or other equipment; and notifications, registration or licensing requirements, if any.

While most RTAs with detailed provisions on telecommunications services, namely 83 agreements, replicate or modify slightly most of the provisions on transparency of conditions on access to and use of PT(T)NS set out in the GATS Annex, an increasing number of RTAs clarify or expand some of these disciplines, as highlighted in Figure 27. These transparency provisions complement other specific transparency provisions on telecommunications services found in the chapter, section or annex on telecommunications services, as well as the transparency provisions found in the chapter on cross-border trade in services and those found in a stand-alone chapter on transparency in an increasing number of RTAs.

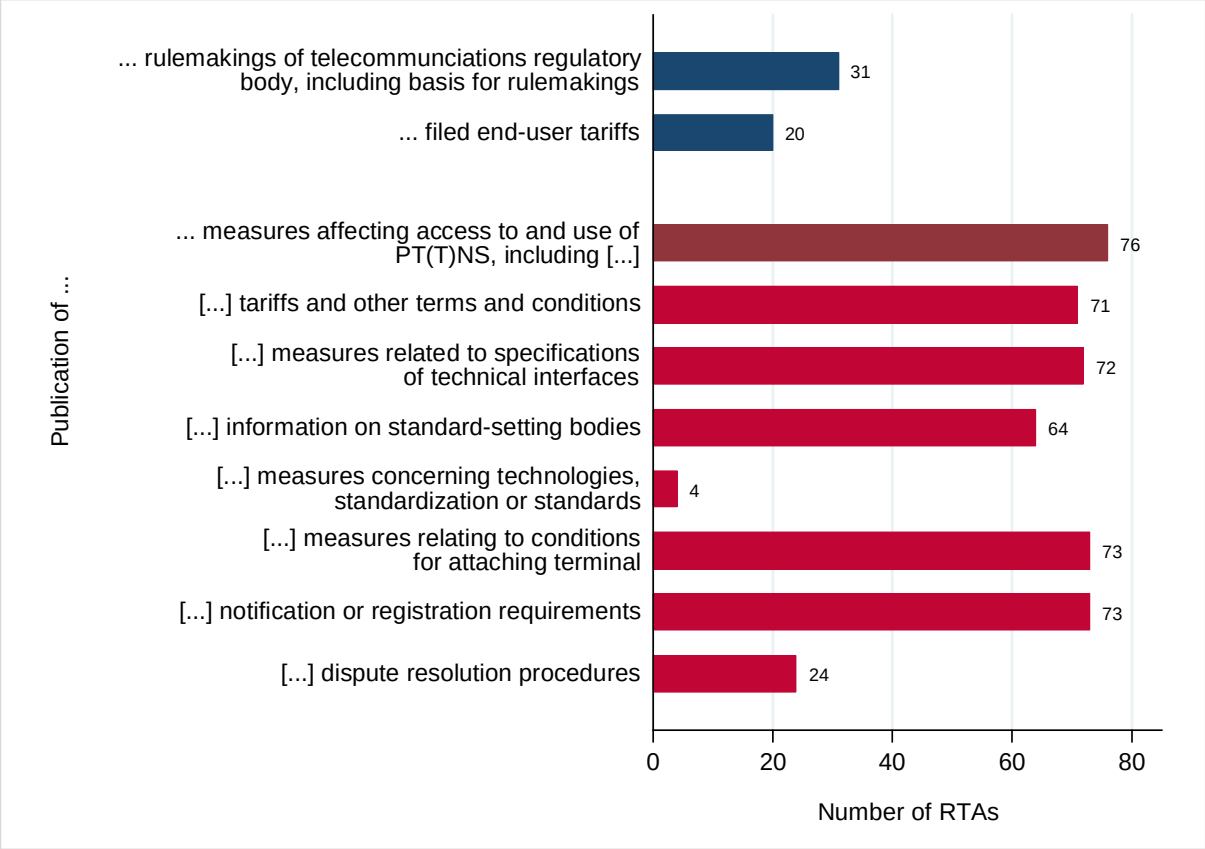
While most transparency provisions apply to measures relating to PTTNS, other transparency provisions found in some agreements, such as the RTA between Canada and Honduras and the CPTPP, require the publication of measures relating to PTNS or PTS, respectively. A couple of agreements, including the RTA between Canada and Panama, extend the scope of the transparency obligations to measures related to value-added services.

Some RTAs modify slightly some of the information on the conditions affecting the access to and use of PT(T)NS that must be made publicly available. For instance, the transparency provision related to information on bodies responsible for the preparation and adoption of standards affecting the access to and use of PT(T)NS, found in some agreements, such as the RTA between India and the Republic of Korea, refers also to bodies responsible for amending standards. Similarly, some provisions found in some agreements, such as the RTA between Canada and Peru, do not refer to information on bodies responsible for standards but bodies responsible for standards-related measures. Likewise, a couple of RTAs, such as the RTA between China and the Republic of Korea, have replaced the transparency obligation regarding information on standard-setting bodies with the obligation to publish the amendment and adoption of measures concerning technologies or standards affecting the access to and use of PTNS.

A limited but increasing number of agreements, including the RTA between Australia and Singapore, have expanded the illustrative list of information on conditions affecting the access to and use of PT(T)NS to include the publication of general procedures relating to resolution of telecommunications disputes provided and covered in the RTA. As discussed above, an increasing number of RTAs incorporate provisions related to the recourse, reconsideration and appeal of the decisions made by the telecommunications regulatory authorities. In that context, several agreements, including the RTA between Panama and the United States, refers explicitly to the obligation to publish procedures relating to judicial or other adjudicatory review proceedings.

Given the cross-cutting dimension of transparency, many of the issues related to PT(T)NS and discussed in the previous subsections are also subject and covered by specific transparency provisions in some RTAs. For instance, some provisions on independence of telecommunications regulatory bodies require the decisions of and the procedures used by the regulatory authorities to be transparent. Similarly, some provisions require the publication of the functions and responsibilities of the telecommunication regulatory bodies, in particular where the functions and responsibilities are assigned to more than one body.

Figure 28: A limited but increasing number of RTAs clarify and expand the provisions on transparency of conditions on access to and use of PT(T)NS



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

A limited but increasing number of RTAs include transparency obligations whose scope goes beyond measures affecting access to and use of PT(T)NS. As explained above, a couple of RTAs require the publication of measures relating to PT(T)NS and, where applicable, value-added services. More generally, some agreements, including the RTA between Colombia and Costa Rica, require each party to publish the rulemakings, including the basis for such rulemakings, of its telecommunications regulatory body. Most agreements with such provision, including the RTA between Colombia and the United States further require the publication of such rulemakings and reasons to be prompt. This transparency provision on the rulemakings of telecommunications regulatory bodies is often complemented by another provision requiring the publication of the end-user tariffs filed with the telecommunications regulatory authorities.

While the GATS, nor its Annex or the Reference Paper require governments to offer services suppliers the opportunity to comment on draft regulations, most RTAs with transparency provisions on rulemakings draw on the notice and comment provisions of the TBT agreement and require prior publication and the opportunity to comment on proposed rulemakings of the telecommunications regulatory bodies. Some agreements, including the RTA between Australia and Singapore, require the parties to provide PTNS suppliers of the other party, who are likely to be affected by regulatory decisions, with a fair and reasonable opportunity to obtain sufficient information to enable them to form informed views on proposed regulatory decisions and to provide these views to the regulators. Worded differently, many other agreements, including the RTA between Singapore and the United States compel the parties to ensure that interested persons are provided with adequate advance public notice of and the opportunity to comment on any rulemaking proposed by the telecommunications regulatory body. A few of these agreements, including the CPTPP, further require the parties' respective telecommunications regulatory body to make publicly available, to the extent practicable, all relevant comments submitted and filed. The CPTPP and a few other agreements also require the telecommunications regulatory bodies to respond to all significant and relevant issues raised in comments filed, in the course of issuance of the final regulation.

4.10 Standards, technical regulations and conformity assessment procedures

Although most provisions set out in the GATS Annex apply specifically to telecommunications services, some provisions refer and apply to products and equipment needed to provide access to and use of PTTNS. As discussed above, the GATS Annex specifies that access to and use of PTTNS may be conditioned by requirements to use specified technical interfaces, to specify the type approval of terminal interfacing with the PTTN or to ensure inter-operability of PTTS. In that context, the GATS Annex recognizes the importance of international standards for global compatibility and inter-operability of telecommunication networks and services. The Annex further requires WTO members to undertake to promote international standards for global compatibility and inter-operability through the work of relevant international bodies, including the International Telecommunication Union (ITU) and the International Organization for Standardization (ISO).

Annex (Art. 7 Relation to international organizations and agreements)

(*a*) *Members recognize the importance of international standards for global compatibility and inter-operability of telecommunication networks and services and undertake to promote such standards through the work of relevant international bodies, including ITU and ISO.*

These provisions on standards and technical requirements complement the provisions set out in the WTO TBT Agreement which aims to ensure that technical regulations, standards, and conformity assessment procedures (CAPs) of products are non-discriminatory and do not create unnecessary obstacles to trade. The TBT Agreement further encourages WTO members to base their technical regulations, standards, and CAPs on relevant international standards as a means to facilitate trade. As discussed above, the TBT Agreement also establishes several transparency disciplines, including the obligation to notify draft technical regulations and CAPs and to provide reasonable opportunity to other interested parties to comment on these proposed technical regulations and CAPs.

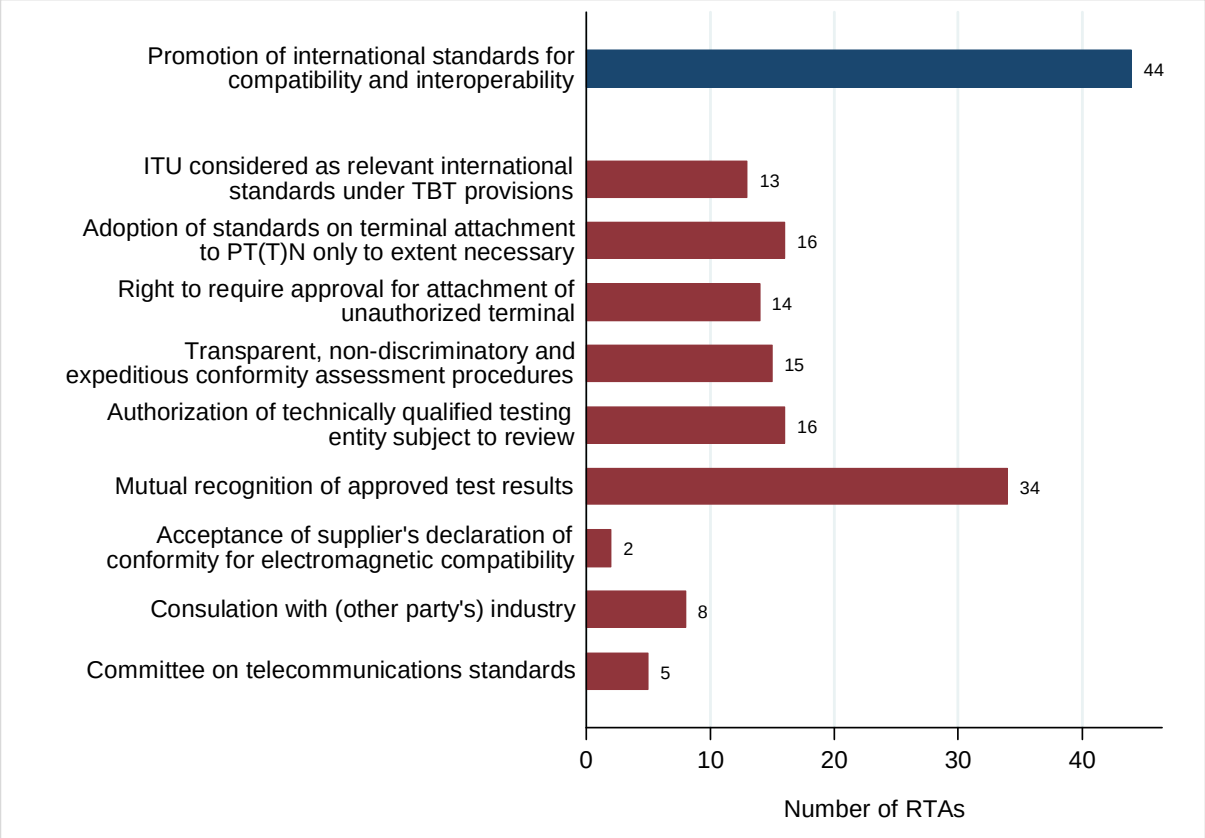
An increasing number of agreements, namely 68 RTAs, include explicit provisions on standards, technical regulations and CAPs related to PT(T)N and more generally telecommunications equipment. While some of these provisions are found in the chapter, section or annex on telecommunications services, other explicit provisions are found in the chapter on TBT or in sectoral TBT-related annexes. Some of these provisions on standards, technical regulations and CAPs are found in a limited number of agreements, as highlighted in Figure 29.

Some of the provisions on standards, technical regulations and CAPs, replicate or modify slightly the GATS Annex provision promoting international standards for global compatibility and inter-operability of telecommunication networks and services through the work of relevant international bodies, such as ITU and ISO. A couple of agreements, including the RTA between Panama and Central America, further add the Inter-American Telecommunications Commission to the list of relevant international bodies.[47]

In this context, a limited number of agreements, including the RTA between the European Union and Singapore, clarify existing TBT disciplines and explicitly recognize ITU and ISO, and in some agreements the International Electrotechnical Commission, as relevant international standard-setting bodies under the chapter on TBT. Technical regulations based on such relevant international standards are rebuttably presumed not to create unnecessary obstacles to international trade. Under the TBT Agreement, compliance with technical regulations is mandatory, while conformity with standards is voluntary. The RTA between Australia and Malaysia is the only notified agreement to explicitly compel each party to ensure that its service suppliers comply with a standard formulated by the industry when the service suppliers have agreed to do so; or when the regulator has approved and implemented the standard as an enforceable measure.

[47] The RTA between Colombia and Mexico is the only notified agreement to require the establishment of mechanisms to apply regional standards related to technological development occurring in one of or both parties.

Figure 29: Provisions on standards-related measures relating to ICT equipment products are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Other provisions on standards tend to cover specific issues. As discussed in section 4.2.1, detailed provisions on standards-related measures relating to the attachment of terminal or other equipment to PT(T)N, including with respect to the use of testing and measuring equipment for CAPs, are found in a limited number of agreements, including the RTA between Canada and Chile. A relatively common provision limits the adoption and maintenance of such standards-related measures only to the extent necessary to prevent technical damage, interference or billing malfunction and to ensure compatibility, users' safety and access.

Drawing on Article 5 of the TBT Agreement, other provisions address CAPs related to telecommunications equipment. A relatively common provision in agreements with provisions on standards related to telecommunications, such as the RTA between Chile and Central America, requires CAPs relating to the attachment of terminal or other equipment to PT(T)N to be transparent, non-discriminatory and processed expeditiously. In this context, a related provision compel the parties to guarantee that any technically qualified entity can perform testing procedures required under the CAPs for terminal or other equipment to be attached to PT(T)N, subject to each party's right to review the accuracy and completeness of the test results. The parties are also compelled to ensure that any measure, requiring an authorized to act as agents for telecommunications equipment suppliers, is non-discriminatory.

Various other provisions draw on Article 6 of the TBT Agreement and specifically cover the mutual recognition of CAPs relating to telecommunications equipment. Some of these provisions, found in a couple of agreements, including the RTA between Australia and Peru, define the term "mutual recognition agreement" and clarify that mutual recognition agreements include agreements to implement the Asia-Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment (TELMRA) and the Electrical and Electronic Equipment Mutual Recognition Arrangement (EEMRA). In this context, a couple of agreements, including the RTA between Singapore and the United States, explicitly commit the parties to take steps to implement the APEC TELMRA.

A relatively common provision found in agreements with provisions on standards related to telecommunications, including the RTA between Panama and Central America, requires each party to adopt, when the condition allows it, CAPs to accept the test results from laboratories or testing facilities of the other party in accordance with the accepting party's standards-related measures and procedures relating to the attachment of terminal or other equipment to PT(T)N. A similar provision found in a couple of agreements, including the RTA between Mexico and Uruguay, goes further and requires the adoption of mutual recognition procedures of these test results within one year of the entry into force of the RTA.

Other provisions on CAPs relating to telecommunications equipment are only found in a couple of agreements. For instance, the CPTPP and USMCA require the parties to accept a supplier's declaration of conformity that information technology equipment meets a standard or technical regulation for electromagnetic compatibility provided that such a declaration satisfies a party's testing requirements. Both RTAs also prohibit a party from adopting a technical regulation or CAP that require a manufacturer or supplier of a commercial product that uses encryption to transfer a decryption key to the party or integrate a particular encryption in the product as a condition for conducting business in the territory. This obligation, however, does not apply to government production, sale, or use of a product that uses encryption. In addition, this obligation does not preclude law enforcement authorities from requesting unencrypted communications.

Different provisions promoting industry participation in the development of telecommunications policy, regulations and standards are found in a limited number of RTAs. The RTA between the European Free Trade Association states and Singapore is the only notified agreement to explicitly require the consultation with the telecommunications industry to determine which technical standards should be made mandatory.[48] Similarly, the RTA between the European Free Trade Association states and the Philippines is the only notified agreement to require the creation of a national consultative forum to allow interaction among the telecommunications industries, user groups, and academic and research institutions on important issues in the field of communications. Another related provision found in several agreements, including the RTA between Australia and Chile, compels each party to facilitate consultation with PTNS suppliers of the other party operating in its territory in the development of telecommunications policy, regulations and standards in a manner that is open to any participant in the telecommunications industry in the territory of that party. A couple of agreements with such provision, such as the RTA between Australia and Singapore, refer to industry consultation through any forum or other mechanism considered appropriate. These same agreements further require the parties to encourage PTNS suppliers of the other party operating in their respective territory to provide feedback to the telecommunications regulatory body on the regulation of the telecommunications industry.

