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# Are Trade Rules Undermining Taxation of the Digital Economy in Africa?

Karishma Banga  
and Alexander Beyleveld

February 2024

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The International Centre for Tax and Development at the Institute of Development Studies, Brighton BN1 9RE, UK  
Tel: +44 (0) 1273 606261  
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Karishma Banga and Alexander Beyleveld

## Summary

African countries are currently considering provisions in the AfCFTA and at the WTO to liberalise digital trade. As they face mounting fiscal pressures, it is imperative that they beware the implications of digital trade provisions for their ability to tax their digital economy. In this paper, we develop a comprehensive framework for analysing the impact of trade rules on tax regimes in the digital economy, with a focus on Kenya, Rwanda, and South Africa. We explore how trade rules ostensibly shape tax policies and their implications for revenue generation. By examining rules regulating trade in services and the imposition of customs duties on electronic transmissions, we identify how these rules may directly impact tax policies and limit revenue generation possibilities. Moreover, digital trade rules, such as those related to data flows, localisation, and source code sharing, have the capacity to produce both indirect and administrative effects on tax measures. These rules can alter tax structures, taxation rights, data collection, and the capacity to monitor and implement tax measures. Our findings shed light on the complex interplay between trade rules and tax measures, highlighting potential challenges and opportunities for revenue generation from the digital economy in African countries.

**Keywords:** digital trade rules, taxation, digital economy, custom duties, Africa.

**Karishma Banga** is an Economist and Research Fellow in the Digital and Technology Cluster at the Institute of Development Studies, University of Sussex.

**Alexander Beyleveld** is a Senior Researcher in the Mandela Institute, School of Law, University of the Witwatersrand.

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## Acronyms

ADS	Automated digital services
AfCFTA	African Continental Free Trade Area
BEPS	Base erosion and profit shifting
B2C	Business-to-consumer
CDET	Customs duties on electronic transmissions
CIT	Corporate income tax
CRS	Computer-related services
DDS	Digitally deliverable services
DEPA	Digital economy partnership agreements
DST	Digital services taxes
EPA	Economic partnership agreement
ET	Electronic transmissions
FTA	Free trade agreement
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
G20	Group of 20
IF	Inclusive framework
IP	Intellectual property
JSI	Joint Statement Initiative
KDPA	Kenya's Data Protection Act of 2019
MFN	Most-favoured nation
MLC	Multilateral convention
MNC	Multinational corporation
MNE	Multinational enterprises
NT	National treatment
OECD	Organisation for Economic Co-operation and Development
POPIA	Protection of Personal Information Act of 2013 (South Africa)
PTA	Preferential trade agreement
RRA	Rwanda Revenue Authority
SARS	South African Revenue Service
SDGs	Sustainable development goals
STIP	Strategic Trade and Investment Partnership
UJDTA	US–Japan Digital Trade Agreement
USMCA	United States–Mexico–Canada Agreement
VAT	Value added tax
WTO	World Trade Organization

# Introduction

Digitalisation is transforming production, trade, and business models across all sectors of the economy. It has accelerated the spread of global value chains led by large multinational corporations (MNCs) which no longer have physical presence in the jurisdictions in which they operate (Hauge 2023). The activities of these MNCs involve the cross-border sale of traditional or digital goods, delivery of services such as targeted online advertising or algorithmic trading, or the mining and sale of data itself, with the revenue generated through these activities being channelled to low-tax jurisdictions as part of efforts to pay little or no income tax (Kelsey *et al.* 2020: 76–79). Further, digitalisation is increasingly characterised by the spread of new business models that rely on data, intangible assets, and network effects to create monopolistic or oligopolistic market structures (OECD 2018). Such characteristics have made it increasingly difficult for governments to apply tax measures such as corporate income tax (CIT), which has traditionally relied on the physical presence of an enterprise (Mpofu 2022; Elliffe 2021: chap. 3). The continuously growing volume of goods and services purchased online by private consumers from foreign suppliers has also made the implementation of value added taxes (VAT) more complex (OECD 2014). The allocation of taxing rights on income, generated from cross-border activities in the digital age, has been identified as a key issue in African economies. This is well-demonstrated in the case of Uber, which has registered local subsidiaries in four African countries that provide administrative services but neither own any intellectual property (IP) nor receive any revenue from users of Uber (Ndajiwo 2020). The IP is owned by the Uber affiliate in Netherland, which receives the payments but pays minimum taxes as it is treated as income for the licensing of the IP rights (*ibid.*).

In the face of new digital business models, countries are facing a political and technical choice of adapting the existing taxation instruments of corporate income tax (CIT) and value added tax (VAT) or creating new ones, such as digital services taxes (DSTs) and customs duties on electronic transmissions (CDETs), which can substitute for, or complement, traditional tax instruments. Countries have the potential to tax the digital economy through a combination of at least these four measures, which can be incorporated into their industrial policy and revenue collection strategies. These objectives are critical for the achievement of the UN sustainable development goals (SDGs), particularly the promotion of inclusive and sustainable industrialisation (SDG 9.2), strengthening revenue mobilisation (SDG 17.1), and respecting each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development (SDG 17.5) (see further Kelsey *et al.* 2020: 9–19; see also James 2019). Further, taxing the digital economy is key for the realisation of human rights through the attainment of tax justice (see, for example, De Schutter, Lusiani, and Chaparro 2020), which is critical for post-pandemic recovery (see Baker 2022).

In this paper, we argue that the extent to which countries can use these measures, or a combination of these measures, to tax the digital economy is critically shaped by trade rules, including digital trade rules. Our paper broadly relates to two strands of literature: first, on the taxation of the digital economy, and second, on the development implications of digital trade rules. A nascent strand of literature has emerged at the nexus of the two, analysing the interactions between tax and trade policy in the digital economy. This includes an analysis of how digital trade rules could impede taxation of the digital economy (Kelsey *et al.* 2020), taxation of digital services in trade agreements (Noonan and Plekhanova 2020), anti-development implications of tax-related provisions in proposed digital trade rules (James 2019), and the legal issues on taxation of the digital economy under the General Agreement on Trade in Services (GATS) agreement (Pirlot and Culot 2021). We make our first contribution to this strand of the literature by developing a comprehensive framework that illustrates the complex ways in which trade and digital trade rules affect the ability of



countries to tax the digital economy. We make our second contribution by applying the framework to the cases of Kenya, Rwanda, and South Africa to demonstrate what is at stake in practical terms for African countries. A case study approach like ours is important for unpacking the heterogeneity in digital tax and digital trade policies across countries as well as their interactions. Further, our choice of countries allows for an interesting comparative lens. Both Kenya and South Africa are major players in different regional economic communities (RECs),<sup>1</sup> and while Rwanda is not far off from Kenya geographically and shares membership of some RECs,<sup>2</sup> it adds a different perspective as a least developed country (LDC) that has shown significant engagement with digital economy regulatory issues, including taxation. These countries also have also attained varying levels of digital development and participate in the digital economy to different degrees.

The African continent is at a particularly critical juncture. In the international tax context, discussions facilitated by the Organisation for Economic Co-operation and Development (OECD) and the Group of 20 (G20) inclusive framework (IF) on base erosion and profit shifting (BEPS) led to the development of a 'Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy' in 2021, which has important implications for taxation within the digital economy (Avi-Yonah, Ran and Sam 2022). Some African countries are involved.<sup>3</sup> In 2023, the United Nations General Assembly (UNGA) also adopted Africa Group's tax resolution on the 'Promotion of Inclusive and Effective International Tax Cooperation at the United Nations' to foster intergovernmental discussions on international tax cooperation (see United Nations General Assembly 2023).<sup>4</sup> In the international trade context, the Assembly of Heads of State and Government of the African Union have mandated negotiations on the Protocol on Digital Trade to the African Continental Free Trade Area (AfCFTA). Seven African World Trade Organization (WTO) Members are also part of the Joint Statement Initiative on Electronic Commerce (the 'E-Commerce JSI' or simply the 'JSI') as of February 2023,<sup>5</sup> which reflects the shared intention of a group of 89 WTO Members to commence negotiations on 'trade-related aspects of electronic commerce' (WTO n.d.). At the same time, African countries continue to pursue their individual preferential trade/free trade agreement (PTA/FTA) agendas. With mounting fiscal pressures, it is imperative that African countries should beware the implications of digital trade provisions for their ability to tax.

Section 1 attempts to define and measure the digital economy. Section 2 examines the evolving approaches to taxing the digital economy, with a specific focus on (1) CITs, (2) VATs, (3) DSTs, and (4) customs duties on ETs (CDETs). Based on a literature review and secondary data sources, Section 3 develops a framework to illustrate how current and future trade rules may constrain the ability of countries to tax the digital economy. Sections 4, 5 and 6 apply the framework to the three African economies under study. Section 7 concludes with brief recommendations and questions that require further research.

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<sup>1</sup> Kenya is part of the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA), the Intergovernmental Authority on Development (IGAD), and Community of Sahel-Saharan States (CEN-SAD). South Africa is part of the Southern African Development Community (SADC).

<sup>2</sup> Rwanda is part of COMESA and the EAC. It is also part of the Economic Community of Central African States (ECCAS), which Kenya is not, and, unlike Kenya, is not part of IGAD or CEN-SAD.

<sup>3</sup> As at 15 November 2023, the African countries that have signed on are: Angola, Benin, Botswana, Burkina Faso, Cabo Verde, Cameroon, Congo, Côte d'Ivoire, the Democratic Republic of the Congo, Djibouti, Egypt, Eswatini, Gabon, Kenya, Liberia, Mauritania, Mauritius, Morocco, Namibia, Nigeria, Senegal, Seychelles, Sierra Leone, South Africa, Togo, Tunisia, and Zambia. This means that around half of all African countries have not signed on. For purposes of this paper, it is notable that Kenya and South Africa are signatories, but that Rwanda is not.

<sup>4</sup> The resolution tabled by Nigeria on behalf of the African Group (A/C.2/78/L.18/REV.1) initiated talks to create a UN framework convention on international tax cooperation, and called specifically for a protocol on 'the taxation of income derived from the provision of cross-border services in an increasingly digitalized and globalized economy'.

<sup>5</sup> These are Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Kenya, Mauritius, and Nigeria.

# 1 Measuring the digital economy

## 1.1 Defining the digital economy

It should be noted that many of the terms used in this paper lack globally agreed upon definitions, as well as definitions within a particular legal or institutional setting. Therefore, as a general proposition, we try not to ascribe definitions to terms where these need to be agreed upon by signatories to legal instruments, or members of international organisations such as the WTO. In several instances, the extent to which the types of tax measures under discussion here will be affected by trade rules will be contingent on these yet-to-be-defined terms. This is far from ideal, given that the legal uncertainty which this causes may in and of itself deter countries from fully considering certain types of taxation measures. It is for this very reason that we should understand what is at stake at the intersection of tax measures and trade rules in the digital economy.

