# Africa's trade and Digital trade in services : Regulation matters

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## Executive summary

# I. Introduction

Digitalization is rewriting the rules of global trade. Thanks to rapid advances in telecommunications and digital technology, Services once thought of as non-tradable due to distance and market access constraints, are now crossing borders (Benz et al., 2022) (Benz et al., 2022; Bergstrand et al., 2015). Notably, global imports of digital-enabled services have almost doubled since 2013[1].

However, trade costs in services remain high mostly because of policy. Institutional barriers, such as inefficient regulatory frameworks, impose heavy costs on service providers and stifle innovation. The ad valorem equivalent cost of global regulatory barriers to cross-border services has been estimated to be more than 50% of trade values in most services sectors, with insurance services (103%) and financial services (255%) the most affected (Benz and Jaax, 2022).

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Regional Trade Agreements (RTAs) have been instrumental in tackling these behind-the-border barriers. Indeed, several RTA have enacted specific provisions which address them and became a successful vehicle for fostering services trade. CEFTA, EEA, EFTA, the EU, and NAFTA have increased services trade among members by 38% to 68%(Ceglowski, 2006). More prominently, (Egger et al., 2012) suggest that trade in services may react more sensitively to RTAs than trade in good with an RTA-induced effect on services around 220% compared to just 49% for trade in goods.

Despite growing research on the impact of reducing trade costs (through RTA, trade facilitation…etc) on global services trade, Africa remains underexplored, largely because trade in services is still at an early stage across the continent (Afiu and Ogliari, 2023). Nonetheless,there is potential for services trade to increase in Africa, provided that all countries can bridge the gap in digitalization. Internet access, mobile and broadband subscriptions have been found to significantly improve services trade across the various service sectors and within the continent (Majune et al., 2023). Notably, the African Continental Free Trade Area[2] (AfCFTA) has been found to play a mediating role in enabling ICT and Digital Technologies (DT) sectoral trade across the continent (Adams et al., 2024). Indeed, while this mediating role of AfCFTA has been found between both productive capacities, trade openness and ICT&DT trade, domestic administratives (regulatory) barriers that can undermine trade in services can persist even when countries are engage in trade agreement (Kern et al., 2021). The degree to which such barriers inhibit continental services trade has not been extensively examined for Africa.

This is even more relevant within the AfCFTA framework, where African Union (AU) member states have adopted a protocol on digital trade as part of the agreement. The protocol aims, among other objectives, to promote regulatory convergence across national frameworks governing cross-border exchanges of tradable items enabled by digital technologies. By reducing domestic regulatory barriers to cross-border digital services trade, the protocol could have a significant impact on digital services trade. Recent estimations of the World Trade organization shows that if African countries enhanced their



[1] See WTO Digitally delivered services trade dataset : https://www.wto.org/english/res_e/statis_e/gstdh_digital_services_e.htm

[2] The Agreement establishing the AfCFTA was signed in March 2018 and entered into force in May 2019. Official trading under the Agreement started on 1 January 2021 but trading effectively only started in October 2022, following the launch of the AfCFTA Secretariat's Guided Trade Initiative.

digital regulatory environment to match the best standards on the continent, trade costs in services would decrease by 25 percent ("Turning DIGITAL TRADE into a Catalyst for African Development - Recherche Google," n.d.).

Recognizing the importance of regulatory alignment, the United Nations Economic Commission for Africa (ECA) through its African Trade Policy Centre has jointly with the Organization for Economic Co-operation and Development (OECD), collected and compiled national-level data on digital services trade regulations across all the 54 African countries. This effort has led to the development of the Digital Services Trade Restrictiveness Index[3] (DSTRI), designed to measure regulatory barriers in five key areas of services trade (see Box 1).

Building on the information contained in the DSTRI, this study empirically assesses, through gravity modelling, the impact of digital trade-related regulations on African trade of services and digital services. The findings offer clear priorities for regulatory reform, identifying the most restrictive barriers that require urgent attention as AfCFTA members push forward with digital trade integration. It also provides an update and complement results previously obtained through ECA's research entitled "Digital trade regulatory environment: Opportunities for regulatory harmonization in Africa" (ECA, 2023) and focusing on only 28 African countries.

Consistent with the earlier ECA research, the results from the present study confirm that the intensity level of restrictiveness of the regulations plays a far greater role in shaping trade outcomes than just the number of restrictive regulatory measures. Both studies emphasize that addressing restrictive regulations in public procurement and domestic data protection and privacy is crucial to unlocking intra-African digital trade and should be top priorities for African policymakers. While the ECA (2023) study identified quantitative trade restrictions, telecom and competition policies as other key priority areas for reforms, findings from this new ECA study, based on all 54 countries, indicate that standards and procedures deserve greater attention. Additionally, harmonizing digital trade-related regulations in the area of cross-border data policies is found to have great potential for enhancing intra-African digital trade.