As discussed below, a few agreements have established specific institutional arrangements to oversee the implementation of the chapter on telecommunications services. In parallel, a few agreements with detailed provisions on standards-related measures to which Chile or Mexico are a party, have established a committee or subcommittee on telecommunications standards comprising representatives of each party. Some of these agreements with such provision, including the RTA between Canada and Chile, further specify the functions of the (sub)committee on telecommunications standards, namely (1) developing a work programme, including a timetable, for making compatible to the greatest extent possible, the standards-related measures of the parties for authorized equipment; (2) addressing other matters related to the standardization of telecommunications equipment or services; and (3) taking into account relevant work carried out by the parties in other fora and that of non-governmental standardizing bodies.

[48] In a couple agreements to which the Philippines is a party, including with Japan, the version of the Reference Paper on Regulatory Principles in Telecommunications Services attached to the schedule of the Philippines refers to the creation of a national consultative forum to allow interaction among the telecommunications industries, user groups, and academic and research institutions on important telecommunications issues.

4.11 Cooperation

Beyond rules and obligations, the GATS Annex sets out several cooperation provisions to support the implementation of certain commitments and more generally to develop efficient and advanced telecommunications infrastructure, in particular in developing countries. The GATS Annex encourages public and private sector participation in the development programmes of international and regional organizations, including the ITU, the United Nations Development Programme (UNDP), and the International Bank for Reconstruction and Development (IBRD). In parallel, the GATS Annex promotes cooperation benefiting developing countries, including by making available to developing countries information on telecommunications services and ICT developments and by giving special consideration to opportunities to encourage foreign suppliers of telecommunications services in least-developed countries to assist in the transfer of technology, training and other activities.

Annex (Art. 6 Technical cooperation)

(*a*) *[…] Members endorse and encourage the participation, to the fullest extent practicable, of developed and developing countries and their suppliers of PTTNS and other entities in the development programmes of international and regional organizations, including ITU, UNDP and IBRD.*

(*b*) *Members shall encourage and support telecommunications cooperation among developing countries at the international, regional and sub-regional levels*.

(*c*) *In cooperation with relevant international organizations, Members shall make available, where practicable, to developing countries information with respect to telecommunications services and developments in telecommunications and information technology to assist in strengthening their domestic telecommunications services sector.*

(*d*) *Members shall give special consideration to opportunities for least-developed countries to encourage foreign suppliers of telecommunications services to assist in the transfer of technology, training and other activities that support the development of their telecommunications infrastructure and expansion of telecommunications services trade*.

Besides technical cooperation, the GATS Annex also calls on WTO members to make appropriate consultation arrangements with non-governmental and intergovernmental organizations, including ITU, on matters arising from the implementation of the Annex.

Annex (Art. 7 Relation to international organizations and agreements)

(*a*) *Members recognize the role played by intergovernmental and non-governmental organizations and agreements in ensuring the efficient operation of domestic and global telecommunications services, in particular the ITU. Members shall make appropriate arrangements, where relevant, for consultation with such organizations on matters arising from the implementation of this Annex.*

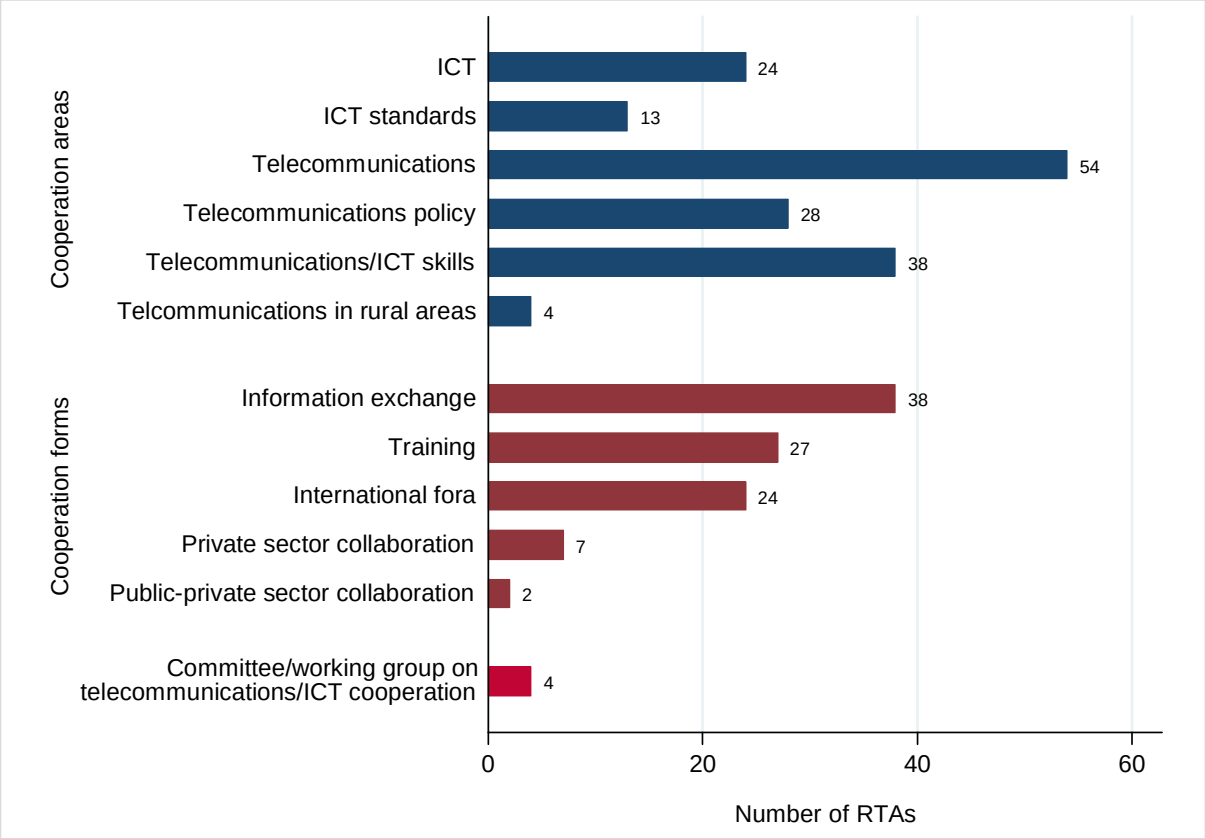
No notified agreement explicitly replicates the provisions on technical cooperation and consultation arrangements with intergovernmental and non-governmental organizations set out in the GATS Annex.[49] The only implicit exception is a few agreements, including the RTA between Australia and China, that include a provision specifying that the Reference Paper is incorporated in the RTA. That being said, a large number of agreements, namely 73 RTAs, include at least one cooperation provisions related to telecommunications.

While some agreements, such as the RTA between the Faroe Islands and Iceland, only list telecommunications or ICT as a (potential) cooperation area, some other agreements, such as the RTA between Egypt and the European Union, specify in relatively more detail (potential) cooperation areas and forms. Although cooperation provisions are particularly heterogenous, some of the main cooperation areas include telecommunications, including telecommunications services, and ICT development and diffusion, as shown in Figure 30. Some of the most common cooperation activities listed in RTAs include ICT and telecommunications skills training, dialogue on telecommunications policy, information exchange on standardisation, conformity testing and certification of ICT products, and consultation and cooperation in international fora on issues relating to ICT or telecommunications.

[49] The GATS Annex provision compelling WTO members to make appropriate arrangements for consultation with intergovernmental and non-governmental organizations on matters arising from the implementation of the GATS Annex is the other provision that is not replicated in RTAs.

A relatively less common cooperation area explicitly listed in a couple of agreements, including the Additional Protocol to the Framework Agreement of the Pacific Alliance, is the access to telecommunications services in rural areas. Other less common cooperation activities, found in a few agreements, including the RTAs to which Japan is a party with Malaysia and Japan, include promoting cooperation and collaboration between the parties' private sector or between the parties public and private sectors. Other more infrequent cooperation provisions refer to research and development of ICT, networks and telecommunications, including information technology services, applications and equipment.

Figure 30: Cooperation provisions on telecommunications are found in many RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Overall, the most detailed cooperation provisions on ICT and telecommunications are typically found in a specific article in the cooperation chapter, as is the case in the RTA between the European Union and Tunisia, or in a specific chapter on telecommunications or ICT cooperation, as is the case of the RTA between Japan and Thailand. Indeed, some of the agreements with a dedicated chapter on telecommunications or ICT cooperation, including the RTA between Colombia and the Republic of Korea, establish a committee, subcommittee or working group on telecommunications cooperation.[50] Some of these agreements, including the RTA to which Japan is a party with the Philippines and Thailand, further specify the functions of such (sub)committee or working group, including monitoring, reviewing and discussing issues regarding the implementation of the cooperation provisions; exchanging views and information on promotion and development of ICT cooperation; and identifying ways to further cooperate on ICT issues.

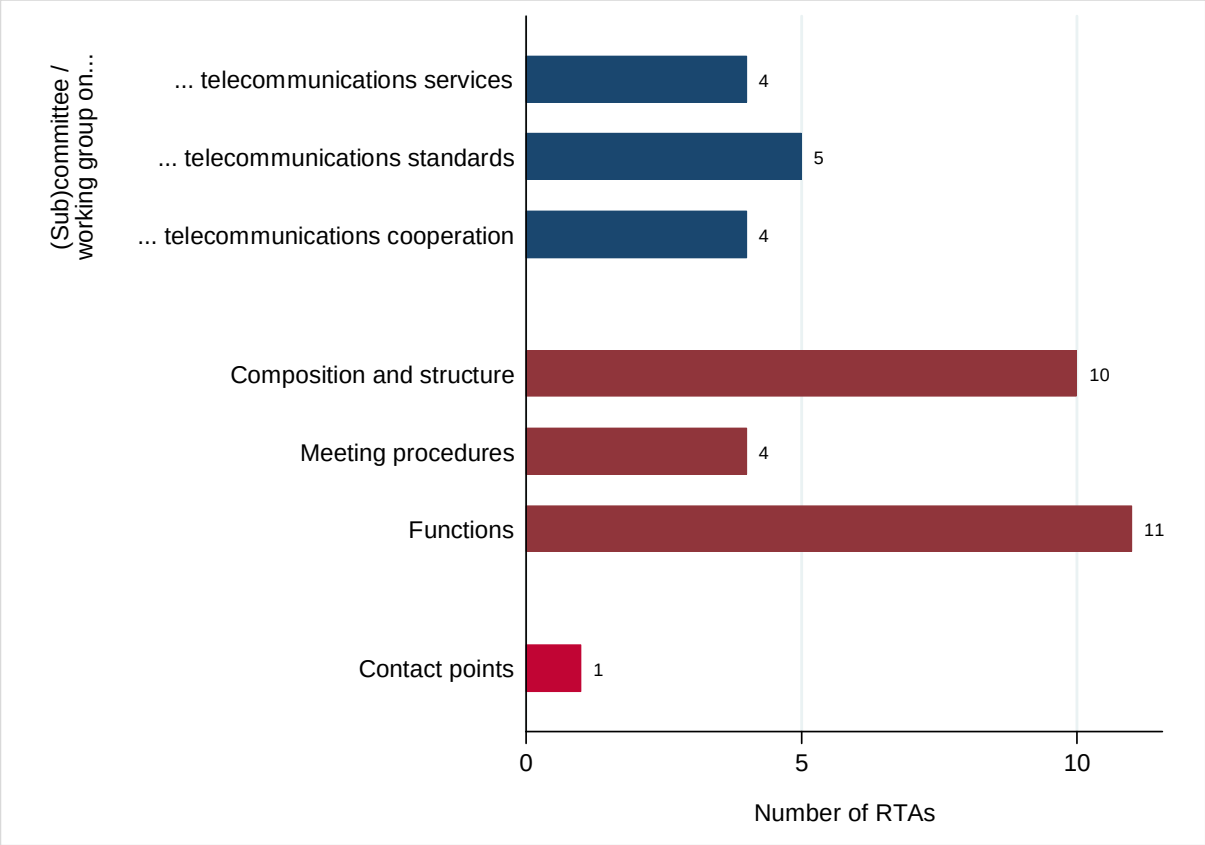
[50] Although not specific to telecommunications and ICT, some RTAs with a cooperation chapter establish a committee to oversee the implementation of cooperation activities.

4.12 Institutional arrangements

Although both the GATS Annex and Reference Paper do not establish any specific institutional arrangement, WTO members can discuss issues related to telecommunications in various WTO committees, including the Council for Trade in Services (Special Session), the Council for Trade-Related Aspects of Intellectual Property Rights and the TBT Committee.

A limited number of agreements, namely 15 RTAs, have established some type of institutional arrangements between the parties that are specific to telecommunications. As discussed above, a few agreements have established a (sub)committee or working group on telecommunications standards or on telecommunications cooperation. A few other agreements, including the USMCA, have established a committee or subcommittee with a broader scope addressing matters arising under the chapter on telecommunications services, as shown in Figure 31. The RTA between Australia and Malaysia is the only notified RTA to explicitly specify that the commission established under the chapter on trade in services may be tasked to consider any matters relating to the implementation of the chapter on telecommunications services. Similarly, the RTA between Australia and Hong Kong, China, is the only notified agreement to require the designation of one or more contact points in each party to facilitate communication between the parties on any matter covered by the chapter on telecommunications services.

Figure 31: Provisions establishing institutional arrangements are found in few RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Most provisions establishing a (sub)committee or working group on telecommunications are complemented by another provision specify the composition of the (sub)committee or working group, namely relevant government officials from each party.[51] A related provision confirms that the (sub)committee or working group can meet at venues and times decided by the parties. A complementary provision further foresees the possibility to invite representatives of relevant entities other than the parties, including representatives of the private sector, having the necessary expertise relevant to the issues to be discussed, to attend meetings of the (sub)committee or working group.

As explained above in the context of the (sub)committee or working group on telecommunications standards and on telecommunications cooperation, another complementary provision specifies the functions of such (sub)committee or working group. The most common functions include reviewing and monitoring the implementation and operation of the chapter on telecommunications services; and discussing any issues related to chapter on telecommunications services and any other issues relevant to the telecommunications sector. Other less common functions, found in a couple of agreements, including the CPTPP, include reporting to the RTA's committee or commission on the findings and outcomes of discussions held in the committee on telecommunications services, and carrying out other function delegated by the RTA's committee or commission. Although not always explicit, these institutional arrangements are aimed at ensuring the continuing relevance of the telecommunications provisions to technological and regulatory developments in the telecommunications sector.

4.13 Consultations

The WTO's Understanding on Rules and Procedures for the Settlement of Disputes (DSU) provides for several methods to resolve disputes that arise between WTO members concerning their rights and obligations under the WTO Agreement. WTO members can settle a dispute by finding a mutually agreed solution in bilateral negotiations or with the help of a dispute resolution mechanism, such as good offices, conciliation or mediation. Other options include having recourse to adjudication by panels. In this regard, bilateral consultations, which are required to take place at the beginning of any dispute, are intended to provide a setting in which the parties to a dispute can attempt to negotiate a mutually agreed solution.

Only a couple of RTAs include specific telecommunications-related consultations provisions. The RTAs to which Malaysia is a party with Australia and India foresee the possibility to enter into consultations, upon request of one of the parties, to resolve any technical or interpretative difficulties. The RTA between Australia and Malaysia further extends the possibility to hold consultations to address the implications for the telecommunications provisions arising from technological or industry developments. Similarly, in a letter exchange, the RTA between Australia and the United States calls on the parties to endeavour to meet to review relevant developments in market access, market structure, technological innovation and standards development, domestic regulation, and international policy trends in telecommunications and information technology.

5 TELECOMMUNICATIONS PROVISIONS ADAPTING FOR EVOLVING SERVICES AND TECHNOLOGIES

The WTO disciplines on telecommunications services establish a pro-competitive framework that was crafted at a time where mobile telephony and internet use had not grown to the massive extent that it has today. Since the framing of these rules, regulatory best practice and approaches have evolved in response to market dynamics and changing technologies. National regulators have gravitated toward strategies that include, for example, technology neutral licensing, competition friendly spectrum policies, addressing mobile sector competitiveness and internet neutrality rules.

[51] In a few agreements, such as the RTA between Japan and the Philippines, the provision on the composition of the (sub)committee or working group on ICT specifies which ministry will participate, namely the ICT ministry and the trade ministry.

Over the years, technological change and the corresponding evolution of best practices and tailored means of securing a competitive framework of the telecommunications sector have been explicitly addressed in a growing number of RTAs. Most of these new regulatory topics are not explicitly mentioned in the WTO rules, in particular the GATS Annex on telecommunications and the Reference Paper on Regulatory Principles on Basic Telecommunications. The dichotomy between telecommunications provisions based or not on WTO rules is, however, not always clear cut. Some of the telecommunications provisions reviewed in the previous section that expand the scope of application or some obligations could also be viewed as new disciplines going beyond existing WTO rules.

These new regulatory topics address (1) additional competition safeguards, including co-location, local loop unbundling and value-added services; as well as (2) suppliers' flexibility to choose the technology to supply their services; the development and diffusion of new technologies, such as (3) mobile services and equipment, and (4) internet access services; and, more recently, telecommunication and ICT consumers' rights.[52]

5.1 Competition

As discussed in the previous section, competitive safeguards are often considered as part of the conditions necessary to ensure the development of a fair and competitive telecommunications industry. Both the GATS Annex and the Reference Paper establish several competition disciplines, which are replicated and, in some cases, expanded in many RTAs with detailed provisions on telecommunications services. An increasing number of RTAs further address several competition-related issues that are not explicitly addressed in both the GATS Annex and the Reference Paper, such as co-location, local loop unbundling and value-added services.

