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The Regulatory Implications of GATS Modal Commitments in Digitally Delivered Services

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Abstract

There is an interface among the mode-based scheduling of commitments under the GATS, the fast-paced digitalization of services trade, and the regulatory autonomy of WTO Members. Digitalization has an enormous impact on how services are traded across borders. This impact also has important implications for the regulatory space of Members in the digital sector. By employing a doctrinal legal research approach, this paper analyzes and examines how commitments entered during the pre-digital GATS era constrain the regulatory freedom of Members to regulate cross-border services trade. Mode 1 commitments were entered before the escalation of digitalization and have fewer limitations, unlike modes 3 and 4. Accordingly, the imposition of such regulatory measures as data localization laws, fintech, and platform regulations may be challenged under the GATS for contravening the market access and national treatment guarantees provided in Articles XVI and XVII.

Keywords: Digitalization, Digital Services, GATS, Modal Commitments, Mode of Supply, Services Trade

1. Introduction

Digitalization is altering international trade transactions, and the use of digital technologies is transforming how services are delivered worldwide (IMF et al., 2023). Digital trade is defined as a composite of all international transactions that are either digitally ordered and/or delivered (Ibid). Digitally ordered trade refers to the international sale of goods and/or services through computer networks using methods specifically designed to place or receive orders (UNCTAD, 2022a). Digitally delivered trade, on the other hand, implies international transactions delivered remotely in electronic form through computer networks (Ibid).

Digitalization is expected to provide a robust shift from merchandise trade towards services, particularly Digitally Deliverable Services (DDS) (Bekkers et al., 2024). In fact, the export of digitally enabled services has grown by 90% from 2015 to 2024 in high-income countries and by 125% in lower and upper-middle income countries (McDaniel et al., 2025). The share of such services in the global economy is expected to rise to 17.4% by 2040 from the baseline 12.4% in 2017 (Bekkers et al., 2024). The Organization for Economic Co-operation and Development (OECD) also reported the share of digital services to be 25% of the global economy as early as 2020 (OECD, 2020). Reports also stress the impact the COVID-19 pandemic had on boosting the demand for digital services (McDaniel et al., 2025). While trade in goods expanded at a yearly rate of 5.6% between 2005 and 2022, cross-border digital trade rose by a yearly average of 8.1% in the same time period (IMF et al., 2023).

The increasing significance of digital trade in the global economy is also accompanied by such other issues as widening gaps in terms of accrued benefits and regulatory challenges. While developed countries reap much of the benefits of the digital economy, the share of least developed countries (LDCs) remains much lower, with an estimated 0.2% share of digital services exports in 2022 (UNCTAD, 2022a). The share of developing countries in global digital trade, however, showed incremental progress from 19% in 2010 to 24% in 2022 (Ibid). The availability of limited infrastructure, poor institutional quality in terms of the regulation of the digital space, and shortages of human capital affect the digital trade performance of LDCs (Mwange et al., 2026).

Scholars have discussed digital trade and its regulatory challenges. These discussions mostly revolve around the mismatch between the increasing sophistication of the Internet economy and the fragmented traditional regulatory frameworks in place across jurisdictions. Such regulatory hurdles also unfolded due to the insufficiency of the current framework under the General Agreement on Trade in Services (GATS). Gao (2014) identified the bottlenecks that hinder the effectiveness of the GATS to regulate

the Internet economy. Firstly, the classification of Internet services that emerged late after the inauguration of the United Nations Provisional Central Product Classification (CPCprov) proved to be slippery. That is, the GATS used the classification list in CPCprov, which was developed in the pre-Internet era and is therefore deemed inadequate to govern the current Internet economy.

Although the latest version of the CPCprov appears to include a broad range of Internet services, updating the existing schedules of commitments in accordance with this version would be a daunting task without detailed scrutiny by Members (Gao, 2014, pp. 350-51). Secondly, the problem with the classification system used by the GATS also spills over to the interpretation of schedules by inducing ambiguities in terms of sectoral coverage. Here, Gao (2014) also argues that the difficulty of classifying Internet services poses scheduling challenges due to the lack of a distinct classification applicable to such services. This, in turn, proves the insufficiency of the GATS regulatory framework to adequately govern Internet services.

Furthermore, digital services do not fall distinctly into one of the four modes of supply. As Ahmed et al. (2015) argued relying on the US — Gambling case, Internet services could be classified as mode 1 or 2 services depending on how they are provided in cyberspace. That is, such services could be “pulled” by the consumer and hence classified as a mode 1 service, or “pushed” by the service provider to the consumer, making them a mode 2 services (Ahmed et al., 2015). Gao (2014) also pinpointed a scenario when Internet services might also be considered as mode 3 when a server is kept by the service supplier in the home territory of the consumer.