The term ‘digital economy’ is one which can be – and is – defined in a multitude of ways. In this paper, we do not adopt a rigid definition of this term, save for defining it such that it encompasses ‘e-commerce’ and ‘digital trade’, which is where our current interest lies. These two terms are often used interchangeably, but (parts of) trade law scholarship recognises distinctions between the terms. Alschner, for example, argues that trade lawyers should draw ‘systematic distinctions’ between digitally-enabled trade, which he labels ‘e-commerce’, and the exchange of ‘purely digital assets’, which he labels ‘digital trade’ (Alschner 2023). While other definitions appear to accept that digital trade is a broader concept that subsumes ‘e-commerce’ as understood by Alschner, among other things (see, for example, López González and Ferencz 2018: 9), we agree that the distinction is more than semantic in that there is an ‘expanding focus of trade rules from digitally-enabled trade in analog assets to trade in digital assets’, which makes sense because e-commerce and digital trade cover fundamentally different transaction types, give rise to distinct policy concerns, and are subject to different rules (Alschner 2023: 1).

Insofar as tax measures are concerned (here we use the word ‘tax’ broadly to include customs duties), we are predominantly interested in the four types of measures that we have already identified above, i.e., (1) CITs, (2) VATs, (3) DSTs, and (4) customs duties on electronic transmissions (CDETs). Thus, when we use ‘taxation of the digital economy’ or similar phrases, we generally mean the application of these four types of measures to that part of the digital economy that entails digital trade, specifically its *cross-border* forms, i.e., the types of digital trade that are, or would be, regulated by international trade rules as contained in WTO covered agreements and PTAs/FTAs.

## 1.2 Estimating digital trade in African countries

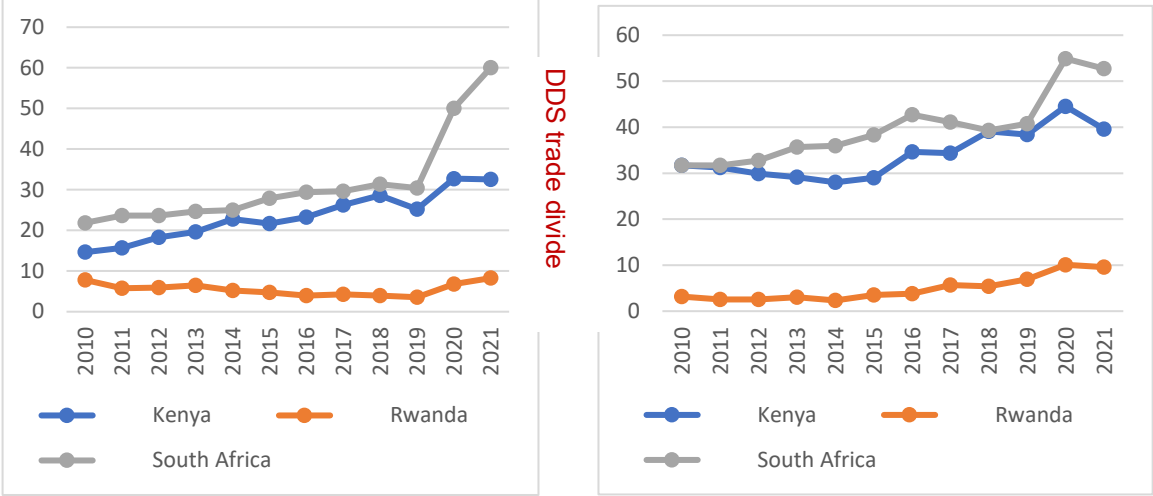
While there is no consensus on how to define ‘digital trade’, there is little doubt of its growth, globally and in Africa, over the past decades (United Nations Conference on Trade and Development 2019). A common way of measuring a significant part of digital trade is through estimating production and trade of digitally deliverable services (DDS).<sup>6</sup> DDS trade is valued at more than US\$24 billion in Africa (R. Banga and K. Banga 2022), highlighting the significance of negotiations on trade and tax rules, both in terms of revenue generation and for kick-starting an African digital transformation. However, there are significant differences across countries – DDS exports accounted for 60 per cent of South Africa’s trade in services

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<sup>6</sup> As defined by UNCTAD (2015), DDS are typically an aggregation of insurance and pension services, financial services, charges for the use of intellectual property, telecommunications, computer and information services, other business services and audio-visual and related services. These are services that have the potential to be delivered over an ICT network. DDS forms part of the ‘digital economy’ as defined earlier.

in 2021 compared to 32 per cent in Kenya and less than 10 per cent in Rwanda (Figure 1.1). The gap between Rwanda and the other two economies in the case of DDS imports as a share of total services trade was also stark (Figure 1.1).

**Figure 1.1 DDS exports (left) and imports (right), as a % of total services trade**



Source: Authors, constructed from UNCTADstat. DDS = digitally deliverable services.

## 2 Evolving approaches in the taxation of the digital economy

In response to increasing digitalisation, countries have sought to reform the rules applicable to existing types of taxes. For example, taxing corporate income of digital service providers and (possible) excess profits under CITs or levying a consumption tax on services of electronic goods and services through VAT. They have also adopted new forms of taxes, most prominently DSTs – a form of proxy tax where no nexus may have been present under CIT – or are contemplating applying customs duties to electronic transmissions. We briefly discuss certain developments in relation to each of the four forms of taxes below.

### 2.1 Traditional tax instruments

#### 2.1.1 Corporate income taxes (CITs)

Some countries have adapted their domestic CIT frameworks by bringing certain types of digital services, such as ‘Over the Top’ services, into the tax base, or by expanding/clarifying their definition of permanent establishment (such as Nigeria).<sup>7</sup> Some others have adopted a withholding tax on certain digital services.<sup>8</sup> Such a tax, on gross-basis, can address the tax

<sup>7</sup> In Nigeria, for example, the Companies Income Tax (Significant Economic Presence) Order of 2020 (SEP Order), issued by the Minister of Finance, Budget and National Planning in 2020 in terms of the Finance Act of 2019, clarifies that a non-resident digital service provider will be considered permanently established if it exceeds a gross turnover threshold, uses the .ng domain name, or has a purposeful and sustained interaction with persons in Nigeria by customising its platform to target persons in Nigeria. See SEP Order, paragraph 1(1).

<sup>8</sup> Under Kenya’s Finance Act 2023, for example, income paid to ‘digital content creators’ is subject to a withholding tax. Residents are subject to a 5 per cent withholding tax, which will either be a final tax or creditable against CIT. In the case of non-residents, however, the rate is 20 per cent, and is always levied as a final tax. This is the general position, but different rules may in principle apply in cases where the matter is – or will in future be – regulated by a double tax treaty.

challenge by treating income from some economic activities similarly to passive income (e.g., from royalties) rather than active income from business profits (OECD 2018).

Internationally, 138 countries have signed the Statement on a 'Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy', steered by the OECD/G20's BEPS Project to facilitate 'market jurisdictions' in taxing the digital economy through modification to the existing rules on profit allocation and nexus that affect CITs (see OECD 2023). It is often dubbed as the 'multilateral' or 'consensus-based' approach (see, for example, Pirlot and Culot 2021). The OECD has asserted that 'Pillar One' of the Statement will ensure a fairer distribution of profits and taxing rights among countries with respect to the largest [multinational enterprises (MNEs)], including digital companies', that '[i]t would re-allocate some taxing rights over MNEs from their home countries to the markets where they have business activities and earn profits, regardless of whether firms have a physical presence there', and that '[u]nder Pillar One, taxing rights on more than US\$125 billion of profit are expected to be reallocated to market jurisdictions each year' (OECD n.d.). While the reallocation of taxing rights in relation to the digital economy is certainly a laudable goal in principle, there has been a 'slow demolition' of Pillar One's scope (see Cooper 2021: 536–40; see also Avi-Yonah *et al.* 2022: 289–95). Earlier work had shown an intention for Pillar One to be applicable to all automated digital services (ADSs) and consumer-facing businesses (CFBs), whereas the Statement now is only applicable to MNEs with global turnover in excess of €20 billion and profitability above 10 per cent, and also excludes MNEs in the extractives and regulated financial services sectors (see Avi-Yonah *et al.* 2022: 295). As such, Pillar One would only apply to small parts of the profits – the so-called residual profits – of less than 100 MNEs worldwide (see BEPS Monitoring Group 2022: 1; Starkov and Jin 2022: 13). Correctly, there are concerns that the BEPS approach will not fully capture the income generated by the digital economy (Rukundo 2020). Subsequently, there have been proposals for the adoption of a single global threshold rule to cover all MNEs that generate global sales revenue above a certain amount and the reallocation of profits as a portion of the MNE's total profits instead of residual profits (ATAF 2021).

Another CIT development comes from the approval in April 2021 of Article 12B of the United Nations' model tax convention between developed and developing countries (UN Model Convention), which eliminates the physical presence requirement and expands the ability of market jurisdictions to tax income from ADS.<sup>9</sup> An advantage of the Model Convention's Article 12B over Amount A under Pillar One of the Statement is the lack of minimum thresholds for revenue or profitability but it is technically a bilateral proposal as it would need to be applied between two countries who aim to model this approach (Avi-Yonah *et al.* 2022: 335). As such, it is a consensus-based approach that, like the Statement, is heavily subject to power asymmetries in the ability to extract favourable terms through negotiation of treaties, which puts developing countries at a distinct disadvantage (see in this regard, for example, Hearson 2018).

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<sup>9</sup> In this context, Paragraph 5 of Article 12B of the UN Model Treaty defines an ADS as 'any service provided on the internet or an electronic network requiring minimal human involvement from the service provider' (United Nations Department of Economic and Social Affairs 2021: 25). While the full scope of the definition is unclear, paragraph 6 of Article 12B indicates that the term 'includes especially': online advertising services; supply of user data; online search engines; online intermediation platform services; social media platforms; digital content services; online gaming; cloud computing services; and standardised online teaching services (United Nations Department of Economic and Social Affairs 2021: 25). Unlike DDS, it excludes payments qualifying as 'royalties' or 'fees for technical services'. It should be noted, moreover, that this is a development that does not purely affect CITs. A good case can certainly be made that Article 12B accommodates certain forms of DSTs. Moreover, as noted above, withholding taxes can also be applied to digital services. As such, while reliance on Article 12B can certainly boost CIT revenues, it should be understood that non-CIT alternatives do exist, and these may either be applied on their own or in conjunction with CITs.

### 2.1.2 Value added taxes (VATs)

The collection of VAT in business-to-consumer (B2C) transactions is a persistent issue that needs to be addressed urgently to protect tax revenue and to level the playing field between foreign suppliers relative to domestic suppliers (OECD 2014: 19). Challenges related to collecting VAT include jurisdictional complexity; the inherent difficulties of applying VAT, which was initially a tax designed to be applied to goods, to intangibles and services; the fact that it is difficult to track and regulate digital transactions; and the corresponding need for governments to invest in advanced technologies and capacity building efforts to assist with implementation.

In light of the above challenges, the OECD has produced its International VAT/GST Guidelines (see OECD 2017), which have significant relevance for non- OECD countries as well (James and Ecker 2017). Several efforts have been made to improve policy frameworks and their implementation for the collection of VATs on digital trade, particularly in services and intangibles. This has led to the development, among other things, of guidelines on the role of digital platforms in collecting VAT and various regional digital VAT ‘toolkits’, including one for Africa (see OECD 2019; OECD, World Bank Group, and African Tax Administration Forum 2023), which have been touted as having been successful to a large degree (see, for example, OECD *et al.* 2023).