5.1.1 Co-location

Co-location rights permit facilities-based suppliers of PTTNS to locate their equipment in another PTTNS supplier's premises to facilitate the supply of their services. Arguably, co-location might be covered by the general competitive safeguards of the Reference Paper, in situations where an operator's refusal or conditions imposed were to have anti-competitive effects. An increasing number of agreements, namely 42 RTAs, remove any doubt and set out specific disciplines clarifying that the right to access to and use of PTTNS also extends to co-location rights, as shown in Figure 32.

A few agreements, including the RTA between Japan and Switzerland, require a major supplier to allow other service suppliers who interconnect with that major supplier to physically locate their equipment or to install their cables and lines, where physically feasible and where no practical or viable alternatives exist, in order to interconnect smoothly with the essential facilities of the major supplier. A related but more specific provision addresses the conditions under which co-location takes place. Some agreements, such as the RTA between the European Union and Singapore, require the parties to ensure that major suppliers in their territory provide to provide to PTNS suppliers of the other Party physical co-location of equipment necessary for interconnection or access to unbundled network elements in a timely fashion and on terms and conditions that are reasonable and non-discriminatory. Many other agreements, including the RTA between Australia and Singapore, further require the terms, conditions and cost-oriented rates of physical co-location to be transparent.

Where physical co-location is not feasible for technical reasons or because of space limitations, several agreements, such as the RTA between the Republic of Korea and Viet Nam, require the parties to ensure that a major supplier in their territory cooperates with PTNS suppliers of the other party to find and implement a practical and commercially viable alternative solution. Many agreements, including the RTA between Australia and Singapore, further require the alternative solution to be implemented in a timely fashion and on terms, conditions, and cost-oriented rates that are reasonable, transparent, and non-discriminatory. Most of these agreements explicitly refer to virtual co-location as a possible alternative solution.[53] A few agreements, including the RTA

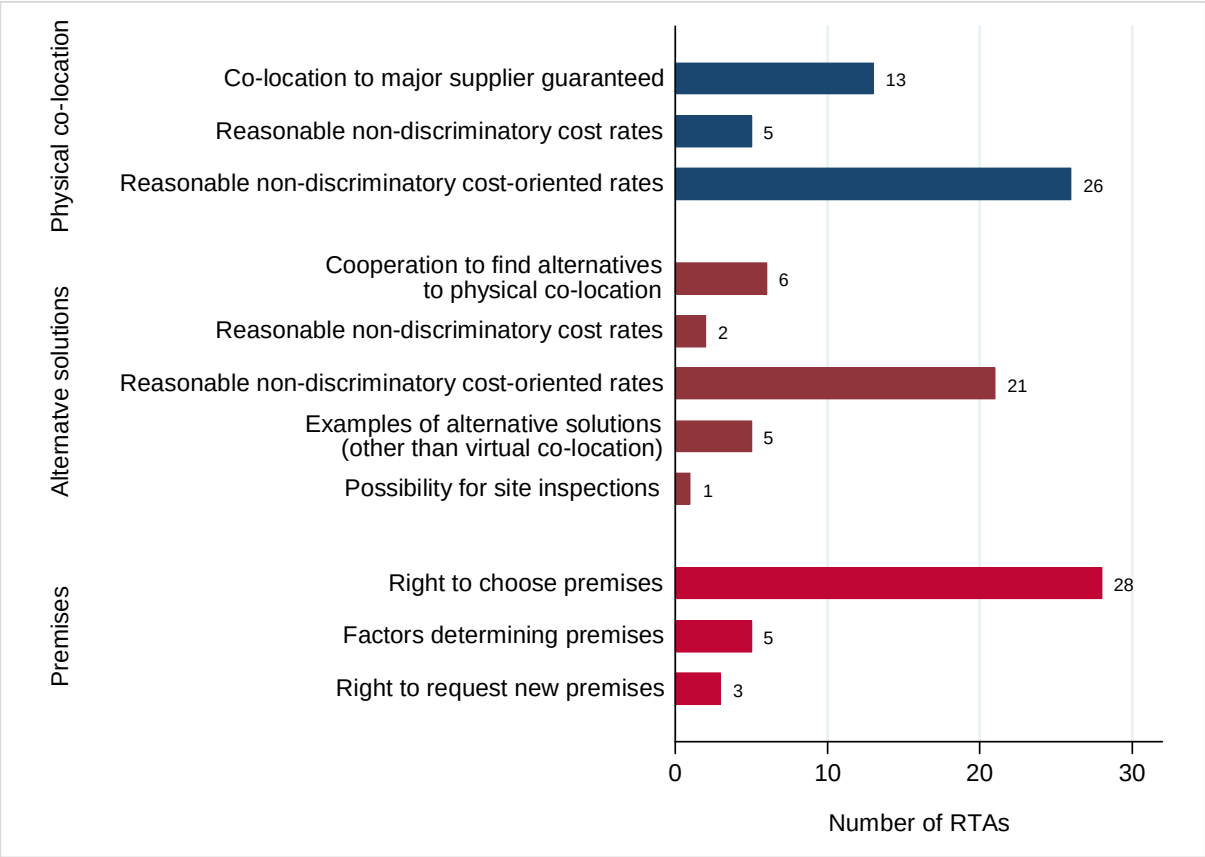
[52] Some of these regulatory issues are also being negotiated or discussed in the WTO.

[53] Initially, co-location was needed at shared premises of the network operator, which led to concerns on the part of PTTNS suppliers that the operator might not reasonably accommodate its competitors. Later,

between Australia and Malaysia, lists other possible solutions, such as permitting facilities-based suppliers to locate equipment in a nearby building and to connect such equipment to the major supplier's network; conditioning additional equipment space; optimising the use of existing space; or finding adjacent space. With a view to facilitating co-location, the RTA between the Republic of Korea and Singapore is the only notified agreement to explicitly specify that the cooperation between major suppliers and facilities-based suppliers to find alternatives could include site inspections of co-location premises, in accordance with the parties' respective domestic laws and regulations.

Most RTAs with provisions on co-location, including the CPTPP, indicate that the parties may determine, in accordance with their respective laws and regulations, which premises owned or controlled by major suppliers in their own territory, are subject to co-location obligations. A few of these agreements, including the RTA between Australia and Singapore, specify the factors to take into account when making the determination of premises that are subject to co-location obligations, such as , the state of competition in the market where co-location is required; whether the premises can be substituted in an economically or technically feasible manner in order to provide a competing service; or other specified public interest factors. A couple of agreements, including the RTA between Australia and Peru, require that when a party decides to not to impose co-location in certain major suppliers' premises, providers may still be allowed to require that those locations be offered for co-location, without prejudice to the party's decision on such a request.

Figure 32: Provisions on co-location are included in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

third party co-locators came into existence as a broker between the suppliers and operator, and a need for virtual interconnection evolved as internet protocol networks became more common.

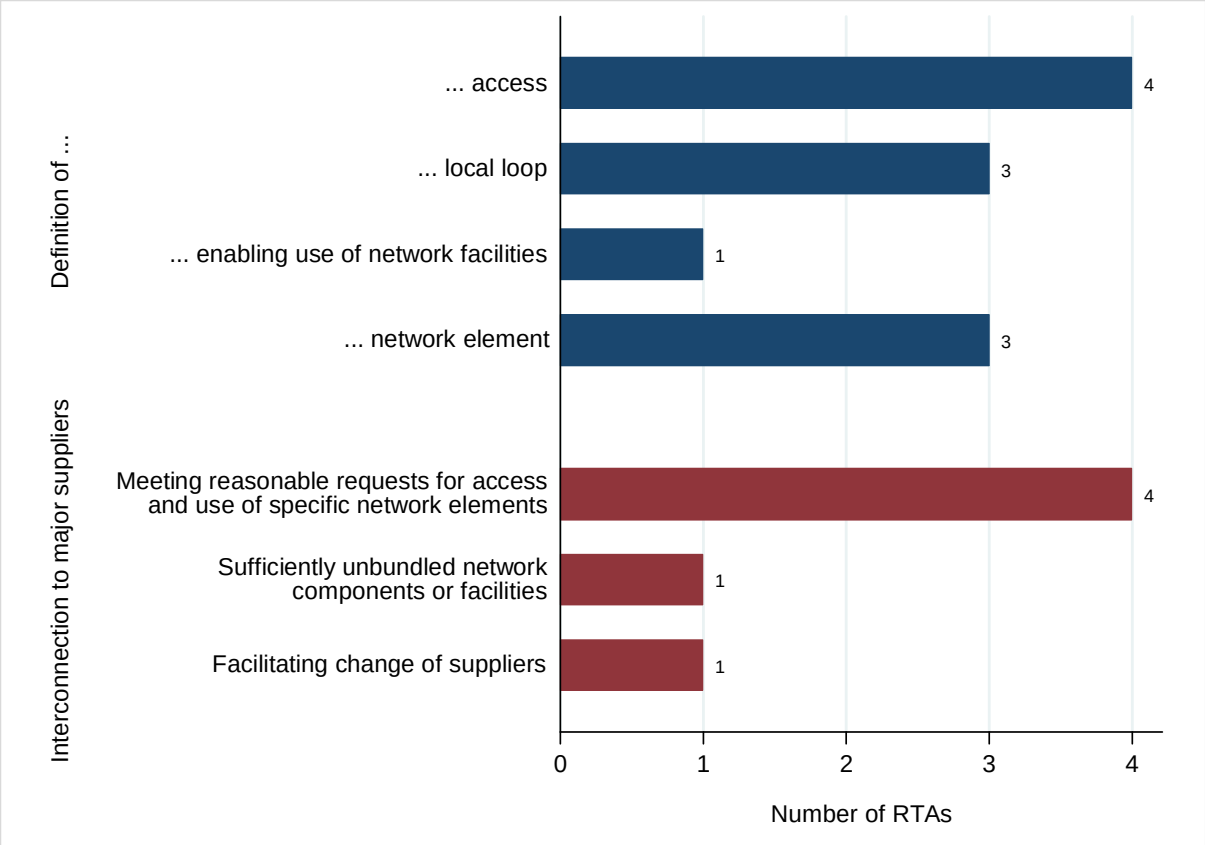
5.1.2 Local loop unbundling

Local loop unbundling refers to an alternative to interconnection by enabling suppliers of basic telecommunications services to take on new customers without having either to duplicate existing facilities or to pay minute-by-minute interconnection fees. Instead, network segments can be leased from an infrastructure operator through commercial arrangements as alternative to interconnection fees to supply basic telecommunications services, thereby reducing the cost of market entry.

The Reference Paper not only does not explicitly refer to local loop unbundling, but the scope of its provisions on interconnection is limited to allowing users of one supplier to communicate with users of another supplier and to access services provided by another supplier. The objective of local loop unbundling is broader by enabling a supplier to *take on customers* in a segment of the incumbent's network, rather than only terminate calls.

To address this uncertainty, a limited number of agreements, namely 11 RTAs require major suppliers of PTNS to provide unbundled access to local loop. The way to explicitly address local loop unbundling differs, however, across agreements, as highlighted in Figure 33.

Figure 33: Provisions on local loop unbundling are found in a few RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

A few agreements specify the obligations scope by defining certain terms. The RTAs to which the European Union is a party with Armenia, Georgia, the Republic of Moldova and Ukraine, specify in their definition of the term "access" that the connection of equipment, by fixed or non-fixed means, includes access to the local loop and to facilities and services necessary to provide services over the local loop. Most of these EU agreements further define the term "local loop" as the physical circuit connecting the network termination point at the subscriber's premises to the main distribution frame or equivalent facility in the fixed public communication network. Similarly, a few agreements, including the RTA between Australia and Singapore, define the term "network components" as

facilities or equipment used in supplying a PTS, including features, functions, and capabilities provided by means of such a facility or equipment, which may include local loop, sub loops and line sharing. The RTA between the European Union and Japan is the only notified agreement to specify in its definition of the term "enabling use of network facilities" that making available facilities and/or services to another PTTNS supplier of the purpose of providing public telecommunications transport services (…) may include (…) the use of specified network facilities or elements, including the local loop, on an unbundled basis.

Explicit obligations regarding access to local loop unbundling are also found in a couple of RTAs. The RTAs negotiated by the European Union with the Republic of Moldova, Singapore and Ukraine, require the regulatory authority to (have the power to) impose obligations on major suppliers to meet reasonable requests for access to, and use of, specific network elements and associated facilities, including unbundled access to the local loop. The RTAs to which the European Union is a party with the Republic of Moldova and Ukraine further specify that this obligation of access to local loop unbundling may apply to situations where the regulatory authority considers that denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end user's interest. The RTA between Japan and Singapore is the only notified agreement to explicitly require interconnection to major suppliers to be provided in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled, including unbundled local loop and line sharing. The RTA between the European Free Trade Associations states and Singapore is also the only notified agreement to require suppliers to take any reasonable action necessary to allow end-user that chooses to obtain service from a different supplier to do so with minimum difficulty, including, where technically feasible, by allowing the end user to continue to receive service using the same local loop.

5.1.3 Value-added services

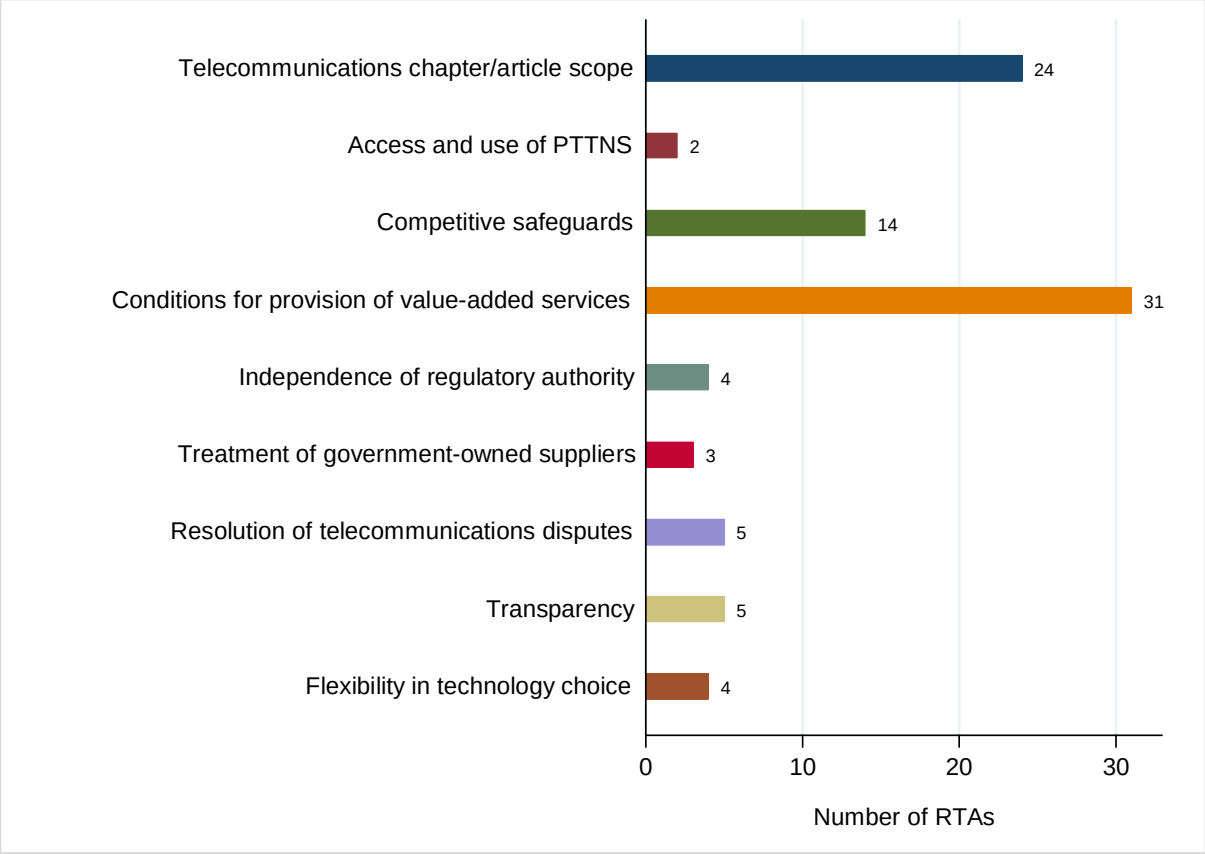
Enhanced or value-added telecommunications services include, among others, email, voice mail, on-line information and database retrieval, electronic data interchange and on-line information and data processing. As discussed in Section 3, value-added services suppliers, like any other scheduled services suppliers, are beneficiaries of access rights granted by the provisions on telecommunications services set out in RTAs, provided the parties scheduled commitments on value-added services in their RTAs. At the same time, a growing number of agreements, namely 36 RTAs, include provisions that either refer to PT(T)(N)S and value-added telecommunications services or that are specific to value-added telecommunications services, as shown in Figure 34.

Some agreements, including the RTA between Australia and Panama, specify the scope of the chapter on telecommunications services to coves, among others, measures adopted or maintained by the parties relating to the supply of value-added services. Similarly, the RTA between Colombia and Mexico specifies that the chapter on telecommunications services applies to measures affecting access to and use of PTNS by value-added services suppliers. Conversely, a couple of agreements, including the RTA between Mexico and Panama, confirm that the chapter on telecommunications services does not impose obligations regarding value-added telecommunications services, which are subject to the parties' respective national legislation.

Some RTAs extend the scope of rights granted to PT(T)NS suppliers to value-added telecommunications suppliers. As explained in the previous section, some of these rights draw on the GATS, thereby clarifying the application of GATS rules, including the GATS Annex, in the context of value-added telecommunications services and their suppliers. For instance, the RTA between Colombia and Mexico requires the parties to impose no more than necessary conditions on users accessing or using PTTNS to ensure that the service suppliers of the other parties only supply value-added telecommunications services when they are permitted to do so in accordance with their respective scheduled commitments on value-added telecommunications services.[54]

[54] See section 4.1 for a review of provisions related to access to and use of PT(T)NS.