Under the GATS, specific schedules of commitments are entered in a mode-specific manner. This mode-based scheduling of commitments under each of the four modes is a central feature of schedules of commitments undertaken by WTO Members on the market access (Article XVI) and national treatment (Article XVII) obligations. Mode 1 refers to the cross-border supply of services (e.g., digitally); mode 2 is the travel abroad of consumers to service providers; mode 3 is the commercial presence of service providers within foreign markets; and mode 4 implies the temporary movement of natural persons to consumers in other territories to provide services. Thus, the scheduling of commitments on services, including digital and digitally delivered services, is undertaken in a mode-based approach.

The regulatory challenges associated with digital services are linked with jurisdiction and enforcement for domestic regulators (Zittrain, 2003; Hestermeyer, 2006). Jurisdiction lies at the crux of the matter, as nation-states often find themselves embroiled in disputes over whether acts committed in cyberspace from various locations can be litigated in their local courts. In relation to this, the enforcement of

decisions by local courts against persons, both physical and juridical, who lack physical presence within their local jurisdiction, poses another regulatory challenge. At the global level, reaching consensus and establishing a multilateral system to regulate digital trade flows is the major bottleneck.

The aim of this paper, however, is not to explore the various domestic and international regulatory hurdles tied to digital trade but to identify and examine how mode-based scheduling of commitments under the GATS poses regulatory challenges to cross-border digital trade. In particular, it studies the interface between modal commitments and regulatory constraints that emerge with the advent of digital services and when services become digitally deliverable.

The paper is structured as follows. Section 2 discusses the methodology employed, while Section 3 provides an overview of the GATS modal commitments and their legal consequences. Section 4 describes the regulatory effects of modal commitments in digitally delivered services. Section 5 identifies three of the major emerging regulatory issues in digital services and their interface with the mode-based scheduling of commitments under the GATS. Lastly, Section 6 discusses the implications of digitalization on the regulatory autonomy of WTO Members, and Section 7 provides the conclusion.

2. Methodology

This paper adopts a doctrinal legal research methodology to textually analyze the relevant provisions of the GATS (Articles XVI and XVII), as per the rules of interpretation enshrined in the Vienna Convention on the Law of Treaties, and to apply them to digital service supply under mode 1. The 2001 Scheduling Guidelines of the WTO's Council for Trade in Services (hereinafter, Scheduling Guidelines) are used to examine the implications of modal commitments in the digital regulatory space of WTO Member countries. Secondary sources, including journal articles, working papers, websites, and other WTO sources, were used to identify the role of digitalization in services trade and the regulatory measures affecting cross-border services trade. It also used rulings of the WTO panel and Appellate Body in cases, e.g., *China – Electronic payments* and the *US – Gambling*, respectively. WTO jurisprudence is used to illustrate the regulatory implications of mode-based commitments in digitally delivered services.

3. The Legal Structure of the GATS Modal Commitments

3.1 *The Four Modes of Supply*

Services under the GATS are traded through four modes of supply. As per Article I:2 of the Agreement, the four modes rely on the geographic location of the consumer and the supplier. In addition, the GATS also provides for the liberalization of services trade through successive rounds of negotiations. These liberalizing commitments are undertaken through mode-specific schedules of commitments annexed to the GATS.

Mode 1, as stipulated in Article I:2 (a), refers to the cross-border supply of services without requiring the service supplier's physical presence in the consumer's territory. According to the WTO's trade by mode of supply statistics, services supplied through this mode accounted for 34.7% of exports and 33.6% of imports in international services trade in 2022 (WTO, n.d.a). In comparison with the other three modes, commitments are entered as "unbound" in schedules due to technical infeasibility and/or regulatory issues, including data localization laws, which make service delivery through this mode difficult (WTO, n.d.b). On the other hand, Article I:2 (b) of the GATS provides for mode 2, or consumption abroad, which denotes the travel of consumers abroad to service providers in another territory. Despite being the most "unrestricted" mode of supply in schedules of commitments, services traded through this mode accounted for only 8% of exports and 7.5% of imports globally (WTO, n.d.a). Services are also traded through the commercial presence of service providers in consumers' territories, as provided under Article I:2 (c) of the GATS. Mode 3, as it's called in the literature, represents the largest share of international services trade in terms of exports and imports, at 56.1% and 57.9%, respectively, in 2022 (Ibid).

Lastly, mode 4 is the temporary movement of natural persons to the territory of another Member State to render services. The GATS under Article I:2(d) states that services may also be provided by service providers being physically present in the territory of consumers. The trade of services through this mode accounted for 1.2% in exports and 0.9% in imports in 2022 (Ibid).