## 2.2 New tax instruments for the digital age

### 2.2.1 Digital services taxes (DSTs)

As international negotiations in pursuit of solutions to the challenges arising for countries seeking to apply CITs in the digital economy have continued, several countries have resorted to applying DSTs, which are transaction-based taxes imposed on revenue.<sup>10</sup> They are based on a percentage of the revenue – typically in the 2–3 per cent range – derived from specifically defined revenue streams and are generally applicable to firms above a certain revenue threshold. DSTs are usually directed at one or more of four possible revenue streams; (1) sales of data gathered by an internet provider; (2) the provision of an internet marketplace; (3) the creation of a market between internet users; and (4) specific services marketed to advertisers employing the internet (see Bush and Thrasher 2020: sec. II.B). DSTs can be seen as taxes that can be imposed without the need to renegotiate tax treaties and are therefore ‘unilateral’ in nature. However, if countries levy DSTs at diverging rates, there will be issues around the fragmentation of rules and increasing costs of compliance for businesses. Further, in some countries, it is at a company’s discretion whether it pays tax as a subsidiary or under the DST regime. Article 12B therefore has an important role to play in developing a cooperative framework for DST implementation.

Signatories to Pillar One have committed to negotiating a multilateral convention (MLC) that, among other things, will require all parties to remove all DSTs, and other relevant similar measures, and to not introduce such measures in the future (OECD 2021: 3). Signatories also made it clear that no newly enacted DSTs ‘or other relevant similar measures’ will be imposed on any company from 8 October 2021 and until the earlier of 31 December 2023 or the coming into force of the MLC (OECD 2021: 3), thus putting a clock on negotiations.<sup>11</sup>

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<sup>10</sup> Whether a DST is considered a direct or indirect tax depends to a large extent on how it is formulated.

<sup>11</sup> For the MLC to enter into force, it needs to be ratified by at least 30 jurisdictions including the headquarters jurisdictions of at least 60 per cent of MNEs currently expected to be within Amount A’s scope.

## 2.2.2 Customs duties on electronic transmissions (CDETs)

Another development of relevance to how countries might approach taxing the digital economy is the fact that the WTO's practice of not imposing customs duties on electronic transmissions may come to an end. At its 1998 ministerial conference (MC) in Geneva, WTO Members declared that they 'will continue their current practice of not imposing customs duties on electronic transmissions' (WTO 1998). This ban (the moratorium) has been extended on a temporary basis for two years at all subsequent ministerial conferences. In the most recent MC12 (see WTO 2022), Members agreed to maintain the current practice of not imposing customs duties on electronic transmissions until MC13 but the moratorium will expire on 31 March 2024 unless there is a *consensus* to extend (WTO 2022). With India and South Africa asserting a 're-think' of the moratorium in their joint communications to other Members (Governments of India and South Africa 2018), and Indonesia calling for the moratorium to be terminated (Government of Indonesia 2022), there is a strong possibility of the moratorium coming to an end. If the moratorium were to lapse, WTO Members would gain policy space to apply CDETs, the extent of which varies among Members based on a variety of factors, including what rules are contained in their PTAs/FTAs and what commitments they have scheduled under GATS.

The moratorium could ostensibly apply to e-commerce and digital trade.<sup>12</sup> The moratorium refers to 'electronic transmissions', with the meaning and scope of the term naturally being contested. Questions also arise as to the meaning of 'customs duties' in this context, as well as the extent to which defining 'electronic transmissions' affects the utility of the manner in which 'customs duties' is defined (see Willemyns 2021: 80–81). Debates are centred around at least two things: (1) whether the term 'electronic transmissions' refers purely to the actual transmission itself or also to the *content* of what is being transmitted (see, for example, Andrenelli and López González 2019: 9–10; Mitchell and Mishra 2018: 1093–94; Willemyns 2021: 80–81); and (2) whether the moratorium covers only goods, or both goods and services (see Governments of India and South Africa 2020: 7).<sup>13</sup>

## 3 Possible trade rule constraints to taxing the digital economy

Given that we are interested in attempts to tax those parts of the digital economy which consist of digital trade, a broad range of trade rules come into play. They differ in relation to the different fora in which they were (or are being) made, as well as in their nature, e.g., rules on goods, services, e-commerce, or digital trade, etc.

The aim is to look at the potential of the trade rules discussed to affect the ability of countries to apply CITs, VATs, DSTs, and CDETs. Figure 3.1 presents a framework on how trade rules can encroach on the ability of governments to tax the digital economy. Trade rules have the

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<sup>12</sup> If a country were to apply CDETs to intangible e-commerce products, the moratorium could have an impact on tangible e-commerce products as well (for example, if a given application of CDETs were to impact the competitive relationship between 'like' tangible and non-tangible e-commerce products). Our point here is simply that the moratorium would not affect the ability of WTO members to tax tangible e-commerce products.

<sup>13</sup> Given the lack of definitional clarity in this context, it is difficult to analyse how the definition of 'electronic transmissions' relates to other terms used in this paper, including DDS and ADS. For example, if the definition of 'electronic transmissions' merely covers goods, then the definition of both DDS and ADS will not overlap with the definition of ET. If the definition of ET covers both goods *and* services, then the extent of the overlap with DDS and ADS will hinge on whether ET is considered to merely cover the actual transmissions or whether it also covers the *content* of the transmissions in question. Overlaps of this kind are of crucial importance, but a fully-fledged discussion on all the various definitional permutations goes beyond the needs of this paper.

capacity to impact the ability to tax the digital economy in at least three broad ways, i.e., through: **(1) a direct effect on the legal ability of governments to tax the digital economy;** **(2) an indirect effect via changes to business structure and taxation rights;** and **(3) administrative effects on data collection and capacity to monitor and implement measures aimed at taxing the digital economy.**

**Figure 3.1 A framework on trade rules and taxation of the digital economy**

Trade rules	Scope of trade rules	Constraints to taxation instruments			
		CIT	VAT	DST	CDET
Trade rules on services	WTO: GATS FTA/PTA	Only if violates NT and/or MFN and/or MA	Only if violates NT and/or MFN and/or MA	Legal ability/position of a country to impose a DST linked to scheduled commitments	If ETs include content and services
Trade rules on electronic transmissions	WTO: moratorium FTA/PTA	No apparent constraints	No apparent constraints	Depends on the design of DST	Bans CDETs
Digital trade rules	FTA/PTA JSI	<p style="text-align: center;">← Cross-cutting effects →</p> <p>Cross-border free flow of data constrains ability of governments to track where data is being processed and monetised.</p> <p>Data localisation increases the ability of tax authorities to review the data in case of any audit or requirement and serves as a policy instrument for indirect taxation.</p> <p>Ban on source code sharing constrains ability of governments to assess the value of commercial activities in their respective jurisdictions.</p>			

Source: Authors.

Note: The effect of trade rules on tax instruments in the framework are meant to be illustrative not exhaustive. There are other rules, for example, on goods and de-minimis tariff-free importation, which may affect the taxation of e-commerce and therefore the digital economy more broadly but fall beyond the scope of this paper.

**3.1 Trade rules on services (WTO/PTAs/FTAs)**

The GATS at the WTO is in large part based on the most-favoured nation (MFN) and national treatment (NT) principles. Under the MFN principle, if a country grants favourable treatment, market access, or any preferential conditions to a particular trading partner for a specific service sector, it must extend the same treatment to all other WTO Members for that service sector (see Article II of the GATS). Under the NT principle, once a foreign service has entered a WTO Member country’s market, it should be accorded the same treatment as similar domestic services in terms of regulations, laws, and other measures that affect its provision or use. Treatment ‘shall be considered to be less favourable if it modifies the conditions of competition in favour of services or service suppliers of the Member compared to like services or service suppliers of any other Member’ (Paragraphs 2 and 3 of Article XVII). In PTAs/FTAs, services disciplines tend to mirror WTO rules, but in various instances liberalise a greater proportion of services trade (see, for example, the EU–Singapore FTA, Chapter 8, read with Appendixes 8-A and 8-B). The same logic applies here as in relation to the ability of the GATS to constrain taxation of the digital economy, but in relation to a greater range of services.

GATS can constrain the ability of a Member to impose a CIT or VAT if they violate the NT or MFN principles (which is generally not the case) and can also prevent the imposition of customs duties in relation to products covered by the GATS. For example, a VAT on cross-border supply of digital services not levied equally on the supply of services domestically can be challenged under GATS (on how VATs can contravene non-discrimination principles under WTO law, see further Cuadros 2016).

**However, the most significant effect of GATS is its direct effect on the legal ability/position of a country to impose a DST.**<sup>14</sup> A country's sector-specific commitments under GATS, including on non-discrimination between domestic and foreign suppliers, market access and local presence, importantly determine the legal constraints within which the tax authorities of that country can operate.<sup>15</sup> Consider the case of France, and more broadly the EU. Under GATS, France, and the EU, have taken commitments on providing market access – including cross-border supply – without restrictions to foreign suppliers of computer and related services (barring Malta and the Slovak Republic). They have also taken NT commitments, under which they must provide foreign companies 'no less favourable' treatment than domestic suppliers, and MFN treatment of treating trading partners equally. In 2019, France adopted a DST of 3 per cent on the revenues generated from online intermediation services and targeted online advertisement services in France. Companies with a digital global revenue of 750 million euros and digital turnover of more than 25 million in France are targeted by this tax. Since advertising is included in the EU's list of commitments, US authorities have opposed France's DST, raising the violation of GATS principles under the WTO framework (USTR 2019). The US argues that the DST targets foreign online advertising companies and gives them less favourable treatment as compared to 'like' services and service suppliers which advertise in newspapers, thus violating Article XVII of GATS. Here, 'likeness' is defined by end-use and the competitive relationship, irrespective of the medium of supply. It is further argued that the high revenue thresholds of the French DST generated a de facto discrimination against US firms compared to European firms (Hufbauer and Lu 2018). While the French DST was the first to be accused of discriminating against US companies, the US has also launched investigations on the DSTs adopted in Austria, India, Italy, Spain, Turkey and the United Kingdom (Noonan and Plekhanova 2020).

However, service suppliers supplying 'like' services are not necessarily 'like' service suppliers.<sup>16</sup> It has been argued that digital advertising services are not 'like' print, radio, or television advertising services since they differ in both the mode of delivery and business models. Most internet advertising is data-driven and personalised as opposed to much media advertising. As a result, internet advertising has generally been seen to be a separate market from other forms of advertising in competition law proceedings.<sup>17</sup>

### 3.2 Trade rules on ETs (WTO/PTAs/FTAs)

The main argument for banning CDETs is that it can help firms to access new markets, through removal of transportation costs, which will create higher benefits than the potential tariff revenue lost as a result of countries not being able to tax ET (OECD 2019). While this

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<sup>14</sup> The General Agreement on Tariffs and Trade (GATT) also only constrains the applicability of CIT and VAT if they are applied in a way that contravenes the NT and MFN principles – for example, a member state applying CIT based on a threshold that excludes domestic firms or applying a VAT only aimed at large, foreign firms. The GATT regulates the imposition of customs duties in relation to products which may include 'electronic transmissions' if they are explicitly defined as a good.