Figure 34: Provisions on value-added services are found in a limited but increasing number of RTAs



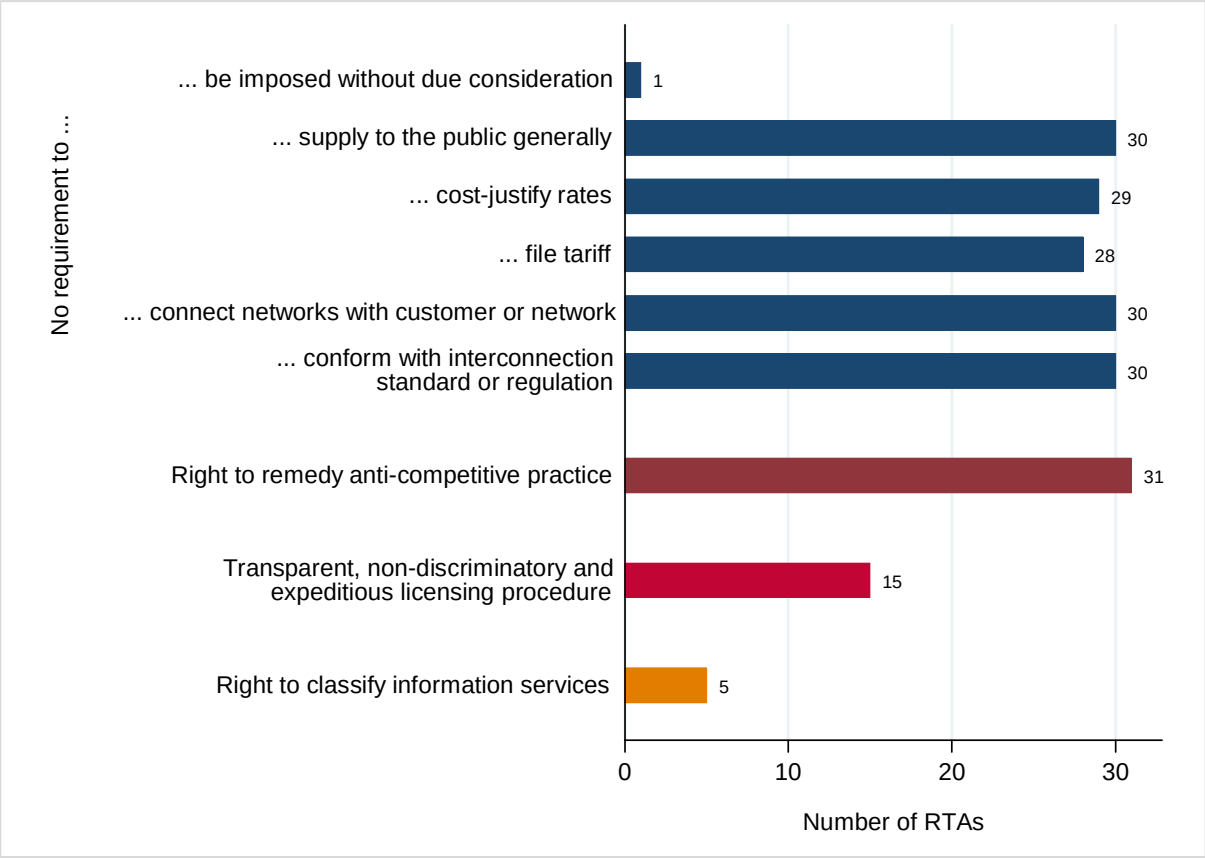
Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

The benefits of competitive safeguards of the Reference Paper are also explicitly extended to value-added telecommunications services suppliers in a few agreements. As discussed in section 4.2, these agreements, including the RTA between Canada and Chile, requires each party to ensure that a monopoly designated to provide PT(T)NS and competing, directly or through an affiliate, in the provision of enhanced or value-added services or other telecommunications-related services or goods, does not use its monopoly position to engage in anti-competitive conduct in those markets, either directly or through its dealings with its affiliates, in such a manner as to affect adversely a person of the other party. Some of these agreements, such as the RTA between Chinese Taipei and Panama, list examples of anti-competitive conduct, including cross subsidization, predatory conduct and the discriminatory provision of access to public telecommunications transport networks or services, among others.

Value-added services suppliers are also subject to specific competitive safeguards in an limited but increasing number of RTAs, as highlighted in Figure 35. The RTA between Colombia and Mexico is the only notified agreement to explicitly require the parties to establish the necessary conditions for the provision of value-added services, taking into account the procedures and information required for that purpose. The USMCA is also the only notified agreement to urge parties having engaged in direct regulation of value-added services to not impose on a supplier of value-added services requirements applicable to a PTS supplier without due consideration of the legitimate public policy objectives, the technical feasibility of the requirements, and the characteristics of the value-added services at issue. The agreement, however, confirms that the provisions on the conditions for supplying value-added services do not reflect the parties' view on whether a service should be categorized as a value-added service or a PTS. Some agreements, including the RTA between the Republic of Korea and the United States, limit the scope of the provisions on the conditions for supplying value-added services to enterprises classified as suppliers of value-added services and supplying those services over facilities not owned by these enterprises.

Most agreements with provisions on the conditions for supplying enhanced or value-added services, including the RTA between India and Malaysia, specify the requirements that must not be imposed on suppliers of value-added services. In particular, the parties are compelled not to require providers of value-added services to supply value-added services to the public generally; not to interconnect their respective networks with any particular customer for the supply of those services; and not to conform with any particular standard or technical regulation for interconnection other than for interconnection to a PT(T)N. Most of these agreements, such as the RTA between Canada and Chile, further require the parties not to impose on suppliers of value-added services the obligation to cost-justify the rates or prices for those services; and to file a tariff or a price for those services. That being said, the RTAs with such provisions specify that governments may require a provider of enhanced or value-added services to cost-justify its rates; file tariffs; interconnect with a particular customer or network; or conform with an interconnection standard or regulation in order to either remedy the provider's anti-competitive practice, or to promote competition or safeguard the interests of consumers.

Figure 35: Provisions related to the conditions for the supply of value-added services are found in a limited but increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Some of the agreements with provisions on the conditions for supplying enhanced or value-added services, including the RTA between Panama and Central America, also require any adopted licensing, permit, concession, registration or notification procedure relating to the provision of value-added services to be transparent and non-discriminatory. Most of these agreements further require applications filed under such licensing procedure to be processed expeditiously. Similarly, most of these agreements require the parties to ensure that information required for such licensing procedure is limited to that necessary to demonstrate that the applicant has the financial solvency to begin providing value-added services or to assess conformity of the applicant's terminal or other equipment with the respective parties' applicable standards or technical regulations.

The remaining explicit provisions related to value-added services are not specific to value-added services but extend the disciplines applicable to PT(T)NS to value-added services.[55] For instance, and as discussed in section 4.4, a few agreements, including the RTA between Canada and Peru, require each party to ensure that its regulatory body is separate from, and not accountable to, a supplier of PT(T)NS or value-added service. Similarly, a couple of agreements, including the RTA between Bahrain and the United States, compel each party to not accord more favourable treatment to a supplier of PTS or value-added services in its territory than that accorded to a like supplier of the other party on the basis that the supplier receiving more favourable treatment is owned, wholly or in part, by the national government of the party.

As discussed in section 4.5, a few agreements, including the RTAs between Canada and the Republic of Korea, also require each party to ensure that suppliers of PT(T)NS and value-added services of the other party have timely recourse to its regulatory body to resolve disputes regarding domestic measures relating to specific matters covered by the chapter on telecommunications services. The RTA between Colombia and the Republic of Korea is the only notified agreement to explicitly compels each party to ensure that suppliers of PTTNS and value-added services of the other party that have requested interconnection with a major supplier in the party's territory may have recourse, within a reasonable and publicly specified period after the supplier requests interconnection, to its telecommunications regulatory body to resolve disputes regarding the terms, conditions, and rates for interconnection with such major supplier. A few agreements, including the RTA between Canada and Panama, compels each party to ensure that suppliers of PT(T)NS or value-added services aggrieved by the determination or decision of a regulatory body may petition that body for reconsideration of that determination or decision. The RTA between Canada and Colombia is the only notified agreement to explicitly specify that any suppliers of PTTNS or value-added services that is aggrieved or whose interests are adversely affected by a determination or decision of the regulatory body may obtain judicial, quasi-judicial or administrative review of such determination or decision by an independent authority.

A couple of agreements, including the RTA between Canada and Colombia, also extend some of the transparency disciplines to value-added services. As discussed in section 4.9, these provisions compel the parties to make publicly available their respective measures relating to PT(T)NS and value-added services, including measures relating to tariffs and other terms and conditions of service; procedures relating to judicial and other adjudicatory proceedings; specifications of technical interfaces; conditions applying to attachment of terminal and other equipment to PT(T)N; and notification, permit, registration, or licensing requirements, if any.

5.2 Flexibility in choice of technology

WTO rules are based on "technological neutrality", as they make no distinction between the different technological means by which a good or a service may be delivered. The concept of "technological neutrality" has also been highlighted in the context of telecommunications services. The Chairman's note on basic telecommunications services market commitments stresses that any scheduled basic telecommunications service may be provided through any means of technology.[56]

A limited but increasing number of agreements, namely 29 RTAs, reinforce not only the concept of "technological neutrality" applied to market access commitments but also confer the right to PT(T)(N)S suppliers to use the technology of their choice in supplying their services. The trend toward flexibility in supplier's technological choice in the telecommunications sector is borne out by the fact that it has become more common for regulators to issue technology neutral licences. By providing added flexibility to suppliers, this approach nurtures market-led innovation and contributes to effective competition in retail markets.

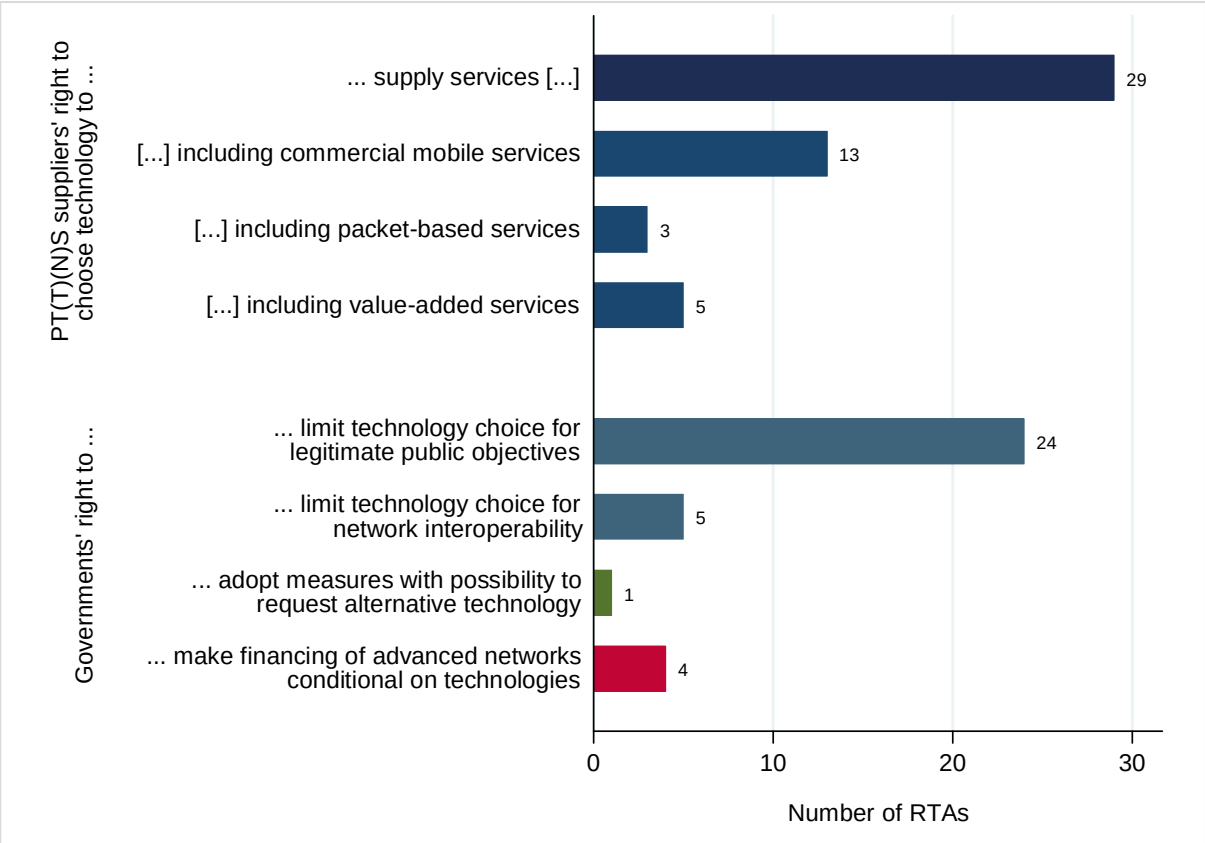
As shown in Figure 36, some RTAs specify the scope of application of the provision on flexibility in the choice of technology. Some agreements, such as the RTA between Australia and Chile, indicate that the flexibility in the choice of technology is to be extended, in particular, to suppliers of mobile services and packet-switched services . Some agreements, including the RTA between China and the Republic of Korea, also extend the right to choose technologies to value-added service suppliers.

[55] As discussed in the next subsection, a couple of RTAs expand the right for telecommunications suppliers, including value-added suppliers, to use the technology of their choice in supplying their services.

[56] WTO Group on Basic Telecommunications Chairman's Note for scheduling basic telecom services commitments (S/GBT/W/2/Rev.1).

The provision on flexibility in the choice of technology is often complemented by another provision specifying, explicitly or in some case implicitly, that the parties retain the right to apply a measure that limits the technologies that a PT(T)NS supplier may use to supply its services, provided that such measure is designed to achieve a legitimate public policy objective.[57] Some agreements with such provision, including the CPTPP, further require any measure restricting the choice of technology to not be prepared, adopted or applied in a manner that creates unnecessary obstacles to trade. A few agreements, including the RTA between Singapore and the United States, do not refer to measures with a legitimate public policy objective but instead refer to the parties' ability to take measures to ensure that end-users of different networks are able to communicate with each other.

Figure 36: Provisions related to flexibility in technology choice are found in several RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

Other provisions related to right of telecommunications suppliers to choose their technology are found in very few agreements. The RTA between the Republic of Korea and the United States is the only notified agreement to include detailed provisions specifying, among others, that after the adoption of a measure with a legitimate public policy objective that mandates the use of a specific technology or limits the ability to choose the technology to supply services, suppliers of telecommunications or value-added services or equipment have to be given the opportunity to request the party having adopted such measure to initiate a rulemaking to permit, in addition, the use of an alternative technology that could effectively and reasonably achieve the party's legitimate public policy objective.[58] This agreement and the RTA between Australia and the United States clarify that each party retains the right to define its own legitimate public policy objectives. Drawing on the

[57] For instance, an implicit provision, found in the RTA between Panama and the United States, stipulates that no party may prevent PTS suppliers from choosing their technologies *subject to requirements necessary to satisfy legitimate public policy interests*.

[58] The RTAs to which Korea is a party with the United States, but also Australia and China clarify that the article on flexibility in the choice of technology does not apply to measures adopted before the date of entry into force of the respective agreements.

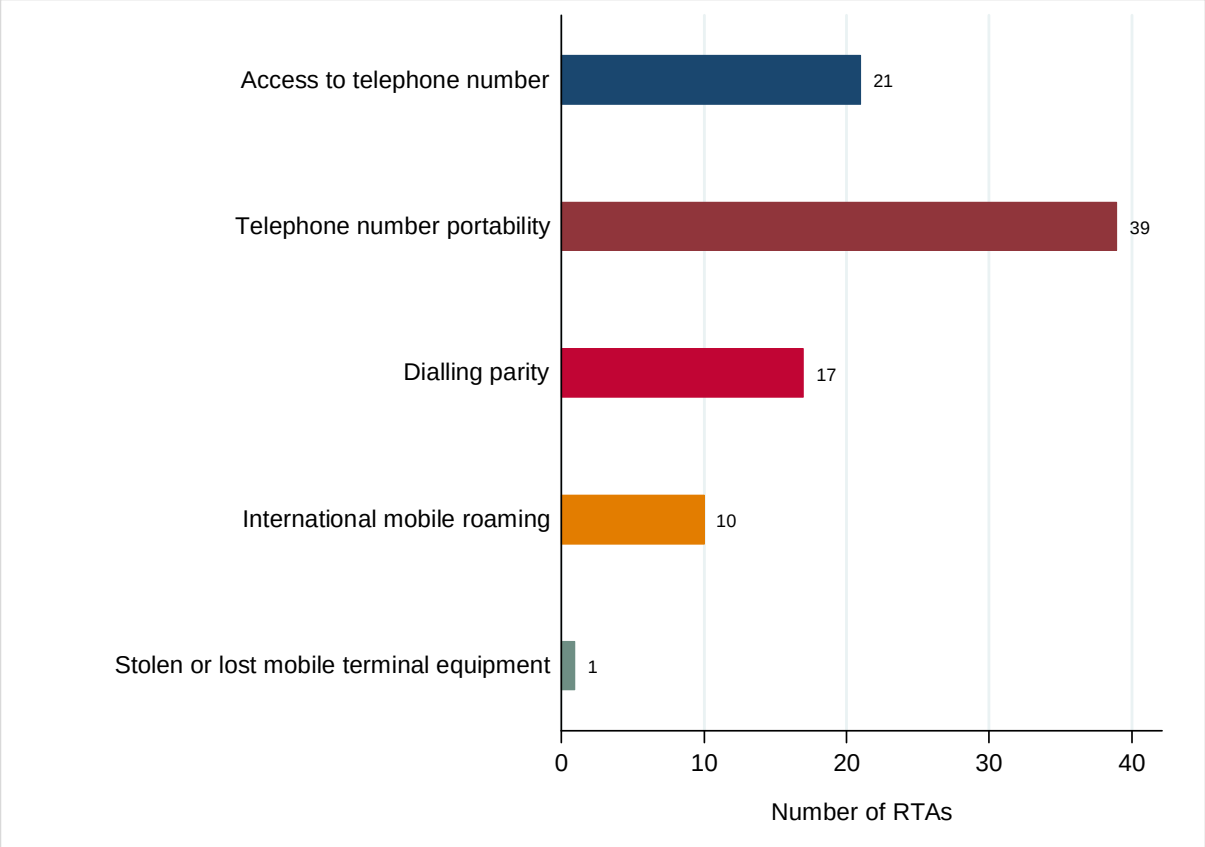
TBT Agreement, the RTA between Australia and the United States recalls that whenever a measure limiting the ability to choose a technology is based on relevant international standards, it shall be rebuttably presumed not to create unnecessary obstacles to trade. Similarly, the RTA between the Republic of Korea and the United States requires the parties to endeavour, to the extent possible, to base its technical requirements relating to the supply of telecommunications or value-added services on performance rather than design or descriptive characteristics.