3.2 *Scheduling Specific Commitments*

The progressive liberalization of services trade, as set out in Article XIX of the GATS, is to be attained through successive rounds of negotiations on specific commitments among Member countries. The realization of free global services trade without restrictive barriers, as stipulated under Article XX of the Agreement, is undertaken through specific schedules of commitments. These schedules, as binding access

guarantees, are negotiated under Articles XVI and XVII of the GATS, concerning market access and national treatment, respectively.

Market access commitments (Article XVI) are undertaken under each mode to grant equal access as per the conditions specified in the Schedule of a Member to services and service providers of other Members. Moreover, unless specified in a Schedule undertaken by a Member, the restrictions enumerated in paragraph 2 (a) - (f) of Article XVI concerning limitations on the number of service providers, the requirement of economic needs test, limitations on the total number of service operations, etc., are not to be made on the market access guarantees.

National treatment commitments (Article XVII) may also be entered across modes to ensure no less favorable treatment is accorded to foreign services and service providers from those of the domestic services and service providers. Commitments are, therefore, undertaken to render formally similar or formally different treatment to foreign services and service suppliers as those like services and service suppliers of a Member. Limitations in terms of conditions and qualifications to the requirement inscribed under this Article are to be entered across modes. Thus, varying levels of conditions and qualifying requirements may be entered as “limitations” in any of the four modes of supply.

3.2 Legal Effects of Modal Commitments

Schedules of specific commitments are legal instruments that serve as binding access guarantees (Adlung & Mattoo, 2007, p. 56). The positive list approach of the GATS allows Members to commit the services sectors of their choice selectively (Id., p. 54). Accordingly, the regulatory measures that a Member may intend to maintain or introduce in those sectors must be explicitly reserved in its Schedule. Thus, depending on the type of entry, that is, “unbound”, “none”, and “limitation” in each mode for each sector and sub-sector committed, a Member is obliged to provide the access guarantees stipulated under Articles XVI and XVII.

An entry of “none” in any of the modes of supply refers to the willingness of a Member to fully commit to liberalization without any limitations on market access or national treatment for the services scheduled (Yu, 2002). An “unbound” entry indicates a reservation by the Member to introduce or sustain any legal or regulatory impositions that may restrict the access guarantees (Ibid). An entry of “limitations” to national treatment and market access, on the other hand, refers to conditions that apply to the access guarantees, which might be existing national policies, laws, or regulations (Ibid). As any of these entries may be made in each mode of supply, they define the extent of the bindingness of the market access and national treatment obligations in the schedules.

The modal commitment of access guarantees in schedules, therefore, determines the existence and scope of a Member's enforceable obligations to liberalize its domestic services market. Accordingly, the obligation to enforce depends on the specific type of entry applicable to each mode.

4. Regulatory Implications of Modal Commitments in Digital Contexts

4.1 Market Access Constraints

Commitments undertaken in mode 1 under Article XVI of the GATS limit Members' regulatory freedom to impose constraints on cross-border digital services trade. Regulatory measures that interfere with market access guarantees in mode 1 with an “unbound” or “limitations” entry may include restrictions on the operation of foreign digital service platforms, limitations on the number of foreign digital service providers, or an obligation to maintain a local commercial presence, among others.

The quantitative-discipline model employed by paragraph 2 of Article XVI prohibits the imposition of any of the limitations listed in sub-paragraphs (a) to (f). These quantitative limitations, instead, have to be entered in schedules of commitments if Members intend to make reservations on the market access guarantees rendered by them.

a. Zero Quota and Prohibitions

Article XVI:2 (a) and (c) of the GATS prohibit the imposition of limitations on the number of service providers and the total quantity of service outputs, respectively. However, Members' schedules of commitments may impose limitations, such as numerical restrictions or total bans (i.e., zero quotas). Such restrictions may also be introduced through regulatory measures.

The implications of such regulatory measures on digital services trade may emerge from direct or indirect prohibitions. Direct restrictions prohibiting the cross-border supply of digital services may span from bans on foreign online streaming services, fintech services, gambling and betting services, or cross-border professional services. On the other hand, indirect restrictions may take the form of data localization laws, network inaccessibility for foreign services, and stringent licensing and technical requirements for foreign service suppliers.