<sup>15</sup> The term 'digital services' is not defined under the GATS. The extent to which a particular DST clashes with a given member's GATS commitments will depend on which services are taxed by the DST and whether these are considered to fall within a category of services included in a given member's schedule of commitments. Notably, members have not been able to reach agreement on whether various digital services that would ostensibly be caught by DSTs, such as search engines and cloud computing, that did not exist when GATS commitments were scheduled, are covered by the GATS. Moreover, agreement has not been reached on how they should be classified, or under which GATS mode of supply. For example, Zoom could be a value-added telecommunications service or a computer and related service. It is also unclear whether it is: delivered by a supplier in one country to a consumer in another country remotely (mode 1), consumed abroad (mode 2), supplied through foreign direct investment (mode 3), and/or supplied through movement of people (mode 4). This is further complicated by debates on the moratorium, under which the definition of ET may or may not include services, and further may or may not include the content of ET.

<sup>16</sup> Appellate Body Report, *Argentina – Measures Relating to Trade in Goods and Services*, WT/DS453/AB/R, adopted 9 May 2016, para 6.29.

<sup>17</sup> The European Commission, for example, has repeatedly found that online advertising is in a different market to offline advertising: Decision of 11 March 2008, COMP/M.4731 *Google/DoubleClick*, paras 45, 46, and 51.



may be true for developed countries such as the US, where custom duties account for roughly 3 per cent of tax revenue, potential tariff losses are much larger in many African countries, with higher contributions of custom duties to tax revenue. As indicated by the World Development Indicators 2022,<sup>18</sup> the share of custom duties in tax revenue is four times as much in Ghana (12 per cent), and more than double in Kenya (7 per cent) and Rwanda (8 per cent). The moratorium clearly constrains the ability of WTO Members to generate revenues from CDETs. In fact, new analysis suggests that even using the most conservative estimates and narrowest definition of ET, developing countries have lost tariff revenue worth US\$48 billion during the period 2017–2020 due to duty-free imports of just 49 products (at HS six digit) which include luxury items such as movies, music and video games (R. Banga 2022). The proposal to make the moratorium permanent – supported predominantly by developed countries at the WTO – will lead to African countries further trading off tariff revenues without even knowing what products will be digitalised in the future. One such example is the gradual rise in electronic SIM cards or e-SIM cards to replace physical SIM cards (R. Banga and K. Banga 2022).

In parallel to the extension of the WTO moratorium, PTAs/FTAs containing bans on the imposition of CDETs are being concluded in an effort towards norm-setting. As African countries negotiate the AfCFTA Protocol on Digital Trade, State Parties will undoubtedly be pressured by a variety of stakeholders to include a provision banning the imposition of CDETs. Similarly, in future PTA/FTA negotiations with third parties (such as the US–Kenya Strategic Trade and Investment Partnership (STIP)), African countries will be pressured to adopt bans on CDETs. While there would certainly be wiggle room in relation to the scope of such bans – many PTAs/FTAs do provide greater clarity on this front – their broad adoption would likely have a similar effect to making the WTO moratorium permanent. It is interesting to note here that of the total 184 PTAs with digital trade provisions, 76 contain a provision banning CDETs (Burri and Polanco 2020). But provisions are uncommon when Southern countries conclude agreements among one another – of the 60 South–South PTAs/FTAs, only nine contain commitments on not imposing CDETs, indicating a clear divergence in approaches between North–South (and North–North) and South–South PTAs/FTAs (K. Banga, Macleod, and Mendez-Parra 2021).

The moratorium does not appear to constrain the ability of Members to impose CITs or VATs. On certain definitions, DSTs could be viewed as being applied to electronic transmissions, specifically if the ET definition includes both the services and the content of the ET. The question then becomes whether they could be categorised as ‘customs duties’. This will depend on the design of a particular DST and the facts surrounding a particular case. It is perfectly conceivable that in certain instances DSTs will constitute *de facto* customs duties.

### **3.3 Digital trade rules (PTAs/FTAs/JSI)**

As mentioned, 89 countries are part of the Joint Statement Initiative (JSI) to commence negotiations on trade-related aspects of electronic commerce. However, with no consensus, the dominant digital trade narrative has been pushed forward largely through PTA/FTAs in an effort towards norm-setting. An innovation in PTA/FTA practice that takes us into the territory of the unregulated at the WTO level is ‘digital trade’ or ‘e-commerce’ rules.<sup>19</sup> These rules add an additional avenue of potential constraints to taxing the digital economy as they entail

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<sup>18</sup> <https://databank.worldbank.org/source/world-development-indicators>

<sup>19</sup> The term ‘digital product’ as used in this context should be seen as legal term used in specific PTAs/FTAs. These definitions may or may not overlap to varying degrees with the conceptual understanding of the term as used above.

non-discrimination obligations in respect of certain defined 'digital products',<sup>20</sup> as well as rules on data flows, the location of computing facilities, and source code and algorithms. **The latter types of rules have important administrative effects by curtailing the ability of tax authorities to collect data and other pertinent information thereby reducing their capacity to monitor and implement tax measures aimed at the digital economy.** These rules are relevant to all four types of tax measures under discussion in this paper.

### *3.3.1 Rules on cross-border data flows and the location of computing facilities*

Provisions on cross-border data flows or data storage typically aim to prohibit or regulate restrictions on the flow of data across borders.<sup>21</sup> A complementary rule contained in a number of PTAs/FTAs restricts the extent to which governments are permitted to impose data localisation requirements, i.e., requirements for data to be stored on computing facilities located within the physical boundaries of a particular party, or mandating that computing facilities be located within those physical boundaries.<sup>22</sup> Depending on the exact formulation of particular rules of this kind, governments may be restricted in their ability to adopt measures that require data or copies of data to be stored locally, measures that require data to be 'processed' locally, or outright bans on cross-border data transfers. **Importantly, provisions on free cross-border data flows can undermine the ability of governments to track where data is being processed and monetised,** which may in turn affect their ability to tax e-commerce and digital transactions involving persons within their jurisdictions.

Provisions on data localisation also have important tax implications. Data localisation has emerged as a potential (indirect) way to help ensure that enterprises with real interests but only a virtual presence in a given country can be required to pay taxes that reflect the revenues of the economic activities they undertake within these countries (Mayer 2018). Data localisation measures can force firms to use local computing facilities, or even to set up local computing facilities, an upshot of which, under certain circumstances, is that these firms are considered to have a permanent establishment for the purposes of establishing the nexus necessary for taxing them.<sup>23</sup> Some governments require firms to store certain data locally so that tax authorities can review the data in case of any audit or requirement for review. For example, New Zealand's Inland Revenue Act requires that all business records be stored in data centres located in New Zealand, the aim being to ensure that tax authorities have the necessary information at their disposal to assess to what degree multinational enterprises are complying with their tax obligations. However, in practice, there are challenges related to implementing the 'server as a permanent establishment' rule (see Cockfield 2005).

In data localisation and protection, the regulatory capacity and enforcement of laws is a key challenge in both developed and developing economies. In the EU, it is the Lead Supervisory Authority – the jurisdiction where internet giants put their European headquarters for tax purposes – that is responsible for coordinating investigations into breaches of digital trade laws. This jurisdiction hunt to find the friendliest data supervisor has led to countries racing to the bottom as they compete in laxity of laws to gain business (Shaxson 2020). Ireland, for instance, has emerged as the data protection haven for Big Tech. Many digital giants operating in the European Economic Area now have their headquarters in Ireland, with the Irish Data Protection Commission long facing criticism for failing to protect the data rights of

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<sup>20</sup> Rules preventing discrimination in relation to digital products typically apply alongside other rules in PTAs/FTAs, such as those on goods and services. As such, these rules do not provide additional legal certainty in relation to the extent to which rules on goods and services conceivably constrain the ability of countries to tax the digital economy, and they potentially add an additional set of constraints.

<sup>21</sup> See, for example, United States–Mexico–Canada Agreement (USMCA), Article 19.11.

<sup>22</sup> See, for example, Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Article 14.13.

<sup>23</sup> As reflected, for example, in the 2001 amendments to the OECD Model Tax Convention.

individuals and for having the highest data breaches in the EU and low rates of enforcement of GDPR rules. Other known tax havens such as Monaco, the British Virgin Islands, Gibraltar and the Isle of Man now have high rates of server penetration (secure servers per head of population), indicating that tax havens are adapting to the digital era (Shaxson 2020). Some tax havens are becoming data havens as well, making information difficult to access by tax authorities and other regulators (Kelsey *et al.* 2020).

### 3.3.2 Rules on source code and algorithms

The contribution of user data to value creation is central to the taxation debate. One group of countries, including the EU, believes that value creation based on user data allows businesses to collect a large amount of data and contributes to network effects, which justifies taxation in the country where the users are located. As posited by the European Commission, '[v]alue creation in the digital economy is a combination of algorithms, user data, sales functions and knowledge' (European Commission n.d.). This is best exemplified in the case of the recent lawsuit by the US Federal Trade Commission (FTC) against Amazon's 'Project Nessie' for using a secret algorithm from 2015 to 2019 which illegally inflated the prices offered by other online stores and resulted in \$1 billion of excess profits for Amazon.<sup>24</sup> In contrast, the US does not interpret user-generated value as relevant for taxation (EU 2019). Some digitalised businesses posit that data holds little value – it has to be processed, analysed and monetised for value creation by the firm. The real value comes from the intangible assets, such as algorithms and coding, which are used to interpret data and provide the revenue-generating service. The latter reasoning has been used to undermine the assertion that user-generated value can be attributed to users, and to instead claim that all value creation is done at the level of the firm that manipulates the data. For example, if the data is determined to be self-created by a firm, it would not be captured on standard balance sheets and would traditionally not be taxed (Köthenbürger 2020). Furthermore, the value of the data may not be intrinsically linked to the value of the business; it is what the company does with the data that makes it valuable. The *commercialisation* of user data therefore needs to be taxed (Karangwa, Alexander, and Ndumbai 2021).

While it may be the case that a large portion of the value realised from data is generated in the processing stages, it may equally be argued that without any user data to process there would be no value realised at all. To effectively implement tax measures and assess the value of commercial activities, tax authorities must have the ability to access firms' data and data-based business models, source codes and the algorithms use to mine and utilise the data. At present, there are rules in some PTAs/FTAs (especially those to which the US are a party), and also being proposed at the JSI, which restrict the ability of the governments to ask for access to, or disclosure of or transfer of, the source code of software and/or algorithms, which could be harmful for the taxation of the digital economy. Bans on source code sharing make it impossible for governments to access a combination of data and source code and/or algorithms (for a slightly different variant of this argument, see James 2019).

## 3.4 Taxation provisions and exceptions in trade agreements

The GATS agreement and FTAs also provide some tax exceptions for 'legitimate public policy objectives' but these are increasingly limited in their scope, inconsistent across agreements and create legal uncertainty (Kelsey *et al.* 2020). Differences in treatment are allowed under GATS, for example, if aimed at ensuring the equitable or effective imposition

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<sup>24</sup> <https://www.ft.com/content/4007b106-0748-4417-81d8-6bdc61800ffe>

or collection of direct taxes in respect of services or service suppliers of other Members.<sup>25</sup> Differences in treatment are also allowed if they are the result of an agreement on the avoidance of double taxation or provisions on the avoidance of double taxation in any other international agreement or arrangement by which the Member is bound. Within this context, an issue to stress is that significant uncertainties remain regarding the classification of services under the GATS, especially those that form part of the digital economy, which may deter Members from taking certain taxation measures.