More recently, the governments' right to limit the choice of technology is explicitly recognized in the context of public financing of network development. In particular, a few recent agreements, including the CPTPP, specify that each party may make the financing of the development of advanced networks, including broadband networks, conditional on the use of particular technologies that meet the party's specific public policy interests.

5.3 Mobile services and equipment

Neither the GATS Annex nor the Reference Paper include provisions specifically related to mobile services. At the time the WTO rules were negotiated, the use of mobile telephony was limited. Over the years, an increasing number of agreements, namely 41 RTAS, include specific provisions related to mobile services and equipment. As highlighted in Figure 37, some of the provisions related to mobile services and equipment cover various issues that are particularly relevant to mobile use, such as access to telephone numbers, number portability and dialling parity, or specific to mobile use, such as international roaming and stolen or lost mobile terminal equipment.

Figure 37: Provisions relevant and related to mobile services and equipment are found in an increasing number of RTAs



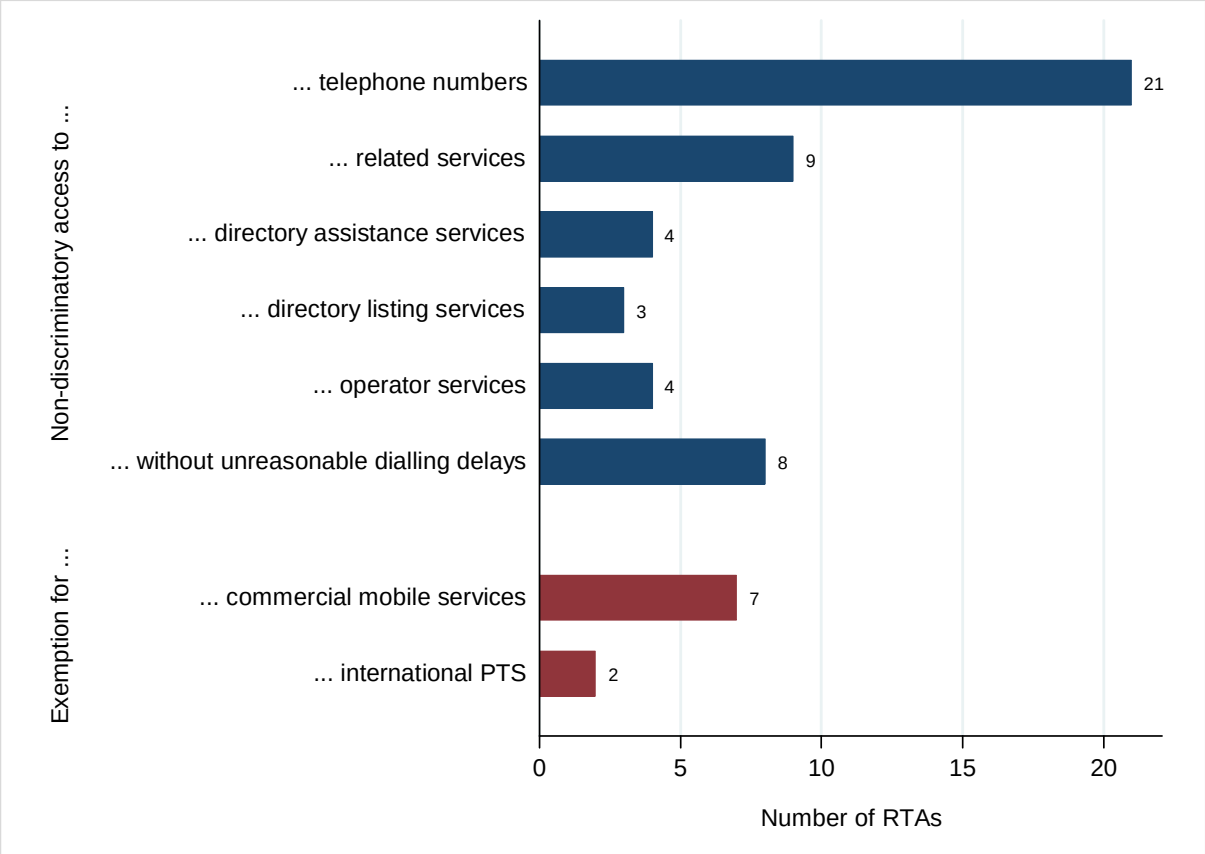
Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

5.3.1 Access to telephone numbers

As discussed in the previous section, the Reference Paper requires the allocation and use of telecommunications resources, including telephone numbers, to be administered in an objective, transparent, timely and non-discriminatory manner. Telephone numbers are determined and allocated following specific rules and processes that assign geographically numbers, specify the sequences of numbers and determined the telecommunications operators allowed to have access to the numbers.

A limited but increasing number of agreements, namely 21 RTAs, include specific provisions related to the access to telephone numbers. As highlighted in Figure 38, the most common provisions on access to telephone numbers, found in several agreements, including the RTA between Australia and Singapore, require each party to ensure that PTS suppliers, or in some cases PTNS or PTTNS suppliers, of the other party established in its territory are afforded access to telephone numbers on a non-discriminatory basis. Some of these agreements, such as the RTA between Australia and the United States, further extend the obligation of non-discriminatory access to telephone numbers and related services. Similarly, a few agreements, including the RTA between Colombia and the United States, specify explicitly the type of related services subject to the obligation of non-discriminatory access, namely directory assistance, directory listing, and operator services. Several agreements, such as the RTA between Chile and the United States, also require that the non-discriminatory access to telephone numbers (and related services) be carried out without unreasonable dialling delays.

Figure 38: Provisions on access to telephone numbers are found in few RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

A few RTAs with provisions on access to telephone numbers specify which types of telecommunications services are not covered by the obligation to provide non-discriminatory access to telephone numbers (and related services). Some RTAs, including the RTA between Colombia and the United States, specify that the obligation of access to telephone numbers does not apply to suppliers of commercial mobile services. Similarly, the RTAs negotiated by the Republic of Korea with Australia and the United States exclude suppliers of international public telecommunications services in the Republic of Korea from the obligation of non-discriminatory access to telephone numbers.

5.3.2 Number portability

Number portability allows a customer to retain a phone number when changing operators, services or geographical locations. Although number portability applies to both fixed and mobile telephony, mobile number portability has become particularly relevant with the increasing mobile phone use. Number portability contributes to market competition by reducing consumers' switching costs.

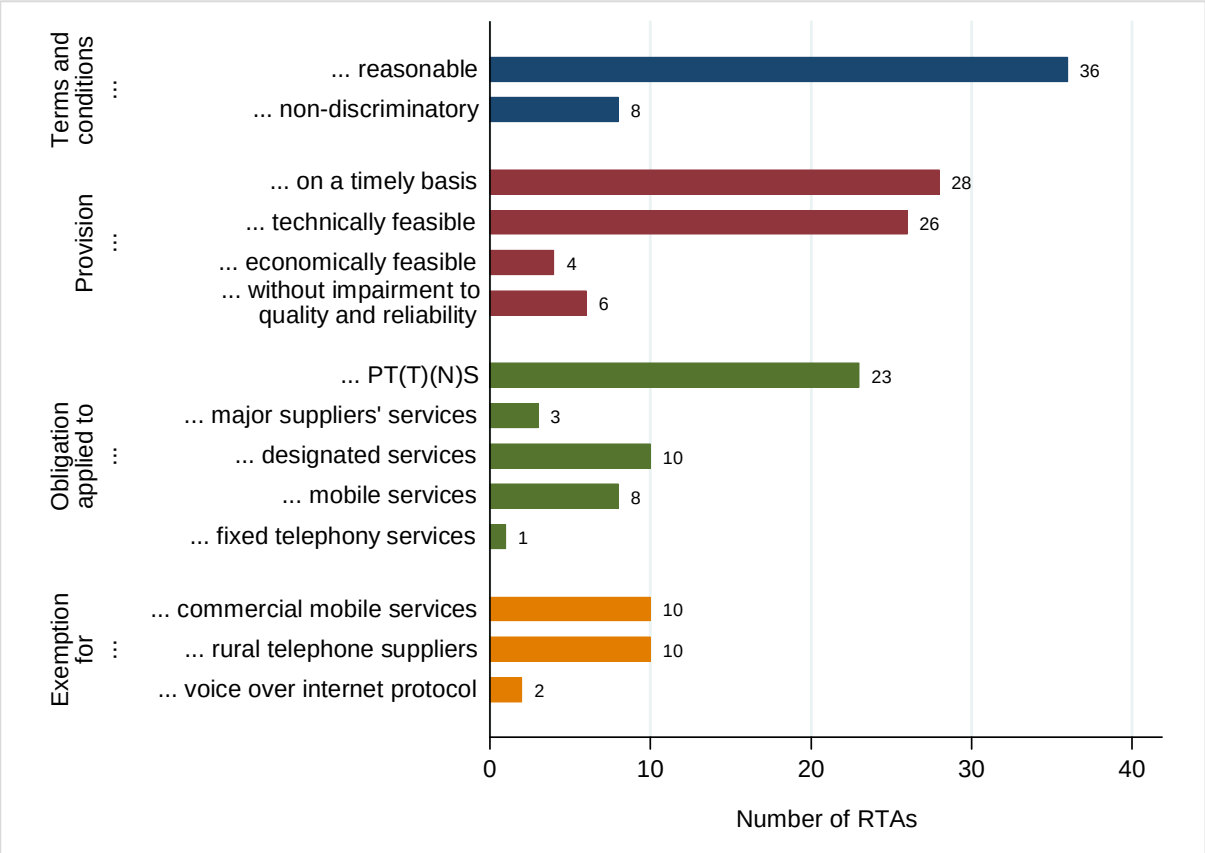
An increasing number of agreements, namely 39 RTAs, guarantee number portability for telecommunications services. Most provisions on number portability found in RTAs specify the terms and conditions under which number portability must be provided as well as the scope of the obligation to provide number portability, as highlighted in Figure 39.

The terms and conditions, and more generally the way to provide number portability, tend to differ across RTAs. Some agreements, such as the RTA between Canada and the European Union, require the terms and conditions to be reasonable. Some other agreements, such as the RTA between Australia and Malaysia, require number portability to be provided on a timely basis and on reasonable terms and conditions. A few agreements, including the CPTPP, require a timely provision of number portability on reasonable and non-discriminatory terms and conditions. Several other agreements are slightly more specific and compel number portability to be provided to the extent technically feasible, on a timely basis, and on reasonable terms and conditions. A few agreements, including the RTA between Australia and Chile, are even more specific and require the provision of number portability to the extent technically and economically feasible, in a reasonable period of time and on terms and conditions that are reasonable and non-discriminatory. Similarly, a couple of agreements, including the RTA between the European Union and Viet Nam, require number portability to be provided, to the extent technically and economically feasible, on a timely basis and on reasonable terms and conditions. A few agreements, such as the USMCA, further compel number portability to be provided without impairment to quality and reliability. A couple of agreements, including the RTA between Singapore and Turkey, also require number portability to be provided without impairment to convenience to the end-users.

While most provisions on number portability require the parties to ensure PTS suppliers, or in some cases PTNS, PTTNS or PTTS suppliers, provide number portability, some agreements explicitly specify the type of telecommunications services the obligation of number portability applies to. A couple of agreements, including the RTA between Chile and the United States, compel major suppliers to provide number portability. More recently, a few agreements, including the RTA between India and Japan, call on or require PT(T)(N)S suppliers to provide number portability for mobile services designated by the respective party. Some agreements, including the RTA between Australia and Malaysia, extend the obligation of number portability to mobile services and any other services as designated by each party. The RTA between Australia and the United States is the only notified agreement to explicitly apply the obligation of number portability to fixed telephony and any other designated service.

Conversely, several agreements explicitly specify which type of telecommunications services or which suppliers of telecommunications services are excluded from the scope of application of the obligation of number portability. Some agreements, including the RTA between Panama and the United States, specify that the provision on number portability does not apply with respect to suppliers of commercial mobile services. Similarly, several agreements, such as the RTA between Australia and Peru, specify that rural operators are not covered by the obligation of number portability. Both RTAs to which the Republic of Korea with the European Union and the United States are the only notified agreements to explicitly exclude suppliers of voice over internet protocol services from the obligation to provide number portability.

Figure 39: Provisions on number portability are found in an increasing number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PTTNS = Public telecommunications (transport) (network) and services.

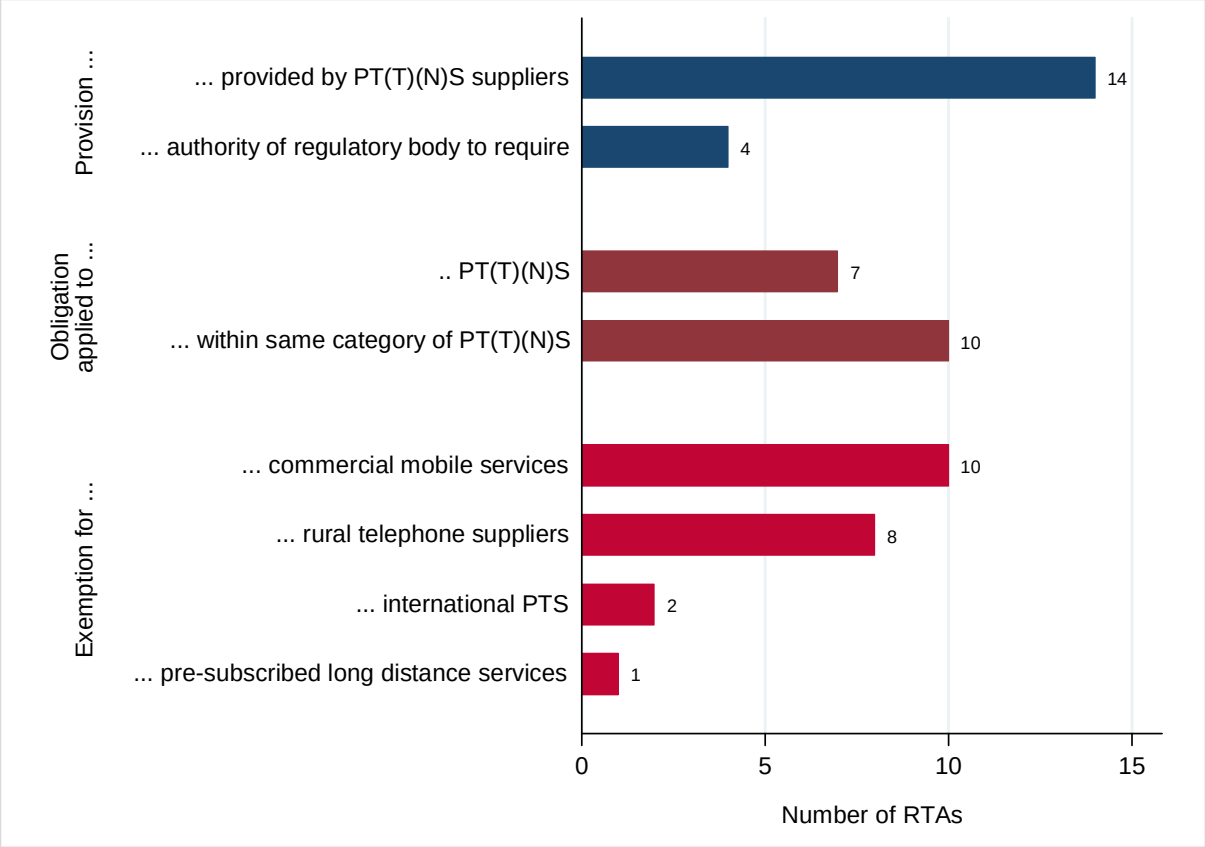
5.3.3 Dialling parity

Dialling parity refers to the opportunity for end-users to compose an equal number of digits to take advantage of services, regardless of the operator chosen by the user. When additional digits must be composed, it can reduce the incentive for customers to choose an alternative supplier. Dialling parity can play an important role in promoting market competition.

A limited but increasing number of RTAs include provisions on dialling parity, as shown in Figure 40. Some agreements, such as the RTA between Bahrain and the United States, require each party to ensure PT(T)(N)S suppliers in its respective territory provide dialling parity to PT(T)(N)S suppliers of the other party. Some of these agreements, including the RTA between the Republic of Korea and the United States, further specify that the guarantee of dialling parity only applies within the same category of service. Worded differently, some agreements, including the RTA between Australia and Chile, require the parties to ensure that their respective telecommunications regulatory body has the authority to require that PT(T)(N)S suppliers in their respective territory provide dialling parity within the same category of service to PT(T)(N)S suppliers of the other party.