In the *US – Gambling* case, the United States' ban on the cross-border gambling and betting services provided by Antigua was flagged as a violation of Articles XVI:2(a) and (c) of the GATS. The Appellate Body ruled that the regulatory limitations imposed by the United States through the Wire Act, the Travel Act, and the Illegal Gambling Business Act amounted to a zero quota on the cross-border (mode 1) betting and

gambling services disputed in the case. Mode 1 in the United States' Schedule of Commitment has an entry of "unbound"; the regulatory Acts were introduced subsequently. The Appellate Body's decision has an important implication for digitally delivered services, as they are delivered through mode 1. That is, regulatory measures may entirely affect the market access rights of service providers delivered through cross-border digital infrastructures and such measures might be considered as a zero quota.

b. Restrictions on Legal Form

Article XVI:2(e) of the GATS prohibits Members from requiring service suppliers to adopt any legal form or to establish joint ventures with local suppliers. As discussed for the other prohibitions, limitations must be explicitly made in the specific schedules of commitments undertaken by Members. Organizational structures that limit market access may take forms such as mandatory incorporation as a local company, even when services are digitally delivered; mandatory operation through subsidiaries or local branches; or mandatory requirements to form joint ventures with domestic partners. Here, such regulatory measures may be justified given the difficulties of governing digital services and service providers. Issues such as taxation, liabilities, and consumer protection are often easier to enforce against legal entities within the jurisdiction of a Member.

Such access limitations, if imposed on mode 1 services, including digital services, may bring forth a doctrinal clash between modes 1 and 3. That is, digital services fall under mode 1, but access limitations may be imposed under mode 3 for similar services, thereby making commercial presence mandatory for services to be delivered. Contrary to the intent of Article XVI:2(e) of the Agreement, such access requirements effectively convert mode 1 services into mode 3. Therefore, hindering the market access of foreign digital service providers under the guise of mandatory local incorporation and such other related regulatory measures.

c. Foreign Capital Limitations

According to Article XVI:2 (f), when Members have undertaken a market access commitment in a given sector and modes (in this particular case, mode 1), limits should not be imposed on the value of foreign investment or percentage of maximum foreign shareholding. Regulatory measures in such contexts may take the form of limits on foreign equity ownership, total foreign investment, or requirements for majority domestic ownership. Digital services in areas such as fintech and digital payment services, telecom and data infrastructure, and the platform economy are targets of regulatory measures that may be justified by national security and economic

development policies, among others. Regulatory restrictions on foreign capital in the telecom and data infrastructure sector limit foreign investment in data centers and cloud infrastructure. In addition, foreign equity may also be restricted in e-commerce and content distribution services.

Although capital limitations may seem irrelevant to cross-border digital services trade, hybrid business models may necessitate the coming into play of Article XVI:2 (f) of the GATS. The supply of cross-border services may rely upon local investment infrastructure, including a server. Market access may, therefore, be constrained through indirect control of digital entry through caps imposed in various sectors deemed to have strategic importance.

If the cross-border supply of digital services depends on local infrastructure, foreign capital regulatory limitations targeting an initially unbound mode 3 in a schedule of commitment affect the delivery of such services. Capital restrictions are primarily imposed on mode 3 supplies, but indirectly hamper mode 1 digital services trade. The introduction of regulatory requirements or limitations deters foreign digital service suppliers from establishing a commercial presence, forcing the restructuring of business models, or may limit the extent and scalability of foreign investment. Further, the regulatory measures may also serve as quantitative restrictions or an instrument of market exclusion.

d. Economic Needs Test (ENT)

An Economic Needs Test (ENT) limits market access as a regulatory control mechanism by conditioning it upon governmental need for additional service suppliers in a certain sector or sub-sectors. Article XVI:2 (a) - (d) of the GATS prohibits the use of an ENT to introduce a quantitative restriction. That is, unless reservations are made in the schedules of commitments, ENT should not be introduced to limit the number of service suppliers, the total value of service transactions, or the total number of foreign professionals temporarily deployed in the territory of a Member.

In the realm of digital service trade, the regulatory purpose of ENTs may rely on various factors. Thus, regulators may consider market saturation, consumer demand, public interest, and stability concerns. While market saturation determines the market's capacity to absorb additional service suppliers, the scalability of the digital services market also relies on consumer demand. To determine consumer demand, regulators may assess unmet public needs and gaps in service deliveries. Furthermore, public-interest and stability concerns, such as financial stability, cyber security, systemic risks, and infrastructure resilience, may also be considered by regulators when assessing economic need in a domestic market.

The mode-based scheduling of commitments determines the practical operability of ENTs as a regulatory measure affecting the market access of foreign digital services suppliers. Since digital services are mode 1 services, ENT limitations are entered under mode 1 in the schedules of commitments. However, as per the 2001 Scheduling Guidelines, the delivery of digital services may rely on the complementary use of two or more modes, but ENTs may selectively be imposed on either of the complementary modes. In fact, mode 3 has historically been more prone to ENT limitations unlike the other modes (UNCTAD, 1999b). However, the digitalization of services trade has shifted the delivery of services to mode 1, having a substantial impact on the operability of ENT-induced regulatory measures.