PTAs/FTAs, moreover, usually contain taxation exceptions, which are important to discuss. A good example of an exception of this kind comes from Article 15.5 of the Digital Economy Partnership Agreements (DEPA) between New Zealand, Chile, and Singapore. DEPA defines ‘taxes’ and ‘taxation measures’,<sup>26</sup> and then proceeds to clarify that ‘[n]othing in this Agreement shall apply to taxes or taxation measures’.<sup>27</sup> It also indicates that ‘[n]othing in this Agreement shall affect the rights and obligations of any Party under any tax convention’ and that ‘[i]n the event of any inconsistency between this Agreement and any such tax convention, that convention shall prevail to the extent of the inconsistency’.<sup>28</sup> DEPA also creates a specific process for resolving disputes on whether an inconsistency exists between the DEPA and tax conventions.<sup>29</sup> However, not all trade agreements have such categorical provisions. For example, the EU-Singapore FTA, which also includes taxation exceptions,<sup>30</sup> only applies to taxation measures ‘insofar as such application is necessary to give effect to the provisions of [that agreement]’.<sup>31</sup> Another example comes from the US–Japan Digital Trade Agreement (UJDTA), which does not as a general proposition apply to taxes and taxation measures,<sup>32</sup> but does render non-discrimination disciplines on digital products applicable to certain types of taxes and taxation measures.<sup>33</sup> While the UJDTA does not appear to affect the ability of either party to apply CITs and VATs, it does appear to be geared towards ruling out the permissibility of applying DSTs.<sup>34</sup> Specifically, it ensures a non-discriminatory treatment of digital products, including coverage of tax measures, and prevents the imposition of CDETs.

With a tax exception of this kind in place, and a large number of PTAs/FTAs do contain such exceptions, the extent to which rules in a PTA/FTA constrain the ability of governments that are parties to that agreement to tax the digital economy essentially comes down to how ‘taxes’ and ‘taxation measures’ are defined. In the case of DEPA, taxes and taxation measures ‘include excise duties, but do not include ... [customs duties, fees or other charges in connection with the importation commensurate with the cost of services rendered, and antidumping or countervailing duties]’.<sup>35</sup> As such, DEPA – or agreements, such as the USMCA, that adopt the same approach – would still clearly prevent the imposition of CDETs.

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<sup>25</sup> See Article XIV(d) of the GATS, which also includes a footnote that indicates that ‘[m]easures that are aimed at ensuring the equitable or effective imposition or collection of direct taxes include measures taken by a Member under its taxation system which’, for example, ‘(iii) apply to non-residents or residents in order to prevent the avoidance or evasion of taxes, including compliance measures’, among several others. We do not read Article XIV(d) as rendering DSTs which have already been found to be in violation of the NT or MFN disciplines consistent with the GATS. Such a reading by the WTO Dispute Settlement Body appears unlikely given that it may render the utility of NT and/or MFN obligations contained in the GATS nugatory.

<sup>26</sup> DEPA, Article 15.5(1).

<sup>27</sup> DEPA, Article 15.5(2).

<sup>28</sup> DEPA, Article 15.5(3).

<sup>29</sup> DEPA, Article 15.5(3).

<sup>30</sup> See EU–Singapore FTA, Article 16.6(2)-(4).

<sup>31</sup> See EU–Singapore FTA, Article 16.6(1).

<sup>32</sup> See UJDTA, Article 6(1).

<sup>33</sup> See UJDTA, Article 6(3).

<sup>34</sup> See UJDTA, Article 6 read with Article 8.

<sup>35</sup> DEPA, Article 15.5(1).

The provisions on ‘digital products’ in PTAs/FTAs can also include exceptions. For example, the USMCA bans source code sharing but provides an exception for taxation. In particular, Article 19.16(1) of the USMCA states that ‘[n]o Party shall require the transfer of, or access to, a source code of software owned by a person of another Party, or to an algorithm expressed in that source code, as a condition for the import, distribution, sale or use of that software, or of products containing that software, in its territory’, but clarifies in Article 19.16(2) that ‘[t]his Article does not preclude a regulatory body or judicial authority of a Party from requiring a person of another Party to preserve and make available the source code of software, or an algorithm expressed in that source code, to the regulatory body for a specific investigation, inspection, examination, enforcement action, or judicial proceeding,[] subject to safeguards against unauthorized disclosure’.

Similarly, DEPA has a provision for free cross-border data flows but excludes from its scope ‘information held or processed by or on behalf of a [government, including its tax authority], or measures related to that information, including measures related to its collection’.<sup>36</sup> However, exceptions of this kind do not prevent firms from shifting data necessary for a proper assessment of value and compliance with tax measures to other jurisdictions. There is uncertainty on whether such exceptions would extend to information that a government requires to be collected pursuant to regulations or contracts but does not itself hold or process (Kelsey *et al.* 2020). It has also been argued that these kinds of exceptions do not extend to requirements that taxable businesses retain within the country the kind of information that is needed for compliance with, say, a DST, such as the number of local users or uses, or the value of the data those users have generated in relation to targeted advertising (Kelsey *et al.* 2020).

## 4 Kenya case study

### 4.1 Traditional tax instruments

In terms of CIT, Kenya was not initially part of the OECD/G20 ‘Two Pillar Solution’.<sup>37</sup> As per our review of estimates in Table 4.1, Kenya stands to gain \$19.6–50 million under the UN Model approaches. Under the OECD BEPS approach, Kenya’s gains are roughly \$5.6 million. Since the OECD BEPS approach requires removal of its DST, these revenue estimates need to be further set against losses from DST revenues forgone. But the comparison of Amount A under the OECD BEPS and DST is no easy feat – Amount A includes all sectors (except the financial, insurance, and extractives industries), whereas DSTs target only specific sectors in the digital economy. Another difference is the thresholds applied to determine the companies in scope. Thresholds applied under Amount A are higher than those under DSTs, leading to more in-scope companies under DSTs. Nonetheless, estimates in Borders *et al.* (2023) and media reports<sup>38</sup> suggest that Kenya’s revenue gains from DSTs are in the range of \$1–1.6 million. This indicates that the revenue gains for Kenya from the OECD BEPS approach would be less than \$5 million.

In 2021, Kenya introduced additional VAT (the current rate is 16 per cent) rules taxing business-to-consumer sales by non-resident businesses via digital marketplaces and websites, including digital advertising services. Kenya’s VAT is applied on a destination basis and VAT is charged on telecommunications services, including calls and internet data. The

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<sup>36</sup> See DEPA, Article 2(d). See also, for example, USMCA, Article 19.2(3)(b).

<sup>37</sup> It has recently reversed course, however. See further below.

<sup>38</sup> <https://www.businessdailyafrica.com/bd/economy/new-digital-tax-mechanism-promises-kenya-windfall--4182284>

Finance Act of 2023<sup>39</sup> clarifies that under the VAT Act of 2013, suppliers of all imported digital services are required to register for VAT. As illustrated in Table 4.1, if Kenya's VAT rate applied to all DDSs, this would yield around \$125 million,<sup>40</sup> which amounts to approximately 3.5 per cent of total VAT revenue.<sup>41</sup>

**Table 4.1 Expected revenue generation from taxation of the digital economy (USD mil)**

	Bilateral approaches		Multilateral approaches		Unilateral approaches		
	UN Model treaty; 3% tax on ADS	UN Model treaty; 3% tax on ADS and hybrid digital services	OECD BEPS new tax deal (pillar 1) gross gains	OECD BEPS new tax deal (pillar 1) net gains	Digital services taxation	VAT on online imports of DDS	Custom duties on digitisable products, <sup>42</sup> applied tariffs
<b>Kenya</b>	19.6	50	5.6	5.6	1.6	125	
<b>Rwanda</b>	2.9	1.3	0.8	0.8		11	14
<b>South Africa</b>	-42	-254	60.3	-713.5		714	44

Source: Estimates from VAT approach are calculated by the authors using TisMOS data<sup>43</sup> and the PWC global tax summary<sup>44</sup> for 2017 (the latest year that reports modes of supply). These estimates represent an upper threshold of gains from VAT since the classification of digital services subject to VAT differs across Kenya, Rwanda and South Africa. To facilitate comparison, we have adopted the harmonised and broad definition of DDS by UNCTAD. The estimates of revenue generation under the UN approach are obtained for the year 2018 from Starkov and Jin (2022). The estimates of revenue from removal of custom duties on digitisable products are obtained from R. Banga (2022) for the year 2020. While other studies such as Starkov and Jin estimate revenue from Pillar 1, we use estimates by Barake and Le Pouhaër (2023) (appendix A2) since they also provide net gains, accounting for double taxation relief rules. Estimates of revenue gains from 1.5% DST in Kenya are from Borders *et al.* (2023).

## 4.2 New tax instruments

A notable expansion of digital services has taken place in Kenya: over the last decade 2010–2020, Kenya's imports of digitally deliverable services (DDS) rose by almost 15 percentage points (Figure 1.1). In 2020, the Finance Act in Kenya was amended to add a DST, which became effective as of 1 January 2021. A DST of 1.5 per cent was payable 'on income derived or accrued in Kenya from businesses carried out over the internet or an electronic network including services offered through a digital market place' (Kenya Revenue Authority n.d.). Effective 1 July 2021, the DST was amended to exclude non-residents with a

<sup>39</sup> <https://www.kra.go.ke/popular-links/key-highlights-of-the-finance-act-2023>

<sup>40</sup> See Appendix 1 for further calculations.

<sup>41</sup> Authors' calculations based on Table 4.1, exchange rate data from Google, and revenue data from the Kenya Revenue Authority's Annual Revenue Performance Report for 2017/18.

<sup>42</sup> The term 'digitisable products' is as used in R. Banga (2022). In essence, digitisable products are those which have a Harmonised System (HS) code and were traditionally traded physically, but are increasingly traded online. For example, sound recordings were traditionally traded physically on records, CDs and so on but today, they are traded digitally via the internet.

<sup>43</sup> [https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm)

<sup>44</sup> <https://www.pwc.com/gx/en/tax/corporate-tax/worldwide-tax-summaries/pwc-worldwide-tax-summaries-corporate-taxes-2017-18-middle-east.pdf>

permanent establishment in Kenya. The DST covered a broad range of services,<sup>45</sup> but excluded communication services such as text messages and phone calls as well as digital advertising (Deloitte 2020).<sup>46</sup>

In case of CDETs, at present, Kenya does not have any direct laws, but it is participating in the JSI negotiations, where there is a strong push by mostly developed economies for making the moratorium permanent. Kenya is a net importer of electronically transmitted products such as video games, software, e-books etc (Appendix 2). Throughout 2017–2021, Kenya’s exports of ET products have remained consistently below its imports, albeit that the year 2020 recorded a significant jump in Kenya’s exports of ET products. This indicates that CDETs may be an important policy instrument for Kenya to generate revenue.