Most RTAs with provisions on dialling parity include a complementary provision specify which types of telecommunications services are not covered by the obligation to provide dialling parity. In several RTAs, including the RTA between Australia and the United States, the obligation of dialling parity does not apply to suppliers of commercial mobile services. Similarly, the RTAs to which the Republic of Korea is a party with Australia and the United States exclude suppliers of international public telecommunications services in the Republic of Korea from the obligation of dialling parity. More recently, the USMCA does not apply the obligation of dialling parity to pre-subscribed long-distance services.

Figure 40: Provisions on dialling parity are found in a limited number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force. PTS = public telecommunications services.

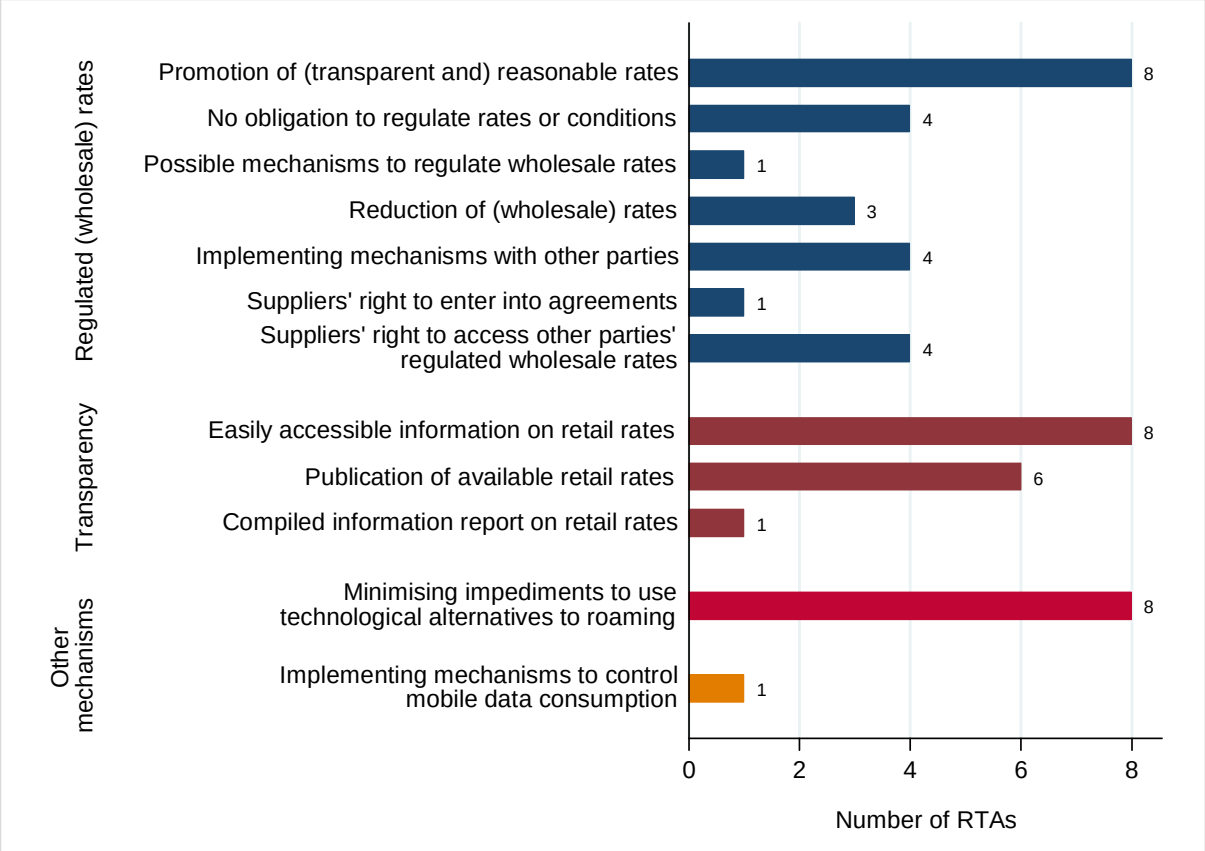
5.3.4 International mobile roaming

International mobile roaming refers to the service that enables mobile users to use their home operator phone number and data services to make and receive voice calls and text messages, access the internet, and send and receive emails, while visiting another country. The extension of coverage in the visiting country is made possible by a wholesale roaming agreement between a mobile user's home operator and the visited mobile operator network.

One issue that has received increasing attention is the high price levels for international mobile roaming services. To address such recalcitrantly high roaming fees, a limited number of agreements, namely 10 RTAs, encourage market competition and transparency of international mobile roaming services through wholesale price regulation, more transparent information for consumers and promotion of alternative technologies, as highlighted in Figure 41.

Several agreements, including the RTA between the European Union and Japan, call on the parties to endeavour to cooperate on promoting transparent and reasonable rates for international mobile roaming services with a view to promoting the growth of trade between the parties and enhancing consumer welfare. A couple of these agreements, including the RTA between Australia and Peru, further clarify that the article on international mobile roaming does not require to regulate rates or conditions for international mobile roaming services. Conversely, the Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to commit the parties to jointly evaluate the possibility of establishing mechanisms to regulate the wholesale international roaming service offered between the parties for voice, data and messaging services. The agreement further commits the parties to evaluate the adoption of joint actions aimed at reducing international roaming rates between the parties. Similarly, the RTAs to which China is a party with Australia and the Republic of Korea, compel the parties to encourage their respective telecommunications service suppliers to reduce the wholesale rates for international mobile roaming between the parties, with a view to reducing international mobile roaming rates.

Figure 41: Provisions on international mobile roaming are found in only a few RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

A few other provisions establish disciplines which apply to parties who have decided (unilaterally) to regulate prices. A few agreements, including the CPTPP, contemplate the possibility for any interested party, that has adopted or maintains measures to ensure the rates of wholesale international roaming services are reasonable, to cooperate on and implement mechanisms with other parties to facilitate the implementation of those measures, including by entering into arrangements with those parties. In that context, these agreements further require the party having adopted those measures (party A) to ensure that a PTS supplier of another party (party B) has access to the regulated rates or conditions for wholesale international mobile roaming services for its customers roaming in the territory of the party having adopted those measures (party A) as long as the rates for wholesale mobile roaming services are reciprocal between the two parties. These RTAs consider to two different conditions ensure reciprocal rates for wholesale mobile roaming between the parties. The first condition refers to a situation where both parties signed an arrangement to reciprocally regulate rates or conditions for wholesale international mobile roaming services for suppliers of both parties. The second condition refers to a situation where both parties did not entered into an arrangement but the PTS supplier of the other party (party B) choses to make available to PTS suppliers of the party having adopted regulated rates measures (party A) wholesale international mobile roaming services at rates or conditions that are reasonably comparable to the regulated rates or conditions (in party A) and meet additional requirement imposed with respect to the availability of the regulated rates or conditions (in party A). A couple agreement with such provision, including the RTA between Australia and Peru, further specify that in case of disagreement, the telecommunications regulatory body of the party having adopted the regulated rates measures (party A) is required to determine whether the rates or conditions are reasonably comparable. The party having regulated the rates is also allowed to require PTS suppliers of the other party to fully utilize commercial negotiations to reach agreement on the terms for accessing the regulated rates or conditions. These RTAs also confirm that if one of the parties chooses not to regulate the rates or conditions for wholesale international mobile roaming services, that party is not entitled to seek or obtain for its suppliers the access to regulated rates or conditions

of the other party by solely invoking a most-favoured-nation provision or a telecommunications-specific non-discrimination provision in any existing international trade agreement. More recently, the USMCA is the only notified agreement to explicitly compel the parties to not prohibit a PTS supplier from entering into an agreement to provide roaming services, including an agreement to provide roaming services to devices that is not limited to a transient presence in a party's territory.

In addition to regulated (wholesale) rates, some agreements, including the RTA between the European Union and Japan, consider the possibility for any interested party to take steps to enhance transparency and competition with respect to international mobile roaming rates, such as ensuring that information regarding retail rates is easily accessible to consumers. The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to explicitly require the parties to adopt or maintain measures to ensure that information on retail rates of international mobile roaming services is easily accessible to the public.

Some of these agreements, including the RTA between Australia and Singapore, require the parties endeavour to ensure that PTS suppliers in their respective territory or their respective telecommunications regulatory body make publicly available retail rates for international mobile roaming services. In some of these agreements, such as the RTA between the European Union and Japan, this transparency obligation applies specifically to PTS suppliers. Similarly, some of these agreements, including the RTA between Australia and Peru, specify that the transparency obligation applies to retail rates for international mobile roaming services for voice, data and text messages. The CPTPP is the only notified agreement to require the parties to update information on retail rates for international mobile roaming services and to provide it to the other parties on an annual basis or as otherwise agreed. The agreement further calls on the interested parties to endeavour to cooperate on compiling the information on retail rates into a report to be mutually agreed by the parties and to be made publicly available.

Most RTAs with detailed provision on international mobile roaming include some provisions on other mechanism to enhance market competition with respect to international mobile roaming rates and technological alternatives to roaming services. Some agreements, including the RTA between Australia and Singapore, contemplate the possibility for any interested party to choose to minimize impediments to the use of technological alternatives to roaming, whereby consumers when visiting the territory of that party from the territory of the other party can access telecommunications services using the device of their choice. The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to explicitly require the parties to adopt or maintain measures to minimize impediments or barriers to the use of technological alternatives to roaming services. The agreement also compels the parties to adopt or maintain measures to implement mechanisms through which the PTS suppliers enable international roaming users to control their consumption of data, voice and text messages.

5.3.5 Stolen or lost mobile terminal equipment

The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to include a specific article related to stolen or lost mobile terminal equipment. Under that article, the parties are required to establish procedures that allow PTS suppliers, established in their respective territory, to exchange and block the International Mobile Equipment Identity (IMEI) codes of mobile terminal equipment reported in the territory of another party as stolen or lost. A complementary provision further specifies that such procedures include the use of databases that the parties agree upon for this purpose.

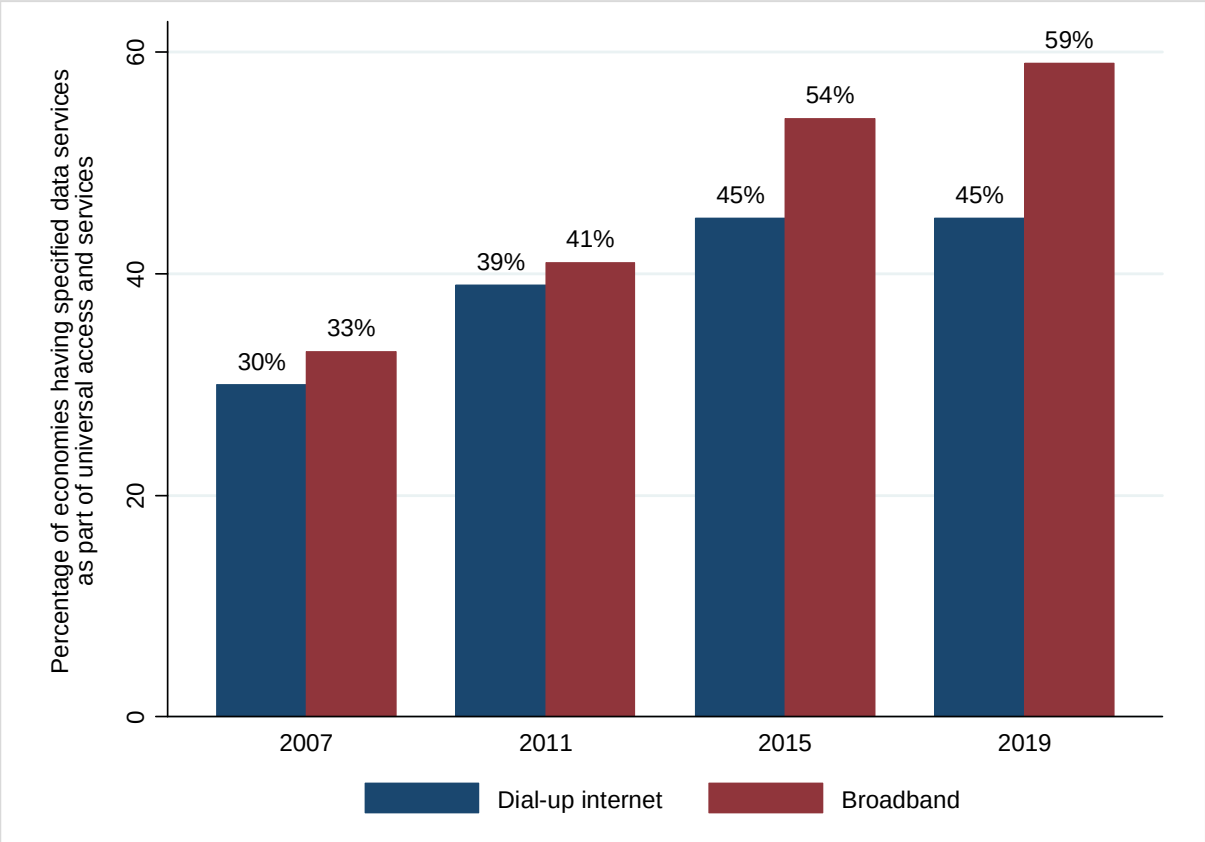
5.4 Internet access services

Not only mobile services, but also internet has grown dramatically and come to take on huge importance in the communications setting worldwide. At the time of the development of the GATS Annex and Reference Paper, the number of internet users was less than one percent of the world's population. Today, the internet is used by more than half of the world's population, and it is arguably one of the most important means of communication for business and commerce.

As explained below, neither the GATS Annex nor the Reference Paper explicitly refer to internet access services. That being said, internet access services suppliers are beneficiary of the Annex provisions for WTO members having scheduled the commitments for internet access services. Similarly, internet access services suppliers can be beneficiary of the Reference Paper, if internet access services are defined as PTTNS. As discussed in Section 3, some WTO members consider internet to be both a "transport" network or service and a "public" service. Accordingly, these WTO members are of the view that internet access may be implicitly considered as PTTNS and therefore covered by the relevant disciplines set out in the GATS Annex and Reference Paper. There is, however, no consensus among WTO members about whether or not internet access is a PTTNS.[59]

Even if not considered "basic", commercial realities indicate that internet has become essential. Moreover, an increasing number of governments cover internet access in their universal service schemes, along with other services traditionally "required" to be made readily available to the public. As confirmed in Figure 42, an increasing number of governments define universal service to include internet access.

Figure 42: Internet access is increasingly covered by universal service schemes

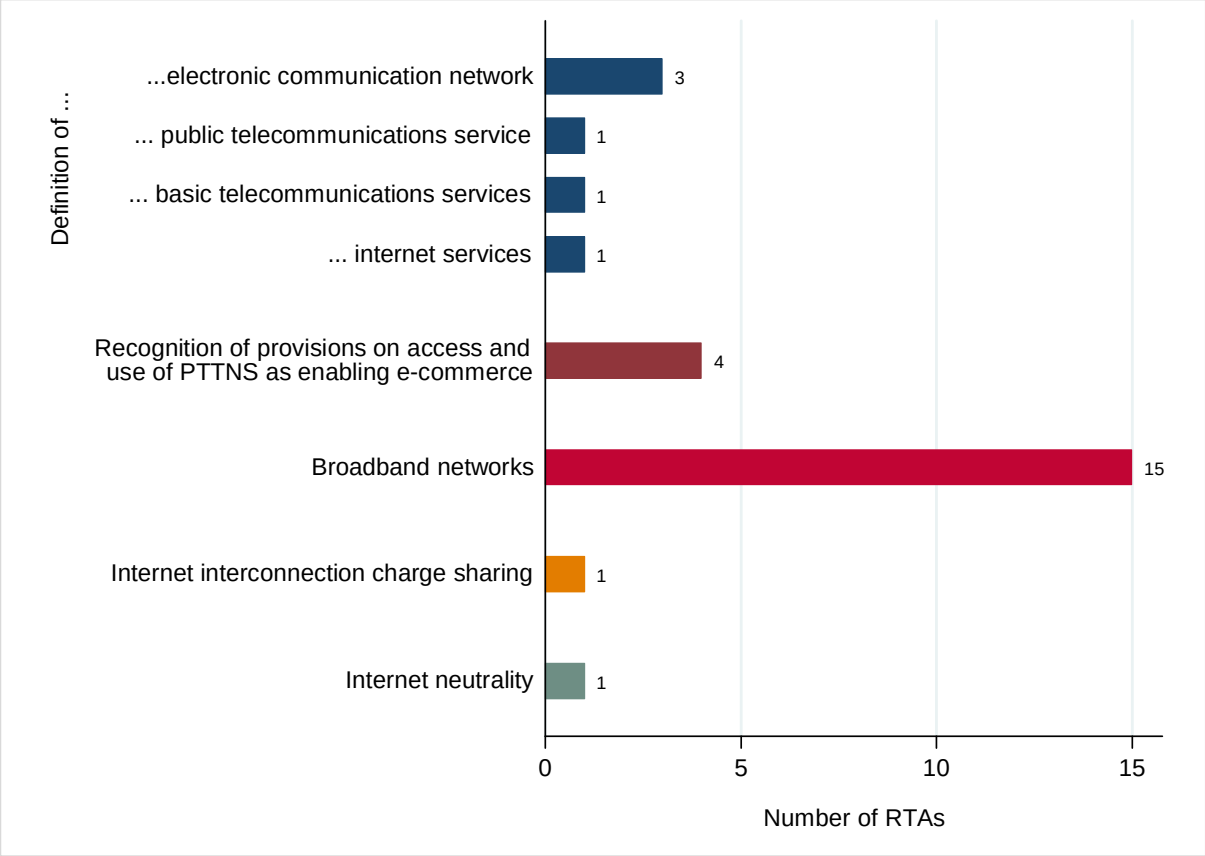


Source: Source: ITU ICT-Eye.
Note: 195 economies surveyed.