4.2 National Treatment Implications

Article XVII of the GATS sets out the obligation which must be accorded by Members to services and service suppliers of foreign origin a “no less favourable treatment” than their domestic services and service suppliers. Accordingly, when commitments are undertaken in schedules, Members are obliged not to impose discriminatory measures which may separately affect foreign services and service suppliers.

The existence of asymmetric liberalization across modes of supply (WTO, n.d.b) and the rapid digitalization of services trade (UNCTAD, 2022a) may distort the impacts of regulatory measures on the national treatment obligation of Members. That is, as discussed above, mode 3 has been the subject of many of the regulatory reservations in schedules of commitments. However, there is a growing shift towards cross-border service delivery as a favorable alternative. Thus, digitally delivered services are less prone to discriminatory measures, diminishing the regulatory discretion of Members. This would also make regulatory interventions for Members less likely as most entries under mode 1 are “none” without limitations.

The taxonomy of the GATS mode of supply framework indicates the distinct impact of regulatory interventions in each mode. As discussed above regarding market access, the implications of the regulatory discretion reserved by Members in their schedules of commitments vary and the same applies to national treatment obligations.

4.3 Inter-Modal Substitutability

Empirical economic studies show that service suppliers may use four modes of supply as viable substitutes for one another to deliver a service. Key among such studies, Chanda’s (2006) work identified the substitutability of modes 1 and 4 (in Information Technology (IT)-enabled services), modes 2 and 3 (in education and training services), and modes 1 and 3 (in retail distribution and accountancy services).

Inter-modal substitutability functions as a major disruptor, altering the regulatory impact of GATS mode-specific scheduling of commitments by enabling shifts from the territorially regulated modes 2, 3, and 4 to mode 1. This technologically enabled shift allows for the practical expansion of commitments in terms of scope and the weakening of traditional forms of regulatory control. That is, digitalization enables the practical reach of commitments beyond what was anticipated in initial schedules. As providing services is relatively easier under mode 1 than under the other modes, more and more service suppliers may shift towards employing mode 1 to deliver their services. This, in turn, staggers the traditionally mode-specific limitations while allowing the transition of delivery through mode 1 to bypass such regulatory hurdles.

Here, it's important to note that technological progress enables the practical significance of commitments to expand by altering their sectoral reach, economic significance and regulatory consequences. If one takes the education and training sector as an example, in the 1990s, when GATS commitments were negotiated, the delivery of such services relied on physical campuses and the temporary movement of students and teachers and entries for mode 1 were “none”. This has now significantly changed due to digitalization, as universities offer fully online courses, virtual classrooms, and remote certification, among other options. Accordingly, the practical scope of mode 1 has expanded without any change to the entry in mode 1 in schedules of the commitments.

In addition, this migration of services from relatively regulated modes to a less regulated mode hampers the control Members may exercise as a regulatory mechanism. Territorial presence was a crucial element allowing Members to regulate services. Mechanisms such as licensing, local incorporation, inspection, and infrastructure control are used by Members as means of regulatory control. Digitalization dismantles such mechanisms and therefore weakens the traditional means of regulatory control linked to territorial jurisdiction.

5. Emergency Regulatory Issues in Digitally Delivered Services and the Mode-Specific Scheduling of Commitments

Digitalization has blurred the modal distinctions across the four modes of supply under the GATS by enabling the remote supply of services through digital networks and replacing the territorial presence of suppliers. As discussed in Section 4.3, digital transformation intensified inter-modal substitutability, expanding the regulatory implications of commitments negotiated in the pre-digital GATS era. While various emerging regulatory issues arise with the advent and escalation of digital services, this

section selectively discusses three of the major issues relevant to the mode-specific scheduling of commitments.

5.1 Data Localization Laws

Data localization laws have become a central feature of data governance across jurisdictions. The concept of data localization encompasses two notions. On the one hand, it refers to localized data hosting in the jurisdiction of a Member and on the other hand, it implies localized data routing requiring internet service providers to channel data packets among users across networks found within the jurisdiction of a Member (Selby, 2017, p. 214). Data localization laws have emerged due to such reasons as national security, cyber security, and geopolitical concerns around digital sovereignty. There has been a surge in the number of such laws since 2015 (Recording Law, 2026). As of 2026, 62 countries across the globe have made localizing data storage mandatory for the operation of digital services (Ibid).

Data localization laws as regulatory interventions pose challenges to the cross-border flow of data and services delivered through mode 1. The unhinged flow of data is an essential requirement for the delivery of cross-border services. Data localization measures limit the capacity of foreign service providers to render their services, escalate the operational costs for services suppliers and may also make a commercial presence necessary for effective service delivery.