### **4.3 How trade rules constrain Kenya’s ability to tax the digital economy**

#### *4.3.1 Trade rules on services*

For cross-border trade in computer-related services under GATS, Kenya has no requirements for local/physical presence of foreign companies. Prior to 2022, digital platforms such as Amazon could operate in Kenya without a local presence and without registering as a taxpayer in the country. Kenya’s Finance Act 2022, however, amended the country’s national VAT Act, mandating all non-resident suppliers of digital services to register for VAT in Kenya. Under this act, non-resident businesses must charge Kenyan VAT on B2B (business-to-business) and B2C digital service transactions, irrespective of the local turnover/sales amounts.

GATS does not constrain Kenya’s ability to impose a DST since Kenya has not taken on any sector-specific commitments on national treatment and market access in computer and computer-related services (see Appendix 3). It has, however, taken on commitments under audio-visual services for the supply of motion picture production and projection services, as well as commitments under communication services. In its design of the DST, Kenya has excluded communication services, such as text messages and phone calls, and digital advertising services, which are instead subject to VAT. Additionally, digital advertising services are also subject to a withholding tax.

In February 2023, Kenya concluded the opening round of negotiations on the STIP with the United States, including in the area of digital trade (Office of the United States Trade Representative 2023). During the negotiations, the US envoy opposed the imposition of Kenya’s 1.5 per cent DST as the US found these laws discriminatory against US companies operating in Kenya. In March of 2023, the Kenyan government announced plans to adopt the OECD/G20 Two-Pillar approach (Orbitax 2023), which means it will repeal the DST if the MLC comes into force. It has been reported that Kenya’s initial failure to adopt the OECD/G20 approach was a stumbling block in the ongoing US–Kenya STIP negotiations, and that this is why Kenya has changed course (Muiruri 2023).

#### *4.3.2 Rules on customs duties on electronic transmissions*

As a WTO Member, Kenya is currently subject to the moratorium. It is also signatory to the JSI, which is seeking to making the moratorium permanent.

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<sup>45</sup> Digital content streaming, the transmission of monetised data from digital marketplace activities, provision of digital marketplaces, websites or other online, subscription-based media, including news, magazines and journals, electronic data management, including website hosting, online data storage, file sharing and cloud storage services, the provision of search engine and automated support desk services, including the provision of personalised search engine services.

<sup>46</sup> Digital advertising is subject to a withholding tax, with all income subject to a withholding tax being exempt from the DST.

### 4.3.3 Digital trade rules

At the time of writing, Kenya has not to our knowledge joined any PTAs/FTAs that contain rules on digital products, cross-border data flows, the location of computing facilities, and/or source code and algorithms. On 19 June 2023, the EU and Kenya announced the ‘political conclusion’ of the negotiations for an economic partnership agreement (EPA) (EU–Kenya EPA), with the text of the agreement currently undergoing legal scrubbing (European Commission 2023). While it is not the practice of the EU to include digital trade provisions in initial versions of their EPAs, it is noteworthy that EPAs tend to open avenues for future negotiations, including on digital trade. For example, the initial EPA between the EU and five Eastern and Southern African countries (the EU–ESA EPA) contained no provisions on digital trade. However, the parties to the EU–ESA EPA are currently busy negotiating additional rules with a view to deepening integration between them, and these additional rules are set to include rules on digital trade. If concluded, the US–Kenya STIP will also contain provisions on digital trade, which are part of the negotiating agenda (United States Trade Representative 2022). This would likely mean the US pushing for free cross-border data flows between the US and Kenya, the prohibition of data localisation, and bans on source code sharing, as is the case in all US PTAs/FTAs with e-commerce/digital trade chapters. As in the case of the UJDTA, it will also likely include taxation provisions which render the disciplines contained in the agreement applicable to DSTs. This would be highly significant given that US firms tend to dominate the digital economy and would make up a large portion of any taxable income/revenue derived in connection with imports into Kenya.

Unless appropriately crafted exceptions are included in Kenya’s future PTAs/FTAs, or any future WTO rules, Kenya’s domestic provisions on data governance may be found to be inconsistent with digital trade provisions, which means that they may have to be amended to bring them in line with Kenya’s international obligations. For example, during the US–Kenya FTA negotiations, concerns were raised in respect of data localisation and conditional data transfers under Kenya’s Data Protection Act of 2019 (KDPA, Part VI). Kenya’s existing domestic laws and regulations follow a *conditional* approach to the transfer of personal data outside Kenya. Section 48 of Kenya’s Data Protection Act permits personal data to be transferred out of Kenya only *if* appropriate safeguards are met with respect to security and the level of data protection in other jurisdictions and/or the transfer is necessary for one of six reasons, including contractual performance at the request of the data subject.<sup>47</sup> Moreover, Section 49 enables the Data Commissioner to prohibit, suspend or subject the transfer to conditions for protecting the rights and fundamental freedoms of *data subjects*, while Section 50 provides conditions for data localisation requirements based on the grounds of the strategic interests of the state or *protection of revenue*. For certain purposes, particular types of personal data must be processed through a server and data centre located in Kenya,<sup>48</sup> or at least one serving copy of the concerned personal data must be stored in a data centre located in Kenya.<sup>49</sup> In 2021, the Office of the Data Commissioner issued draft regulations proposing that data processed for ‘actualising a public good’ shall be processed in a server and data centre based in Kenya, including data on public revenue administration.

For checking whether non-resident digital services providers are complying with DST in Kenya, the Kenya Revenue Authority (KRA) could require access to data on internet protocol addresses and billing addresses registered in Kenya to non-residents (Kijirah and Thuo 2021). By mandating that this data is held in Kenya, the KRA could increase its revenue

<sup>47</sup> Due to the omission of an ‘and’/‘or’ in section 48, it is unclear from the text of the section whether it is necessary for appropriate safeguards to be put in place if one of the six reasons is complied with.

<sup>48</sup> Data localisation efforts in Kenya are being supported by development of local data infrastructure; over US\$480 million will be invested in data centre development across Kenya between 2021 and 2026.

<sup>49</sup> KDPA Regulations 2021, regulation 26(1)(a) and (b).



collection. However, the international Computer and Communications Industry Association (CCIA) has argued that such data localisation mandates are a barrier to cross-border digital trade for American companies in Kenya.

Kenya is also a party to the AfCFTA, the State Parties to which are, as mentioned above, currently negotiating a digital trade protocol. It is likely that rules that may constrain the ability of State Parties to tax the digital economy are under consideration and, based on the above, that Kenya may itself be pushing for liberal rules on digital trade disciplines. If the digital trade protocol does eventually include such rules, this would add further salience to the US–Kenya STIP negotiations because US firms, relying on a combination of the digital trade protocol and the STIP, would then be able to use Kenya as a regional hub to reach other digital markets on the continent unimpeded, which would have significant tax implications for the other AfCFTA State Parties.

## 5 Rwanda case study

### 5.1 Traditional tax instruments

Rwanda is not currently part of the OECD/G20 ‘Two Pillar Solution’. As indicated in Table 4.1, it stands to gain only around \$0.8 million in tax revenues under that approach. Moreover, in the case that Rwanda adopts a DST, these estimates would have to be adjusted to account for the DST revenue forgone. In comparison, under the UN Model approaches referred to in Table 4.1, Rwanda would stand to gain \$1.3–2.9 million.

Rwanda introduced a VAT rate of 18 per cent in 2023, adding ‘online suppliers’ into the ambit of taxation. There are no thresholds on VAT, indicating that all digital businesses, regardless of their annual turnovers, in which transactions are performed via an online marketplace, are liable to pay VAT. Such VAT would be applicable to a range of products, including downloadable digital content such as books and movies, subscription-based services including news, video, music and search engine services, electronic data management services, and online marketplaces that link services to suppliers including transport, accommodation, and tourism. As illustrated in Table 4.1, Rwanda stands to gain around \$11 million per year were VAT to be applied to all DDS imports, which amounts to approximately 2.2 per cent of total VAT revenues collected in 2017.<sup>50</sup>

### 5.2 New tax instruments

Rwanda does not presently have a DST in place. For Rwanda, applying CDETs offers the highest potential revenue gains out of the approaches compared in Table 4.1. An analysis using applied tariff rates suggests that Rwanda can generate around \$14 million, which amounts to around 12 per cent of total import duties collected in 2020.<sup>51</sup>

### 5.3 The extent to which trade rules constrain Rwanda’s ability to tax the digital economy

#### 5.3.1 Trade rules on services (WTO/PTAs)

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<sup>50</sup> Authors’ calculations based on Table 4.1, exchange rate data from Google, and revenue data from the OECD Revenue Statistics in Africa Report for 2020.

<sup>51</sup> Authors’ calculations based on Table 4.1, exchange rate data from Google, and revenue data from the OECD Revenue Statistics in Africa Report for 2022.

Rwanda has no sector-specific commitments on computer-related services, audio-visual services, or telecommunication services under the GATS (see Appendix 3). As such, its GATS obligations would likely not prevent Rwanda from imposing a DST.

### *5.3.2 Rules on custom duties on electronic transmissions*

A joint paper by the Rwanda Revenue Authority (RRA) and the ICTD references the Africa Group's stand at the WTO opposing the moratorium and other proposed rules, seeking to 'preserve their right to regulate e-commerce' and calling for 'a thorough examination of the opportunities and risks associated with digital transformation and e-commerce' (Karangwa *et al.* 2021). The limitations that may arise from the negotiations are likely to have implications for tax policymaking in respect of the digital economy and tax authorities must pay keen attention to the outcomes of these negotiations. The potential tariff revenue lost from the moratorium on ET between the period 2017–2020 was approximately \$45 million using applied duties (R. Banga 2022).

### *5.3.3 Digital trade rules (PTAs/FTAs/JSI)*

Rwanda has not, to our knowledge, signed any PTAs/FTAs that include digital trade disciplines. It is, however, a State Party to the AfCFTA, which is currently negotiating a digital trade protocol. It is likely that rules that may constrain the ability of State Parties to tax the digital economy are under consideration.

Rwanda follows a 'data sovereignty' approach. Its 2017 Data Revolution Policy states that Rwanda has exclusive sovereignty over national data, but it makes provision for hosting data on the cloud or in a collocated environment in data centres within or outside the country, under agreed terms. Articles 48–50 of the Law Relating to Protection of Personal Data and Privacy (Rwanda DPL) regulates the conditions under which personal data may be transferred outside of Rwanda. Article 48 sets out a number of conditions in terms of which a data controller or processor may transfer personal data outside Rwanda, which includes upon consent of the data subject or if the transfer is necessary to perform a contract. Article 49 provides that a data controller or processor must, before transferring data outside of Rwanda, enter into a written contract with the third party outside of Rwanda setting out the respective roles and responsibilities of the parties in order to ensure compliance with the Rwanda DPL. Finally, Article 50 indicates that data controllers and processors must, as a rule, store personal data in Rwanda. However, storage outside of Rwanda is permitted if the data controller or the data processor holds a valid registration certificate, issued by the DPO, authorising them to store personal data outside Rwanda. Additional rules also apply to particular types of data. For example, Article 16 of the Regulations Governing Telecom Network Security in Rwanda of 2016 restricts telecommunication service providers from transferring, storing or processing subscribers' information outside of Rwanda. Another example is Article 17 of the Ministerial Instructions on ICT Procurement which denotes that all government IT systems and applications that process, store and provide 'critical Government data' shall be hosted in the National Data Centre (NDC).