A limited number of RTAs explicitly address internet access services. As highlighted in Figure 43, provisions on internet access services cover various issues, from the coverage of telecommunications services provisions to specific provisions on broadband network, internet interconnection charge sharing and internet neutrality.

[59] Currently, more than 70 WTO members are holding informal discussions on possible trade rules on electronic commerce. The discussions were launched by a "joint statement" issued by the Ministers of interested governments at the 11th Ministerial Conference of the WTO in Buenos Aires in December 2017. One proposal includes a revised version of the Reference Paper, which would make internet access services subject to the disciplines as well as beneficiaries of them. Other proposals contain provisions on "open internet" similar to the "access to and use of the internet" provisions noted above.

Figure 43: Provisions related to internet access services are included in a limited number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

5.4.1 Scope of internet access services

While most RTAs with detailed provisions on telecommunications services do not make any explicit reference to internet access, a few agreements explicitly specify that internet access services are covered by some of the disciplines on telecommunications provisions. The way to specify the scope of internet access services differs, however, across these RTAs, as shown in Figure 43.[60]

The RTAs to which the European Union is a party with Georgia, the Republic of Moldova and Ukraine, are the only notified agreements to explicitly refer to transmission systems and, where applicable, switching or routing equipment and other resources which permit the conveyance of signals by the internet in their definition of "electronic communication network". Similarly, the RTA between Australia and Japan is the only notified agreement to explicitly confirm in its definition of "major supplier" that basic telecommunications services include internet access services. The RTA between Australia and Singapore is also the only notified agreement to specify that PTS include internet routing and connectivity services. Internet routing and connectivity allow internet access suppliers to connect and transit so that their customers can communicate globally across the network of networks that make up the internet.[61]

[60] As discussed above, several RTAs include specific cooperation provisions on ICT and telecommunications, some of which refer to cooperation on next generation internet networks.

[61] Conversely, the RTA between Bahrain and the United States specifies that in Bahrain, public telecommunications services do not include an internet service provider license, among others.

The RTA between Central America, the Dominican Republic and the United States is the only notified agreement to explicitly define internet services. This definition, found in the annex of Costa Rica specific commitments on telecommunications services, specifies that internet services include, among other things, offering the ability to access the internet.[62] Costa Rica is further committed to allow telecommunications services providers of another party, on a non-discriminatory basis, to effectively compete to supply directly to the customer, through the technology of their choice, internet services.

Besides these definition provisions found in the chapter of telecommunications services, the scope of internet access services is also implicitly addressed in the chapter of electronic commerce of a few RTAs. Some agreements, such as the RTA between Australia and Malaysia, specify that measures affecting the supply of a service delivered or performed electronically are subject, among others, to the obligations contained in the relevant provisions of the chapter on telecommunications services, subject to any exceptions set out in the RTA that are applicable to such obligations. Some of these agreements, such as the RTA between Canada and Colombia, further recognize the importance of the provisions on access to and use of PTTNS in enabling trade conducted by electronic means.

However, since the vast majority of the RTAs have not addressed scheduling and classification scheduling issues related to commitments on internet access services, it is unclear whether they can benefit from access and use rights and interconnection safeguards. The lack of clarity regarding commitments on internet access services can be particularly problematic for RTAs using a positive list approach in the schedules of specific commitments of telecommunications services because a service must be listed to benefit from the GATS Annex and Reference Paper. In the case of RTAs using a negative list approach for commitments, internet access services might be assumed to be committed if no reservations are listed, and therefore benefit from the chapter on telecommunications services. That being said, even in the later cases, whether or not internet access services can benefit from the disciplines based on the Reference Paper remains unclear as long as RTAs do not clarify whether they are to be considered basic telecommunications services.

5.4.2 Broadband networks

Broadband internet refers to high-speed internet access that can remain always on and that is faster than dial-up. Building broadband infrastructure requires substantial investment. In that context, and as discussed above, a limited number of agreements, namely 14 RTAs, include provisions that explicitly address broadband.[63]

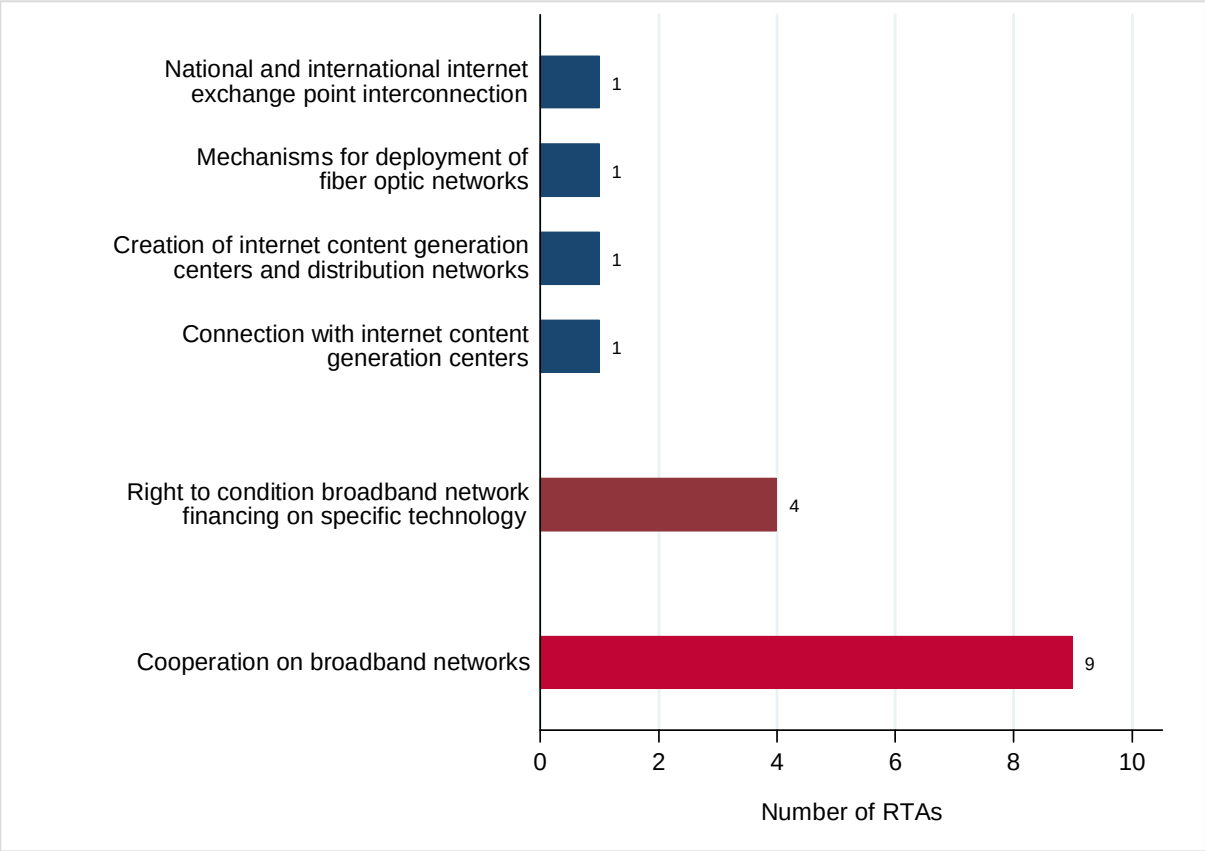
The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to include a specific article promoting the deployment of broadband networks, as displayed in Figure 44. This article compels the parties to endeavour to promote the interconnection of internet traffic between all internet service providers (ISP) within their respective territory by creating new internet exchange points (IXP). The parties are also committed to endeavour to promote IXP interconnection between their territories. The parties are further committed to endeavour to adopt or maintain measures to ensure that public works projects contemplate mechanisms that facilitate the deployment of fiber-optic networks or other telecommunications networks. Another obligation laid out in this article on broadband requires, to endeavour, adopt policies that promote the installation of internet content generation centers and distribution networks in the parties' respective territories. The parties are also required to endeavour to encourage the deployment of telecommunications networks that connect users with the main internet content generation centers worldwide.

The remaining provisions on broadband are found in several other agreements. As discussed above, a couple of agreements, including the RTA between Australia and Singapore, recognize the parties' right to make the financing of the development of broadband networks conditional on the use of particular technologies that meet specific public policy interests. Other broadband-related provisions relate to potential cooperation activities. For instance, the implementation agreement between Japan and the Philippines lists next generation internet, broadband networks and ubiquitous networks; as well as circulation of digital content over broadband networks as potential areas of cooperation.

[62] Under the RTA between Central America, the Dominican Republic and the United States, Costa Rica is not subject to the obligations established in the chapter on telecommunications services. Instead, Costa Rica undertakes the specific commitments set out in the annex.

[63] Although not include in this figure, the RTA between Australia and the United States in a letter exchange lists broadband as current issues where the potential for rapid future change may justify discussion.

Figure 44: Provisions on broadband networks are found in a limited number of RTAs



Source: Own calculations.
Note: The analysis considers only notified RTAs currently in force.

5.4.3 Internet interconnection charge sharing

The cost distribution between network providers, application and service providers, content providers, and internet users may affect, among other things, access to and use of the internet. Although not covered in any chapter on telecommunications services, a couple of very recent RTAs, including the CPTPP, incorporate a specific provision related to internet interconnection charge sharing in their respective chapter on e-commerce. This provision recognises that a supplier seeking international internet connection should be able to negotiate with another party's suppliers on a commercial basis issues, such as compensation for the establishment, operation and maintenance of facilities of the respective suppliers.

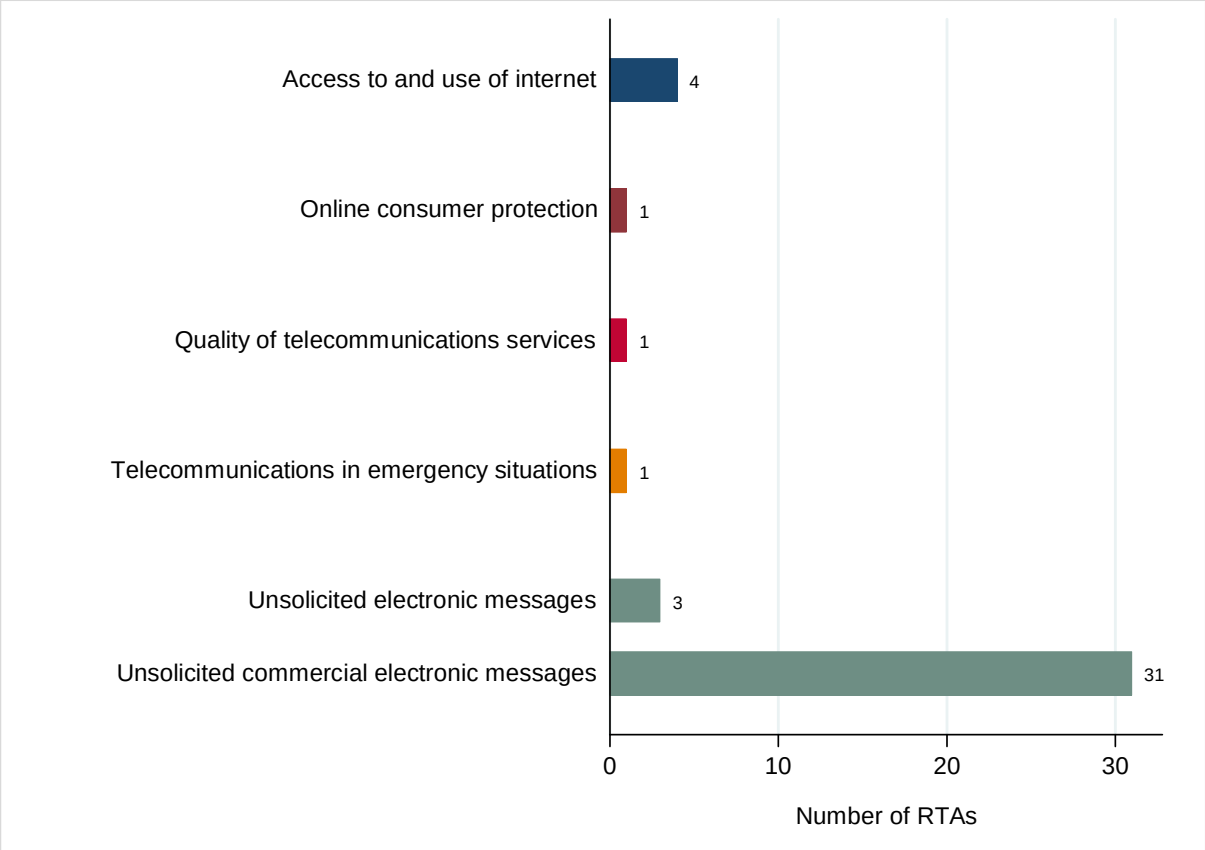
5.4.4 Internet neutrality

Internet neutrality refers to the principle that internet service providers or broadband service providers must treat all data on the internet equally to ensure that businesses and consumers can access and use the internet under fair and non-discriminatory conditions. The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to explicitly require the parties to adopt or maintain measures to ensure compliance with internet neutrality, as defined in accordance with their respective legal system.

5.5 Consumer rights

Over the years, and as the use of telecommunications services has increased, an increasing number of countries have adopted laws establishing specific rights to end-users accessing and using telecommunications, internet and online services. While the beneficiaries of the GATS Annex and Reference Paper are, respectively, suppliers of all scheduled services and suppliers of basic telecommunications services, a limited number of agreements establish various disciplines guaranteeing the rights of consumers to access and use telecommunications services, including internet access and mobile services, as highlighted in Figure 45.

Figure 45: Provisions related to the rights of consumers of telecommunications services are found in a limited number of RTAs



Source: Own calculations and updated from Montero and Teh (2017).
Note: The analysis considers only notified RTAs currently in force.

5.5.1 Access to and use of internet

Although explicit provisions on consumers' internet access and use are not found in any chapter on telecommunications services, a couple of agreements, including the RTA between the Republic of Korea and the United States and CPTPP, establish a number of principles related to the access to and use of the internet in their respective chapter on e-commerce (Monteiro and Teh, 2017).

Some of these agreements recognise that consumers should be able to access and use the digital products and services they choose, unless prohibited by the parties' respective law or subject to reasonable network management. These agreements further recognise that consumers should be able to run applications and services of their choice, subject to the needs of law enforcement, as well as be able to connect their choice of devices to the internet, provided that such devices do not harm the network and are not prohibited by the parties' respective law.

A couple of agreements, including the CPTPP, recognise also the benefits of consumers having the ability to access information on the network management practices of a consumer's internet access service supplier subject to applicable policies, laws and regulations. The RTA between the Republic of Korea and the United States also recognizes that consumers should be able to have the benefit of competition among network providers, application and service providers, and content providers.

5.5.2 Consumer protection

Consumer protection refers to the practice of preventing firms from engaging in unfair or fraudulent practices in order to gain an advantage over competitors or to mislead consumers. While a limited but increasing number of RTAs incorporate provisions on consumer protection in general, some agreements include specific provisions on consumer protection of telecommunications services and e-commerce transactions.

The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to explicitly guarantee the right of end-users of telecommunications services to consumer protection. In particular, the parties are required to ensure the supply of telecommunications services is provided in accordance with the quality parameters contracted or established by the competent authority. The parties are further required to ensure people with disabilities have access to information regarding their rights.

Provisions on consumer protection of e-commerce transactions are relatively more common and found in an increasing number of RTAs (Monteiro and Teh, 2017; WTO, 2018). These provisions on digital consumer protection range from the importance of digital consumer protection to cooperation to obligations to adopt consumer protection measures and promote fair business practices and cross-border consumer settlement mechanisms.

5.5.3 Service quality

One specific dimension of consumer protection relates to the protection of buyers of goods and services against low quality products. In that context, the Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to establish specific obligations of quality of telecommunications services. The parties are specifically required to adopt measures to regulate, monitor and oversee the quality of PTS using indicators, parameters and procedures established by their respective telecommunications regulatory body. The parties are further required to publish indicators of service quality to PTS end-users. The methodology used to calculate or measure the service quality indicators and their corresponding objectives have to be provided to any party making the request.

5.5.4 Emergency situations

Public safety is supported by rapid and efficient communications in case of an emergency. The Additional Protocol to the Framework Agreement of the Pacific Alliance is the only notified RTA to set out explicit disciplines regarding the provisions of public telecommunications services in case of emergency situations. In particular, the parties are required, to endeavour, to adopt the necessary measures so that telecommunications companies transmit, at no cost to users, the alert messages defined by their competent authority in emergency situations. The parties are further compelled to encourage providers of telecommunications service to protect their networks against serious failures caused by emergency situations, in order to guarantee citizens' access to telecommunications services in case of emergency situations. The parties are also required to evaluate the possibility to adopt measures requiring providers of mobile services to ensure international roaming users of the other parties can make calls to their respective country's toll-free emergency numbers. More generally, the parties are committed to manage, in a joint and coordinated manner, actions related to telecommunications in emergency situations.

5.5.5 Unsolicited electronic messages

Unsolicited electronic messages, commonly known as spamming, are electronic messages sent to an electronic address without the consent of the recipient using internet or other telecommunications service. While the issue of unsolicited commercial electronic messages is addressed in an increasing number of provisions on e-commerce, a couple of RTAs address more broadly unsolicited electronic messages, and not only commercial messages, in their respective chapter or annex on telecommunications services (Monteiro and Teh, 2017).[64]

In particular, the RTAs to which Japan is a party with Australia, India and Switzerland require the parties to take appropriate and necessary measures to regulate unsolicited electronic messages. The RTAs negotiated by Japan with Australia and Switzerland further foresee the possibility for the parties to work together bilaterally and in multilateral fora to promote initiatives that improve trust and confidence in the use of telecommunications services. The RTA between India and Japan also commits the parties to share with each other information, including laws, regulations and best practices, in relation to the fight against unsolicited commercial email for advertising purposes.