Moreover, data localization measures also have regulatory implications by acting as de facto limitations to the market access and national treatment guarantees under the GATS. The imposition of such laws alters competitive conditions, contrary to Article XVII of the Agreement, and makes market conditions more favorable to domestic digital service providers. Further, such laws also make domestic markets unreceptive to the inflow of foreign digital services and thereby undermine the liberalization objective of the GATS, particularly the cross-border flow of service trade.

5.2 Financial Regulations and Digital Financial Services

Digitalization has enabled shifts towards online financial services, creating inter-modal substitution between modes 3 and 1 (Black et al., 2018). That is, the commercial presence of banks in foreign markets has become less and less appealing to financial service providers. The increased proliferation in digital payment systems, mobile banking, online lending, and virtual investment platforms is among the indicators of the fast-paced transition towards the provision of remote financial services (Lehmann, 2020, p. 3).

Financial technology (Fintech) services have been subject to various forms of regulatory control across jurisdictions. Licensing is key among such regulatory

mechanisms. Lehmann (2020), for example, highlighted the “BitLicense” employed by the New York State Department of Financial Services (NYDFS). In order to acquire the “BitLicense”, every applicant is required to fulfill such requirements as capital, the custody of customer assets, risk assessment and anti-money laundering, among others (Lehmann, 2020, p. 13).

Although rare, outright prohibitions on Fintech services are also used by some jurisdictions, such as Ecuador and Bolivia (Ibid, p. 16). This apparently restrains the ability of service providers to supply their financial services to consumers in both markets. It's also important to note that outright prohibitions also undermine the expansion of financial liberalization and its attainment under the GATS.

While digital sovereignty policies are gaining prominence due to threats related to cyberspace, including data privacy and protection, the reliance on territorial regulation and localization has increased. Yet the practical implication of such policies depends on the extent of the commitments Members undertook under mode 1. That is, if mode 1 has an entry of “none”, then the regulatory intent of digital sovereignty policies might clash with the market access and national treatment obligations of the imposing Member under the GATS.

In the *China – Certain Measures Affecting Electronic Payment Services* case, the regulatory measures introduced by the Chinese government constrained the national treatment guarantees rendered under the GATS framework. The panel's findings on the discriminatory nature of the regulatory measures against China's commitments are relevant to the issues raised in this paper. That is, in line with the principle of technological neutrality, the initial commitments were interpreted as applying to evolving technologies relevant to the cross-border supply of electronic payment services. Thus, the panel found that China's regulatory measures favoring its domestic electronic payment providers were discriminatory against “like services and service providers” of foreign origin. Accordingly, it's plausible to draw that although digitalization enables the provision of financial services to evolve, commitments undertaken under mode 1 remain applicable to such emerging cross-border services. This, in fact, illustrates how digitalization enables the practical expansion of mode 1 commitments under the GATS.

5.3 Platform-based Services

Digitalization also challenges the regulation of platform-based services under the modal commitment framework of the GATS. The vast array of such services in the form of digital marketplaces, online streaming services, social media platforms, cloud-based intermediation services, app stores, and ride-hailing apps, among other services, exemplifies the interface between the GATS mode-based scheduling and the regulatory

measures Members may impose. As such services are supplied through mode 1 as a delivery channel, the regulatory importance of mode 1 increases. That is, the supply, transactions, and user interactions involving such services are conducted online. This, in turn, makes such services sensitive areas for regulation, given rising concerns related to digital sovereignty, cyber security, and digital governance.

It's also important to note how such digital services enable substitution across the modes of delivery. The supply of most of the services delivered through digital platforms heavily relied on the commercial presence (mode 3) and/or the temporary movement of service suppliers (mode 4). The rapid growth of digitalization, however, has allowed for a shift towards remote delivery. To take some examples, foreign retail establishments, travel agencies, transport, and advertising services that used to operate through local subsidiaries or branches supply their services through e-commerce platforms. Thus, shifting from territorially regulated modes to a cross-border mode of supply. As discussed in the sections above, this expands the practical or economic significance of mode 1 despite not being the subject of extensive limitations like mode 3 in initial schedules of commitments annexed to the GATS. In other words, the commercial relevance of mode 1 has broadened beyond what was anticipated when commitments were undertaken back in the 1990s.

The mode-based scheduling of commitments, nonetheless, may become blurred when platform-based services rely on the use of two or more complementary modes. The 2001 Scheduling Guidelines provide for the entry of commitments under the complementary modes, which are necessarily required for the supply of a service. That is, the effective delivery of any of the services may require the utilization of infrastructure, such as a server in the territory of a Member (which might as well be due to local data localization rules) and the occasional movement of professionals. Therefore, posing challenges to the effects of the regulatory measures targeting either of the complementary modes.