The rest of the paper is organized as follows: the next and second section provides an overview of the DSTRI, with a focus on Africa; the third section presents the methodology and data used for the analysis; the fourth section discusses the key findings; while the fifth section concludes and provides a set of policy recommendations.



[3] The index, along with additional datasets, is publicly available through the DTRI Initiative platform : (DTRI Initiative (uneca.org))

# II. Analyzing regulatory barriers to trade in digitally-enabled services

## II.1. Digital Services trade restrictiveness index in Africa : Overview



In collaboration with the OECD, ECA have been able to collect regulatory data to inform the addition of African countries to the Digital Services Trade Restrictiveness Index. The Digital STRI is designed to identifies, catalogues and quantifies regulatory barriers that affect trade in digitally enabled services (Ferencz, 2019). It provides policy makers with an evidence-based tool that helps to identify regulatory bottlenecks, design policies that foster more competitive and diversified markets for digital trade, and can be used to analyse the impact of policy reform4. In one word, the Digital STRI focuses on crosscutting impediments that affect any services traded digitally by a country.

Regulatory measure collected under the DSTRI are grouped into five policy domains or "pillars" (see annex I) that have been identified as essential for firms' digital trade in services (with a total of 25 measures across the 5 pillars). For instance, detailed information collected in each country to assess whether or not 1) access to payment settlement methods is discriminatory, 2) National payment security standards deviate from international standards and 3) there are restrictions on internet banking or insurance inform the extent to which payment system (i.e. pillar 3)5 may be limited in that country, and as compared to that of other countries in the region. Then a three step methodology consisting in scoring, weighting and aggregation is used to transform the collected regulatory measures into a composite index (Ferencz, 2019).

Scoring entails the transformation of qualitative information into quantitative data. Vu que chaque mesure est sous forme interrogative et que la response est forcement binaire (Yes or No), l'on peux lui attribué un score de un ou zero, selon que la reglementation en la matière est restrictive ou non. Si l'on se refère aux réponses collectées pour le Benin relativement au pillier 3 sur le payment system (see figure 1), restrictions are observed on internet banking and insurance while the payment settlement methods and the national payment security standards are respectively non-discriminatory and conform to international standard and then non-restrictive.

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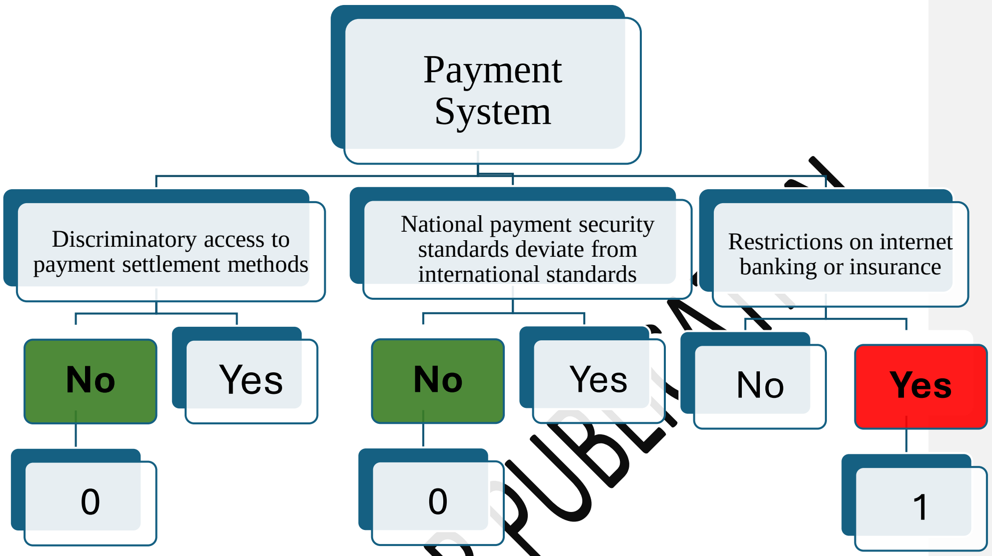
[4] See OECD DSTRI simulator for more details: https://sim.oecd.org/Default.ashx?lang=En&ds=DGSTRI

[5] See annex I for the list of measure under each pillars.

*Figure 1: Benin's scoring of measures related to Payment system*




*Source : Author's elaboration with data from https://dti.uneca.org/eca/trade-restriction*



In order to reflect the relative importance of each measures in digital transaction, each measure have been weigh according to experts who were asked to provide their assessment by allocating 100 points among the five pillars6. Aggregation is the final step that calculates the cumulative index as the weighted average of the scores. The index varies from zero to one indicating respectively full non-restrictive /restrictive environment for digital services trade in a country or for the couple country-pillars.