6 CONCLUSION

Telecommunications have witnessed important market reforms since the 1990s. The WTO catalysed and captured in binding market access commitments some of the early market reforms through the GATS, its Annex on Telecommunications and the Reference Paper on Regulatory Principles on Basic Telecommunications.

At the same time, an increasing number of WTO members have introduced explicit telecommunications provisions in their RTAs. Despite the growing number of RTAs with detailed provisions on telecommunications, the literature does not provide a comprehensive and detailed typology of all explicit telecommunications provisions incorporated in RTAs. This paper filled this gap by identifying commonalities and differences in addressing explicitly telecommunication in RTAs in light of existing WTO rules.

The detailed mapping and analysis of all RTAs notified to the WTO reveal that while some RTAs draw heavily on WTO rules, in particular the GATS Annex and the Reference Paper, many other RTAs use WTO rules as a baseline and add clarifications. One of these clarifications refers to the obligation to ensure that telecommunications regulatory bodies are equipped with the enforcement powers necessary to fulfil their responsibilities under the obligations. Other clarifications include the confirmation that resale-based services are eligible for rights of access or that interconnection agreements should be commercially negotiated among the suppliers.

Some RTAs prescribe particular regulatory practices to be used to implement the obligation concerned. These prescribed methods include a light-handed regulation approach, streamlined licensing procedures, and market-based methods of allocating scarce resources. Other prescriptions include accounting separation for operators, structural separation between regulators and PTTNS, and filing interconnection agreements with regulators.

While most RTAs maintain a scope and coverage that is equivalent to that of existing WTO rules on telecommunications services, a limited number of RTAs extend the coverage to additional categories of the services and service suppliers, namely value-added services and suppliers. Most of these provisions extend the disciplines applicable to PT(T)NS to value-added services, such as anti-competitive safeguards and transparency requirements.

[64] Provisions on unsolicited commercial electronic messages ranges from commitments to adopt regulations addressing unsolicited commercial electronic messages to cooperation activities (Monteiro and Teh, 2017, and WTO, 2018)

An increasing number of RTA provisions cover new regulatory issues. Some of these new issues, often limited to a few RTAs, reflect evolution of best practices and technological developments, such as co-location, access to local loop unbundling, number portability, dialling parity, international mobile roaming, internet access services and consumer rights. Other new regulatory issues are added in relation to certain WTO rules. Some of these new regulatory issues that strengthen some of the WTO provisions, include access to and use of PT(T)NS on cost-oriented basis, data security and confidentiality, expanded scope of dispute resolution mechanisms, and opportunity to comment on draft regulatory measures.

Given the dynamic nature of both the telecommunications sector and RTAs, telecommunications provisions are likely to keep evolving with new and more comprehensive types of provisions to reflect ongoing and future regulatory and technological changes in the sector. However, there are still some unresolved uncertainties in many RTAs. Some agreements exempt mobile services from some disciplines that are particularly relevant to mobile services and equipment, such as number portability and dialling parity. Similarly, most agreements do not clarify the extent to which telecommunications rules apply to internet access services. Moreover, none of the notified RTAs have addressed scheduling and classification issues related to commitments on internet access services, which would ensure that their suppliers can benefit from access and use rights and interconnection safeguards.

REFERENCES

Burri M. (2020) Telecommunications and Media Services in Preferential Trade Agreements: Path Dependences Still Matter. In: Hoffmann R., Krajewski M. (eds) Coherence and Divergence in Services Trade Law. European Yearbook of International Economic Law. Springer, Cham.

Gootiiz, B., Jonetzko, G., Magdeleine, J., Marchetti, J. and Mattoo, A. (2020), "Deep trade agreements in services: Findings from a new database2, in Mattoo, A., Rocha, N. and Ruta, M. (eds), Handbook of Deep Trade Agreements, Washington D.C.: World Bank.

International Telecommunication Union, 2020. Statistics. https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx

Monteiro, J.-A. and Teh, R. (2017), "Provisions on Electronic Commerce in Regional Trade Agreements", WTO Working Paper ERSD-2017-11, Geneva: World Trade Organization (WTO).

Monteiro, J.-A. (2021), "Hold the line: Evolution of telecommunications provisions in regional trade agreements", WTO Working Paper ERSD-, Geneva: World Trade Organization (WTO).

Tuthill, L. and Sherman, B. Laura, "Telecommunications: Can trade agreements keep up with technology?", chapter of *Opening Markets for Trade in Services; Countries and Sectors in Bilateral and WTO Negotiations*, Cambridge Univ. Press and WTO, 2008, Eds. Marchetti, M.Roy.

World Trade Organization (WTO) (1991), Services Sectoral Classification List, Note by the Secretariat, MTN.GNS/W/120.

World Trade Organization (WTO) (1994), Decision on Negotiations on Basic Telecommunications, Ministerial Decision annexed to the Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations.

World Trade Organization (WTO) (1997), Group on Basic Telecommunications, Chairman's Note on Scheduling Basic Telecommunications Services Commitments, S/GBT/W/2/Rev.1.

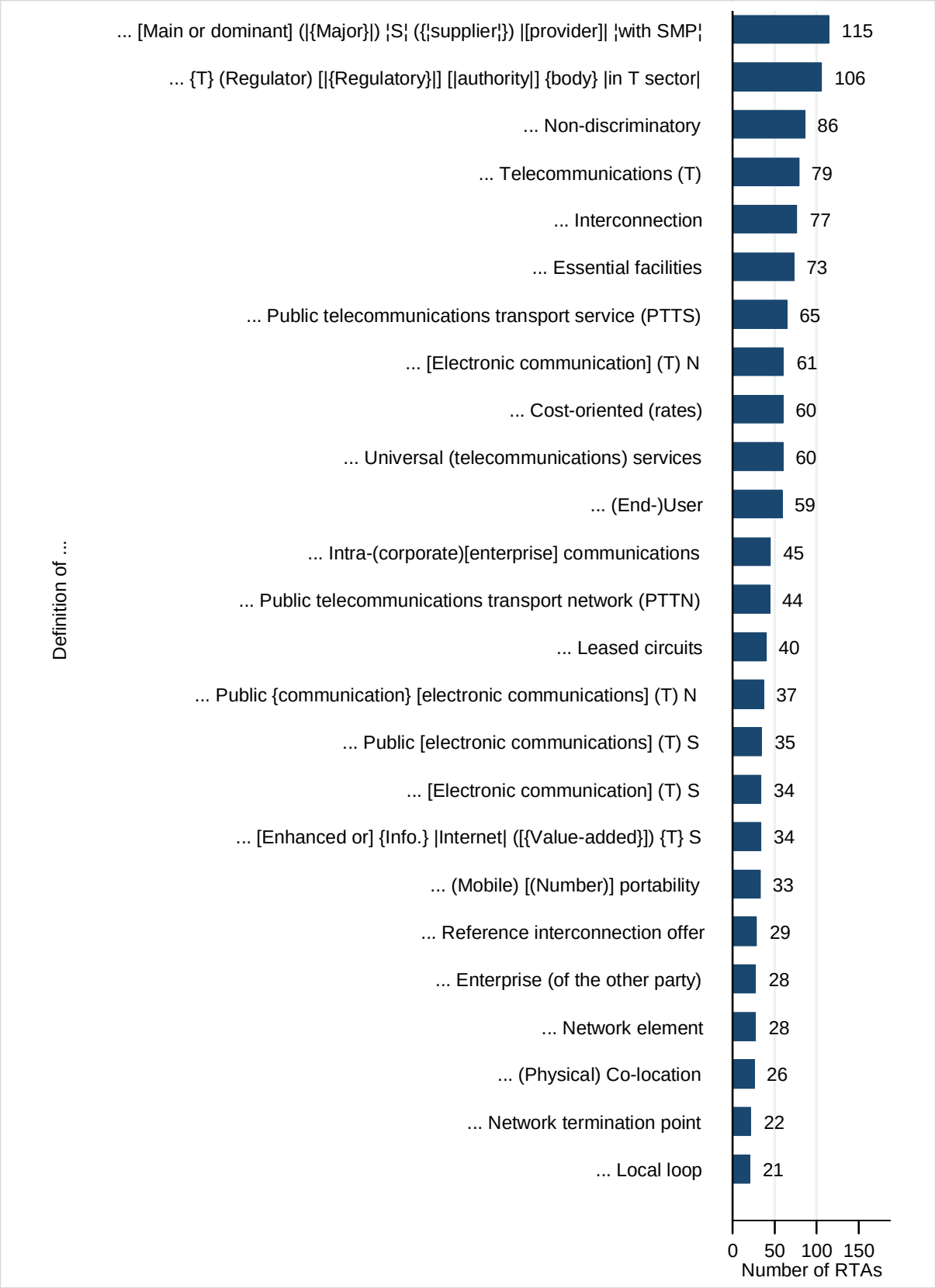
World Trade Organization (WTO) (1997), Group on Basic Telecommunications, Chairman's Note, Market Access Limitations on Spectrum Availability, S/GBT/W/3.

World Trade Organization (WTO) (2004), Panel Report, Mexico – Measures Affecting Telecommunications Services, WT/DS204/R.

World Trade Organization (WTO) (2018), "World Trade Report 2018 – The future of world trade: How digital technologies are transforming global commerce", Geneva: WTO.

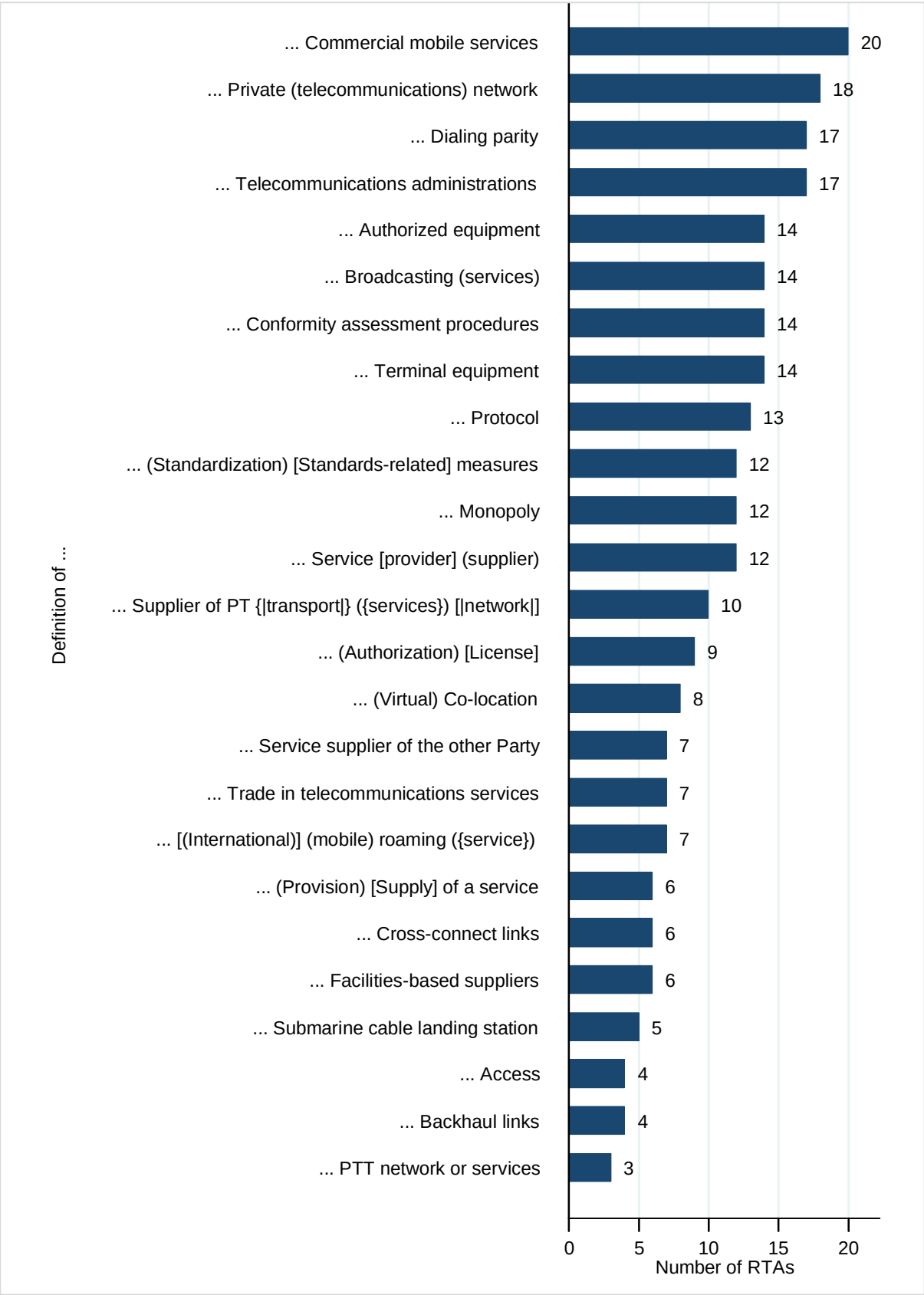
ANNEX

Figure A1: List of telecommunications-related definitions found in RTAs



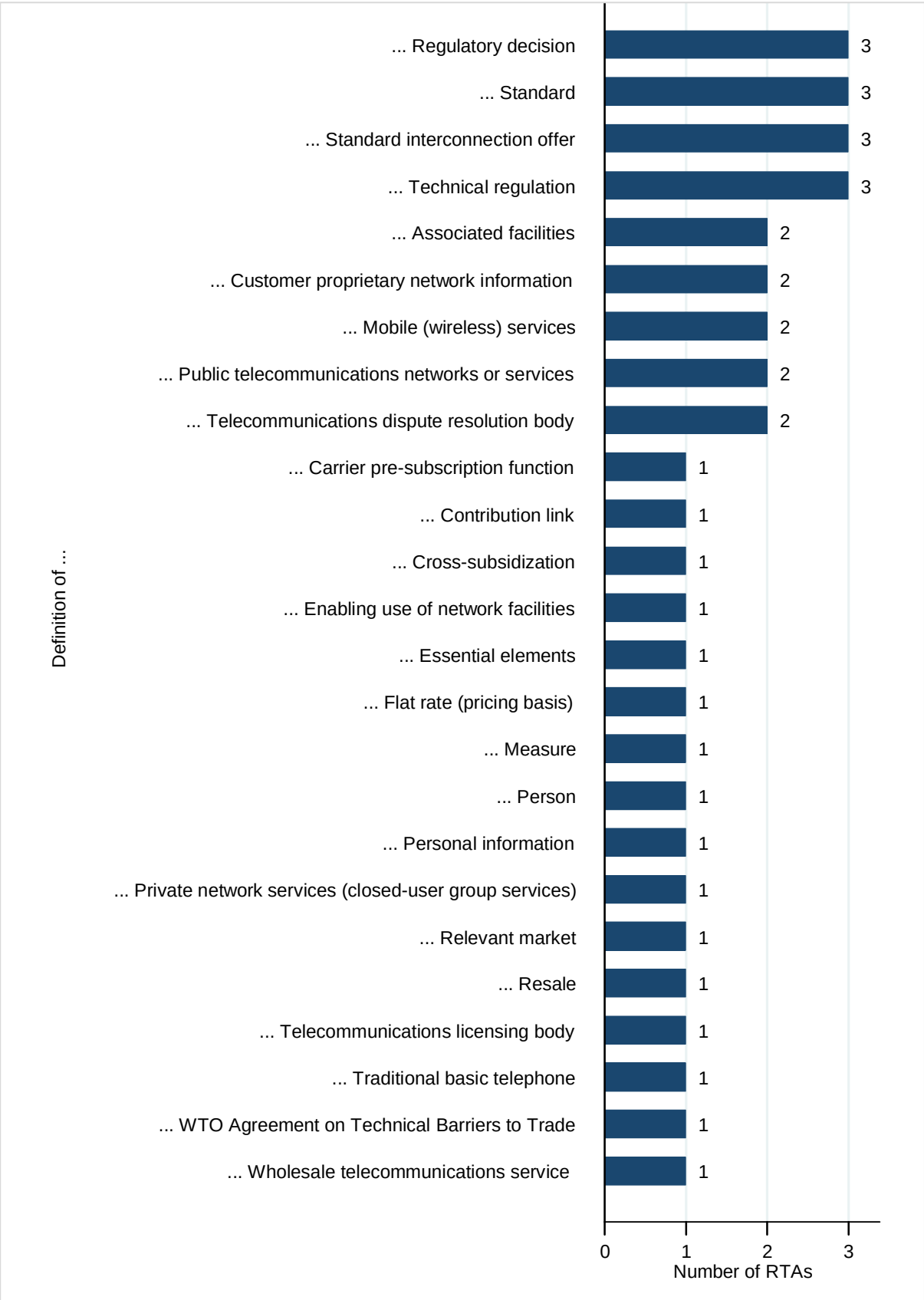
Source: Own computation based on mapping of telecommunications provisions in RTAs.
Note: The graph considers notified RTAs currently in force. The following abbreviations read as follows: N = network(s); S = service(s); SMP = significant market power; and T = telecommunication(s).

Figure A1: List of telecommunications-related definitions found in RTAs (continued)



Source: Own computation based on mapping of telecommunications provisions in RTAs.
Note: The graph considers notified RTAs currently in force. The following abbreviations read as follows: N = network(s); and T = telecommunication(s).

Figure A1: List of telecommunications-related definitions found in RTAs (continued)



Source: Own computation based on mapping of telecommunications provisions in RTAs.
Note: The graph considers notified RTAs currently in force.