Members often seek to regulate platform-oriented digital services due to such factors as consumer protection, market concentrations, taxation, data control, and to regulate the monopoly of foreign platform-based service providers. Regulatory controls, thus, affect cross-border services trade and impede the market access and national treatment obligations of Members under the GATS. Such measures may, in turn, interfere with the market access obligation under Article XVI. That is, regulatory measures may impose outright prohibition on foreign platform-based services, limit the number of suppliers, and impose discretionary screening, licensing and supervision requirements, and commercial presence. Such requirements, in turn, may violate the restrictions embodied in the GATS that Members may not impose ENT (sub-paragraphs

(a) to (d) as a market entry requirement or limit the number of suppliers (sub-paragraph (a)).

In addition, platform regulations may also create tension under Article XVII of the GATS on the national treatment obligation of Members. Discriminatory regulations may alter competitive market conditions, favoring local platform-based services as in the China – *Certain Measures Affecting Electronic Services* payments case. Thus, regulatory measures may prioritize and incentivize domestic services and service providers through preferences rendered to such service providers, including access to domestic data and local content prioritization.

In conclusion, regulatory measures may violate the market access and national treatment obligations of Members laid down under Articles XVI and XVII of the GATS, which are applied on a mode-based basis. Furthermore, the evolving nature of digital technologies and inter-modal shifts towards mode 1 have led to the commercial expansion of this mode of supply and the emergence of regulatory interventions against the delivery of digital cross-border services.

6. The Implications of Digitalization for the Regulatory Policies of WTO Members

The digitalization of services trade and the increasing commercial expansion of mode 1 commitments have major implications for the regulatory autonomy of Members. It's been discussed in this paper that domestic regulatory measures on digital services may clash with the market access and national treatment obligations of Members under the GATS. Also, digitalization transforms commitments under the GATS into increasingly influential constraints on domestic regulatory policies. Among the major implications are the risks related to the legacy commitments and preserving the regulatory space of Members.

6.1 Risk of Legacy Commitments

Legacy commitments refer to the commitments under the GATS negotiated during an earlier commercial and technological period but are now producing broader effects due to the digitalization of services trade. Most of the commitments were undertaken before the coming into play of cloud computing, fintech services, large-scale cross-border digital trades, and platform economies, among others.

The risk of legacy commitments lies in the fact that commitments undertaken during older technological assumptions might be overridden by the expansive impact of digitalization beyond the initial intents of the negotiating Members. Hence, the liberalization of mode 1 and the presence of fewer limitations in this mode hampers the regulatory freedom of Members, especially now that digitalization has enabled the

supply of a broad spectrum of services to be delivered remotely and forcing Members to comply.

Although commitments once bound remain binding, technology continues to evolve, allowing digitalization to lead to inter-modal substitution and thereby the remote delivery of services. Not only this but digitalization also expands the commercial importance of mode 1, leading to unprecedented regulatory consequences. On the flip side, Members increasingly want to tighten their regulatory frameworks when it comes to their cyberspace due to mounting risks related to cybersecurity, platform governance, financial stability, and digital sovereignty. However, the risks of legacy commitments challenge the policy autonomy of Members and expose regulations to challenges under the WTO regime. Furthermore, the risk intensifies with inter-modal substitution, which digitalization has enabled. The increased transition towards the digital service supply has an indirect impact of practically expanding obligations under the GATS (mode 1 commitments) without changing the treaty text.

The risk of legacy commitments may also be further intensified with the principle of technological neutrality. According to this principle, technological shifts in the mode of delivery shall not affect a Member's obligation to guarantee the market access and national treatment rights under Articles XVI and XVII of the GATS. Thus, initial commitments may continue to extend to digitally enabled traditional services and evolve as technology advances.

Lastly, legacy commitments may also create regulatory uncertainty in the age of digitalization of services trade. This is due to the increasing commercial modal overlap and the blurring of sectoral boundaries due to the delivery of services through digital technologies. This, in turn, brings challenges to Members in terms of whether commitments may apply in certain regulatory areas, the classification of digital services and whether regulating a digital sub-sector is permissible without undermining their commitments under Articles XVI and XVII of the GATS.

6.2 Preserving Regulatory Space

Regulatory space is the right of Members to design, implement and amend their domestic regulations to facilitate the preservation of public policy objectives while maintaining their obligations under the GATS. The preservation of regulatory space cornering digital services becomes an important issue due to the commercial expansion of mode 1 commitments, which as discussed above, were negotiated during the pre-digitalized world. This practical expansion of mode 1 would result in increased regulatory consequences in terms of extending the reach of measures once thought purely domestic by affecting the cross-border flow of services and restricting foreign digital participation.