Unless appropriately crafted exceptions are included in Rwanda's future PTAs/FTAs, or any future WTO rules, the provisions of the Rwanda DPL, as well as other rules such as those discussed above in the examples on telecommunication and critical Government data, may be found to be inconsistent with digital trade provisions, which means that they may have to be amended in order to bring them in line with Rwanda's international obligations. This is particularly noteworthy given that the RRA maintains that user data is the main income

generating asset for platform owners,<sup>52</sup> but tax authorities remain blind to the contents of the data and also to how the value is made (Karangwa *et al.* 2021).

## 6 South Africa case study

### 6.1 Traditional tax instruments

South Africa charges a 15 per cent VAT (on both B2B and B2C transactions) on the domestic consumption of foreign electronic services, when the supply exceeds 1 million South Africa rand (ZAR) in any consecutive 12-month period, the foreign supplier has voluntarily registered for VAT, or the foreign supplier has appointed an intermediary in South Africa. Electronic services are defined as ‘any services supplied by means of an electronic agent, electronic communication or the internet for any consideration’,<sup>53</sup> but exclude certain online educational services, financial services such as currency exchange, the provision of life insurance or medical schemes, the content of telecommunication services, and the output of any foreign service delivered to the South African resident by email. As illustrated in Table 4.1 above, were South Africa’s VAT rate of 15 per cent applied to all DDSs imports, this would yield around US\$714 million, which amounts to approximately 3 per cent of total VAT revenue collected in 2017.<sup>54</sup>

South Africa has signed on to the OECD/G20 ‘Two Pillar Solution’. South Africa’s gross gains under Pillar One’s Amount A are around \$60 million, approximately 0.25 per cent of total CIT revenue for the 2018 tax year.<sup>55</sup> However, it stands to lose revenue under the UN Model approach, and considering net gains under the OECD approach, as illustrated in Table 4.1. This is because South Africa hosts MNEs that would be included in the scope of Article 12B taxation and generate revenues in foreign jurisdictions (Starkov and Jin 2022).

### 6.2 New tax instruments

Since 2020, the National Treasury has mentioned the possibility of establishing a DST in all its annual budget reviews (Giardini and Pierotic 2023). However, as mentioned in these same budget reviews, South Africa has not made specific DST proposals given that it is party to the OECD/G20 ‘Two Pillar Solution’, in terms of which signatories undertake not to impose DSTs until at least 1 January 2024.

In a 2020 policy brief on tax policy considerations in relation to the digital economy, South Africa’s Parliamentary Budget Office raised the issue of revenue losses because of the WTO moratorium (Jantjies 2020). As per Table 4.1, South Africa is losing around US\$44 million per year by not imposing customs duties on digitisable products, which amounts to around 1.2 per cent of total customs revenue for the year 2020.<sup>56</sup> South Africa’s net imports of ET products were over US\$1 billion (Appendix 2) and the potential tariff revenue lost from the moratorium between the period 2017–2020 was over \$700 million for the country (R. Banga 2022).

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<sup>52</sup> See section 2 for diverging views on the value and taxation of ‘user data’.

<sup>53</sup> Value Added Tax Act, 1991, section 1, read together with the relevant regulations to the Act.

<sup>54</sup> Authors’ calculations based on Table 4.1, exchange rate data from Google, and revenue data from the South Africa Revenue Service for 2017.

<sup>55</sup> Authors’ calculations based on Table 4.1, exchange rate data from Google, and revenue data from the South Africa Revenue Service for 2018.

<sup>56</sup> Authors’ calculations based on Table 4.1, exchange rate data from Google, and revenue data from the South Africa Revenue Service for 2020.

## 6.3 How trade rules constrain South Africa's ability to tax the digital economy

### 6.3.1 Trade rules on services

As noted above, South Africa has, under the auspices of the OECD/G20 'Two Pillar Solution', undertaken to refrain from imposing DSTs until the end of 2023, unless the MLC is concluded, in which case South Africa would be barred from implementing a DST going forward as well. If the MLC does not materialise by the end of 2023, however, South Africa's ability to impose a DST may still be constrained by its WTO obligations, especially those under the GATS. South Africa, unlike Kenya and Rwanda, has taken commitments on market access and national treatment on the supply of computer-related services (CRS) sectors across modes 1, 2 and 3 under the GATS, which includes commitments on sub-sectors related to consultancy services related to the installation of computer hardware, software implementation services, data processing services, and database and maintenance services for ICT equipment. As such, any DST that South Africa were to implement would have to be non-discriminatory, i.e., would have to be in keeping with the NT and MFN principles espoused in the GATS.

### 6.3.2 Rules on custom duties on electronic transmissions

South Africa (in conjunction with India) in its 2019 communication in the WTO raised concerns over the moratorium on the grounds of revenue implications. In addition to concerns over revenue losses, South Africa and India also raised concerns over the lack of clarity on the scope and definition of electronic transmissions; the technical feasibility of imposing customs duties on electronic transmissions; and the broader impact of the moratorium on digital industrialisation in emerging economies, asserting that '[c]ustoms duty free imports of digital products may hinder the growth of the infant digital industry in developing countries' (Governments of India and South Africa 2019), with particularly adverse implications for SMEs. It should also be noted that South Africa is not currently part of the e-Commerce JSI, which is indicative of its reservations on having multilateral rules related to e-commerce/digital trade.

### 6.3.3 Digital trade rules

South Africa is not currently a party to any PTA/FTA that contains digital trade provisions, nor do any of its PTAs/FTAs seemingly impose additional constraints on South Africa's ability to tax the digital economy. South Africa is, however, a party to the AfCFTA, the State Parties to which are, as mentioned above, currently negotiating a digital trade protocol. It is likely that rules that may constrain the ability of State Parties to tax the digital economy are under consideration. Given that South Africa is one of the largest economies on the continent, this may be to the benefit of its own firms. However, any benefits of this kind would have to be weighed against the possibility that other State Parties may negotiate PTAs/FTAs with other larger economies outside of the continent that are deleterious to South Africa's ability to tax the digital economy, as the US–Kenya STIP negotiations referred to above make abundantly clear.

South Africa has sectoral data localisation policies. In 2012, the South African Revenue Service (SARS) laid down laws on electronic tax records, stipulating that all tax data needs to be kept physically within South Africa and cannot be transferred outside the country without prior approval from a senior SARS official.<sup>57</sup> In July 2020, the Protection of Personal Information Act of 2013 (POPIA) came into effect in South Africa, with Section 72 identifying

<sup>57</sup> <https://www.sars.gov.za/wp-content/uploads/Legal/SecLegis/LAPD-LSec-TAdm-PN-2012-01-Notice-787-GG-35733-1-October-2012.pdf>

specific conditions which, if satisfied, allow for personal information to be transferred out of South Africa. These conditions include obtaining the consent of the data subject,<sup>58</sup> or ensuring that the jurisdiction to which the data is being transferred provides an adequate level of data protection in its own jurisdiction.<sup>59</sup> Such jurisdiction must also ensure an adequate level of protection in relation to further cross-border transfers to other jurisdictions.<sup>60</sup> Section 72 does not speak to situations where SARS or another government actor requires access to personal data that may be transferred out of South Africa. While POPIA does not apply to the processing of personal information by or on behalf of a public body, this is only for specific purposes, which arguably does not include things like tax assessments.

South Africa's *draft* National Data and Cloud Policy (Draft Policy) proposes that data localisation policies be imposed on cross-border data flows in certain contexts. It states that the data generated in South Africa by a company – even if is foreign – will be the property of South Africa, regardless of where the technology company is domiciled. The Draft Policy lacks clarity, but it does speak to South Africa's general approach.

Taxation is discussed very briefly, but the sentiments expressed are important. Specifically, the Draft Policy notes that '[i]n digitised, data-driven economies, companies and individuals have found innovative ways to conduct data-related business transactions in countries where they do not have offices or a physical presence', and that '[t]his creates a challenge in determining where digital businesses derive revenue and pay taxes and makes it easy for a country to be deprived of its due tax revenues'.<sup>61</sup> Additionally, the Draft Policy indicates that '[t]o determine the appropriate tax to be paid ... there is a need for adequate information about each company, its business activities and the revenues accruing therefrom', but softens the assertion by adding that '[t]his needs to be managed in a manner that cannot be seen to be discouraging to investment because multinational companies tend to seek countries that have favourable tax policies'.<sup>62</sup> Finally, the Draft Policy states that '[f]or South Africa to derive tax revenue from digital activities, appropriate frameworks and policies need to be in place, informed by best international practices, while also taking into account the need to grow the data-driven economy by combining foreign investment and localised initiatives' and notes that SARS 'has indicated that work is already under way in this area'.<sup>63</sup> The final policy is due to be finalised soon (South African Government News Agency 2023), and should be closely followed to see whether it shines further light on South Africa's intended approach to taxing the digital economy.

The Department of Public Service and Administration in the South African government has adopted a policy on free and open-source software use, mandating disclosure of source code for government projects. Generally, South Africa seems to be in support of technology transfer for economic development, especially in relation to science and technology; the Department of Science and Technology's White Paper in 2019 reinforced the support for technology transfer, including the commercialisation of IP (Tavengerwei, Mumbo, and Kira 2022).

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<sup>58</sup> POPIA, section 72(b).

<sup>59</sup> POPIA, section 72(a)(i).

<sup>60</sup> POPIA, section 72(a)(ii).

<sup>61</sup> Draft Policy, page 26.

<sup>62</sup> Draft Policy, page 26.

<sup>63</sup> Draft Policy, page 27.

# 7 Conclusions, recommendations, and future research

In this paper, we developed a framework to illustrate how, and to what extent, trade rules are undermining the ability of countries to tax their digital economy through traditional tax instruments (CIT and VAT) and new tax instruments (DST and CDET). We then applied this framework to the cases of Kenya, Rwanda, and South Africa to illustrate what is at stake in practical terms. We find that the potential of revenue generation from the different tax instruments varies across countries. Kenya, for example, stands to benefit more from the full implementation of VAT rates on cross-border imports of DDS and from the UN model treaty, compared to revenue gains under the OECD BEPS approach.<sup>64</sup> Rwanda, in contrast, would benefit more by applying CDETs compared to other approaches. It should, of course, be borne in mind that a number of these measures can, depending on the extent to which tax and trade rules come into play, be imposed alongside one another or at the expense of one another. The revenue estimates discussed should be viewed with this in mind.

## 7.1 Summary and conclusion

The case studies revealed that **trade rules in services (under GATS and PTAs/FTAs) have a direct effect in determining the legal position of the countries to impose DSTs**, an important taxation approach for African countries where foreign firms can operate without having to establish a local presence. Kenya has taken commitments on communication and audio-visual services under GATS but not on other sectors relevant to the digital economy, such as computer and related services. In its design of the 1.5 per cent DST, Kenya has excluded communication services, such as text messages and phone calls and digital advertising services. These services are instead subject to VAT, with digital advertising services additionally subject to a withholding tax at the time of the transfer of payment by the customer, with a tax return necessary at the end of every tax quarter.