The scheduling of mode 1 commitments when digital services trade was significantly limited also constrains the regulatory flexibility of Members. Considering the existence of liberalized mode 1 commitment across schedules of commitments, the ability of Members to exercise a wider discretion to freely regulate the digital services arena might be highly affected. Moreover, the existence of broad mode 1 commitments would hamper the ability of Members to govern their digital spaces. Data localization laws, for example, may face challenges for restricting market access (Article XVI) and creating de facto discrimination (Article XVII), and thus, an indirect limitation on cross-border services trade.

Regulatory measures seeking to control platform economies and financial regulations aiming to maintain financial stability may also be challenged under Articles XVI and XVII of the GATS. Platform regulations intend to control competition, protect the rights of consumers and also manage misinformation. While financial regulations may seek to govern digital payment systems and cross-border fintech participation, such measures may conflict with legacy commitments in finance and expanded market access obligations under mode 1. Accordingly, such regulatory interventions to control the platform economy and fintech environment may be checked by the commercial extension of mode 1 commitments, limiting the regulatory autonomy of Members.

The regulatory space of Members may also encounter limitations from inter-modal switches. The more service providers can shift from mode 3 to mode 1, the less the regulatory space for Members. Mode 3 is highly territorial and controllable, while mode 1 is cross-border and less controllable through traditional regulatory methods. Therefore, the regulatory space of domestic authorities may shrink.

Though regulatory space may seem to be shrinking due to mode 1 extensions, Members may still rely on GATS exceptions under Article XIV. Regulatory measures affecting market access and national treatment guarantees may be taken due to privacy concerns, public morals, fraud prevention and security-related reasons. Nevertheless, such exceptions are often subjected to necessity analysis and are still constrained by anti-discriminatory principles. It's important to underscore, thus, that the utilization of such exceptions may unfold legal uncertainty instead of maintaining the full regulatory autonomy of Members. In addition, Members may employ the re-territorialization of digital services to broaden their regulatory space. They may resort to measures such as requiring local presence, data localization laws, infrastructure control, and requiring foreign suppliers to have domestic representatives. However, the reliance on such options may create a paradox whereby Members attempt to territorialize and control a de-territorialized digital services sector, which is increasingly being protected by the GATS framework as a way to liberalize cross-border services trade.

7. Conclusion

This paper examined the interaction between the mode-specific scheduling of commitments under the GATS, the digitalization of services trade, and the regulatory autonomy of WTO Members. The mode-based scheduling of commitments is a central feature of the GATS mode of supply framework and defines the legal consequences of the commitments undertaken in each mode. The increasing significance of digitalization has enabled the shift towards the delivery of services through digital channels. Accordingly, the regulatory importance attached to modes, in particular 4 and 3, is diminishing due to the de-territorialized nature of cross-border services trade.

Furthermore, mode-based scheduling in the context of digital services creates market access and national treatment limitations. Restrictions imposed as regulatory measures may have the effects prohibited under Article XVI:2 (a) - (f). Also, regulatory interventions introduced to control cross-border services trade may have cross-modal effects. ENT requirements for mode 1, for instance, may complicate the delivery structure of some digital services that rely on the complementary use of two or more modes.

Digitalization also challenges the regulatory discretion of Members to introduce discriminatory measures targeting foreign service providers delivered through the other modes of supply. As inter-modal substitution has enabled shifts towards the more liberalized mode 1, regulatory measures imposed on the other modes except mode 1 would have no constraining effect on cross-border digital services trade.

Digitalization has indeed transformed the effective operation of mode 1 commitments. Although commitments annexed to the GATS are undertaken in a mode-based manner, digital convergence in the supply of services has eroded modal distinctions present in the schedules of commitments. As digitalization has led to the practical extension of commitments under mode 1, it has resulted in inter-modal shifts in the supply of services, from modes 3 and 4 to mode 1. Moreover, the transition of services into digital delivery has narrowed the regulatory autonomy of Members. Unlike modes 3 and 4, the de-territorialized aspect of cross-border services trade, the presence of liberalized mode 1, and the issue of legacy commitments have challenged Members' regulatory space.

This paper also discussed how emerging regulatory issues related to data localization laws are limiting market access and national treatment guarantees. Fintech regulations may also undermine the commitments Members undertook under mode 1 to grant market access and national treatment rights. Regulations intended to regulate platform-based services affect the market access and national treatment obligations of

Members and may also hinder cross-border supply when such services depend on the complementary use of two or more modes of supply.

Even though Members may resort to re-territorializing digital services through mandatory operational requirements to maintain their regulatory autonomy, their practical effect may be against the prime objective of the GATS as a propeller of progressive liberalization in services trade. Likewise, the utilization of the exceptions under Article XIV of the Agreement may have the ultimate effect of being scrutinized for necessity and discrimination.

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