African countries can target digital businesses by a DST on business incomes accruing through a digital marketplace or the supply of digital products and services. This could be charged on the gross transaction value (as in the case of Kenya) or gross turnover (as in the case of Nigeria) and apply to specific 'digital services', shifting the tax burden from consumers, as in the case of VAT, to digital service providers.<sup>65</sup> However, countries with GATS commitments in services sectors relevant to the digital economy need to carefully design DSTs, so that they are not challenged for violation of the principles of MFN and NT in GATS and under PTAs. South Africa, for example, has taken commitments on the cross-border supply of computer and related services under GATS. If it chooses to adopt a DST, it could follow the EU's example in designing and defending its DST, in accordance with its international trade, investment and taxation obligations. It could also make use of certain exceptions for taxation purposes related to direct taxes on income or capital under GATS, making the categorisation of digital taxes very important. Overall, whether a DST is likely to breach commitments depends on the design of the tax as well as the specific drafting of non-discrimination provisions in the services and digital trade chapters, as well as the nature of general exceptions, particularly those on tax (Jones *et al.*, 2020).

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<sup>64</sup> This is consistent with other analyses. See, for example, Köhler-Suzuki and Tavengerwei 2021.

<sup>65</sup> While we have not considered the distributional and normative implications of adopting any or all of the four types of taxation measures discussed in this paper, incorporating these kinds of factors into the formulation of a holistic approach to taxing the digital economy cannot be overstated. Among other things, policymakers should, in our view, consider the impact of any taxation measure on vertical and horizontal economic inequalities, as well as from the vantage point of various conceptions of distributive justice.

Considering that GATS comes into play only when a Member state has taken commitments on specific sectors and modes of supply, the applicability of other trade agreements, and differences in the classification of digital services, the legality of DST will always have to be evaluated on a case-by-case basis. In any case, given the imbalances in international trade in services, Picciotto (2021) cautions against developing countries making any commitments on trade in services and identifies the need for careful consideration of their tax consequences. Beyond GATS, extensive commitments made in bilateral or regional digital trade agreements could constrain the ability of African countries to tax the digital economy unless broader cave-outs are considered in these agreements.

### **Trade rules on electronic transmissions affect the ability of countries to raise revenue.**

At the WTO, a set of mostly developed Members are pushing to make the moratorium permanent, which will have critical revenue implications for some African countries, such as Rwanda. The case studies show that Kenya, Rwanda, and South Africa are net importers of ET, and just in the year 2020, the revenue losses from the moratorium were estimated to be \$44 million for South Africa. For Rwanda, custom duties on ET, based on applied tariffs, could have generated an additional revenue of \$14 million in 2020, higher than revenue estimates under other digital taxation approaches.

**Trade rules on digital products affect taxation rights through an administrative effect,** shaping the ability of countries to track and monitor tax data collection, and their implementation capacity. Intangible assets are an important driver of corporate profit shifting across entities within a multinational enterprise and with the rise of digital and data-driven business models, the risks of tax base erosion and tax evasion are even higher (Lucas-Mas and Junquera-Varela 2021). The Rwanda case study showed that the country recognises the need to tax commercialisation of user data, which is the main income generating asset of platform owners. However, digital trade rules such as free cross-border data flows undermine the ability of governments to track where data is being generated/mined, processed, and monetised, which in turn affects their ability to tax data sourced from their countries and data transactions conducted within economies. Similarly, bans on data localisation and offshoring of data make it more difficult for tax authorities to assess the value of locally generated data, and also undermine the ability of countries to leverage locally generated data for advancing development prospects.

Data storage policies can range from *data residency*, which refers to where the data is physically and geographically stored, to *data sovereignty* (as followed by Rwanda) to *data localisation* requirements for data to be stored and processed using domestic servers (as in Kenya and Nigeria). Requirements to host and process data locally, i.e., data localisation policies, not only increase the ability of tax authorities to review the data in case of any audit or requirement but also serve as a policy instrument for indirect taxation. As the South Africa study shows, the country has CRS commitments under GATS but has not signed any digital trade agreements or agreements with digital trade provisions. It can therefore leverage digital trade policy instruments, such as data localisation, which would lead to foreign firms setting up their servers within the physical boundary of the country, establishing local presence. While South Africa does not have strict data localisation policies in place, it has refused to join the JSI talks, wherein there is a push by some countries to ban forced data localisation. Jointly with India, South Africa has openly advocated for retaining its policy space in digital trade negotiations.

Further, in terms of administrative effects, policies on source code sharing in digital trade agreements need to be aligned with taxation goals. Kenya is participating in the JSI negotiations, wherein some countries like the US are seeking to prohibit governments from requiring access to source code and algorithms that may be essential to assess tax liability based on the domestic share of globally integrated activities, including using user-generated

data. The US itself preserves the ability of its government agencies to access software for enforcement purposes, including for taxation. It authorises the copying of source code of software used for accounting, tax planning, tax returns and compliance in certain circumstances for the purpose of analysis and, with a court order, removing it from the place of business for review by external experts. While the USMCA prevents mandatory disclosure of all source code and the algorithms embedded in source code, it allows regulatory bodies, including tax authorities, to require disclosure for a specific investigation, inspection, examination or enforcement. In Africa, there is also high potential for money laundering through non-financial digital tools for money transfers, such as online and mobile banking, electronic payments, cryptocurrencies and online gambling services (African Union Commission 2019). This problem can be compounded by the emergence of novel business models based on crypto-assets, underscoring the need for governments to retain policy space for accessing source codes and algorithms to check against tax evasion (Coelho, Fishman, and Ocampo 2021).

## 7.2 Limitations of the research, and future research

Much more work will need to be done in this area going forward in order to add both breadth and depth to our understandings, particularly given: (1) that there is a significant lack of definitional and conceptual clarity in this area; (2) there is significant uncertainty about the *extent* to which trade rules might constrain efforts to tax the digital economy; (3) that the manner in which definitional and conceptual disagreements are ultimately resolved will likely have a significant impact on the *extent* to which trade rules might constrain efforts to tax the digital economy; and (4) the manner in which particular tax measures that may or may not be consistent with trade rules interact with rules on *taxation* is itself a complex area with definitional challenges and potential policy trade-offs.<sup>66</sup> Until resolution on these matters is in fact reached, however, uncertainty itself will undoubtedly constrain efforts to tax the digital economy.

Moreover, cross-border trade in the digital economy has increased at a significant pace over the past decades. As has the salience of digital trade, i.e., digital trade has become more important as a function of overall trade as the rate at which digital trade has grown has outpaced the growth of 'non-digital' trade (López González, Sorescu, and Kaynak 2023). For example, in the context of services trade, DDS trade has steadily increased its share of total services trade. In the period 2005–2020, the United States saw its share of DDS imports as a function of total service imports grow steadily from around 41 per cent to 70 per cent.<sup>67</sup> Kenya, Rwanda, and South Africa exhibited the same trend, with DDS imports growing from far lower bases to around 45 per cent, 10 per cent, and 55 per cent respectively.<sup>68</sup> As such, while the revenue estimates discussed above may appear relatively low (i.e., as a percentage of total revenue collected), this has and will continue to change over time as the digital economy (and digital trade in particular) continues to grow and increase its salience. The above estimates are much more useful if viewed against this backdrop. It would serve us all well to take a long view and approach taxation of the digital economy with the future in mind. Moreover, the revenue estimates provided in this paper do not include revenue estimates for well-designed, effectively implemented DSTs. Here, too, additional research is required.

With the long view in mind, a final point to add is that the digital economy is constantly evolving, i.e., it is continuously changing in nature. This, too, will have implications for the types of taxation measures discussed in this paper. For example, in the context of

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<sup>66</sup> For example, the application of many of the tax measures discussed in this paper may give rise to issues of double taxation, issues which are currently resolved by way of a massive network of double taxation treaties.

<sup>67</sup> Data from UNCTADstat.

<sup>68</sup> Data from UNCTADstat.



discussions of the scope of the WTO moratorium, it is difficult to predict which products will be digitalised in the future. One example is the gradual rise in electronic SIM cards or e-SIM cards to replace physical SIM cards (see further R. Banga and K. Banga 2022). Another example is 3D printing, the market for which is growing rapidly. Since 2016, the 3D printing industry has grown by a compound annual growth rate of 29 per cent (Freund, Mulabdic, and Ruta 2022; Hallward-Driemeier and Nayyar 2018). This could be important in this context, for example where foreign automotive firms with operations in South Africa and large investments in 3D printing will be able to import duty-free software (e.g., computer-aided design files for auto components) to 3D print products that have traditionally been domestically manufactured and subjected to negotiated tariffs under the GATT (R. Banga 2021). As technology continues to improve, many more physical goods could feasibly be transmitted digitally. This would mean that more and more goods imported under non-agricultural market access (NAMA) tariff lines will be able to circumvent duties, threatening potential revenue collection permitted under the GATT and other rules on trade in goods (South Centre and African Trade Policy Centre 2017).

# Appendices

## Appendix 1 Revenue generation under the VAT system

	Imports of DDS via Mode 1 (online), 2017	VAT rate	Potential revenue (USD mil.) through full-scale implementation
Kenya	781.966986	0.16	125
Rwanda	65.5920172	0.18	11
South Africa	4764.59133	0.15	714

Source: Authors' own calculations based on TisMOS data and the PWC global tax summary.

## Appendix 2 Net exports in digitisable products, USD mil.

	2017	2018	2019	2020	2021
Rwanda	-24.38	-20.56	-17.93		
South Africa	-471.49	-1167.00	-1252.53	-1064.32	
Kenya	-44.96	-17.13	-51.32	-0.3830	-31.23

Source: Authors, constructed from WITS (<https://wits.worldbank.org/>) and WTO's (2016) classification of digital products (or digitisable products), which broadly covers goods such as software, videogames, printed matter, etc that are either currently being transmitted through electronic channels or hold the potential to be transmitted electronically in the future.

### Appendix 3 GATS commitments in digital relevant sectors

Sector	Kenya (GATS)	Nigeria (GATS)	Rwanda (GATS)	South Africa (GATS)	TOTAL
<b>BUSINESS SERVICES</b>					
Computer and related services					
Consultancy services related to the installation of computer hardware				X	1
Software implementation services				X	1
Data processing services				X	1
Data base services				X	1
Other				X	1
<b>COMMUNICATION SERVICES</b>					
Telecommunication services					
Voice telephone services	X	X		X	3
Packet-switched data transmission services	X			X	2
Circuit-switched data transmission services	X			X	2
Telex services	X			X	2
Telegraph services	X				1
Facsimile services	X			X	2
Private leased circuit services	X			X	2
Electronic mail	X	X		X	3
Voice mail	X	X		X	3
Online information and data base retrieval	X	X		X	3
Electronic data interchange (EDI)	X	X		X	3
Enhanced/value added facsimile services, incl. store and forward, store and retrieve	X	X		X	3
Code and protocol conversion	X	X		X	3
Online information and/or data processing (incl. transaction processing)	X			X	2
Other	X	X		X	3
Audio-visual services					
Motion picture and video tape production and distribution services	X				1
Motion picture projection service	X				1
Radio and television services					
Radio and television transmission services					
Sound recording					
Other					
<b>TOTAL</b>	<b>17</b>	<b>8</b>		<b>19</b>	

Source: WTO GATS commitments, available from [https://www.wto.org/english/tratop\\_e/serv\\_e/serv\\_commitments\\_e.htm](https://www.wto.org/english/tratop_e/serv_e/serv_commitments_e.htm)

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