## II.2. How Regulated Are Digital Services in Africa? A Comparative Snapshot

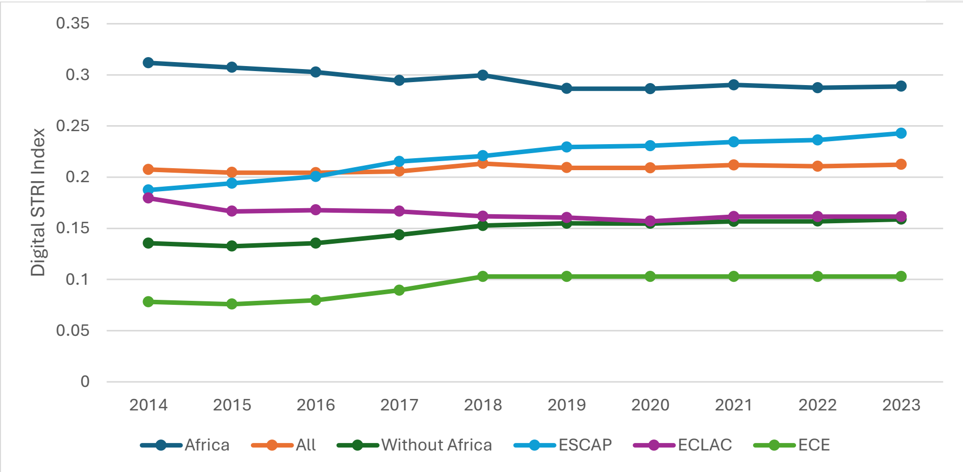
The level of regulatory restrictiveness affecting digital services remains relatively low across UN regions (all below 0.5), yet regional trajectories differ markedly (see figure 2). While regulatory restrictiveness has declined in Africa and steadily decreased in Latin America and the Caribbean (LAC), the Asia-Pacific and Europe (including the USA) exhibit a clear trend toward increased restrictions.

Despite these opposing dynamics, the regulatory gap between Africa and other regions remains significant. In 2023, for instance, regulatory restrictiveness in Africa was approximately twice as high as in LAC and three times higher than in Europe. Such differences generate compliance costs that, all else equal, could cause digital service providers to establish operations in regions with lower regulatory burdens when seeking to trade with Africa. As Rochelandet and Tai, (2016) highlight, variations in national regulatory environments significantly influence digital firms' location decisions. For example, firms may find it commercially unviable to trade digital services in regions with inadequate data

[6] See (Ferencz, 2019) for discussion on the sensitivity of the indices to the weighting scheme.

protection measures, which deter consumer engagement, or in regions where cross-border data flows and transfers are frequently restricted or even banned. Notably, alongside other rules that govern infrastructure and connectivity, these constraints have accounted for roughly half of all regulatory barriers to digital services trade in Africa over the past decade.

### *Figure 2 : Regional Trends in the Level of Digital Regulatory Restrictiveness Affecting Services Trade*




*Source : Authors based on data from* https://dtri.uneca.org/eca/trade-restriction

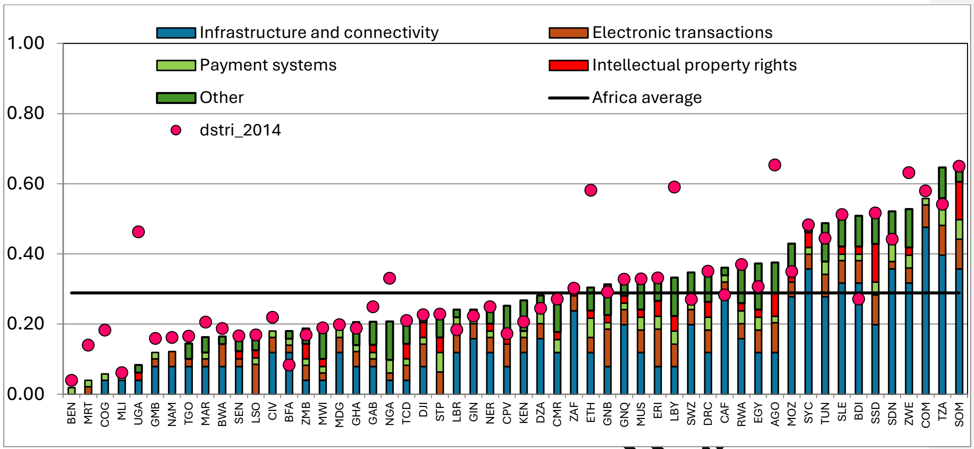


Despite the moderate compliance cost in terms of regulation, attested by African countries' average DSTRI index of 0.29 in 2023, there are some strong disparities across countries.

First, 24 countries are above this average with Somalia, Tanzania and Comores being, par ordre decroissant de classement, the top three in term of highest regulatory restrictiveness. la distance qui separe le niveau de restrictivites dans ces pays de celui de leurs equivalent On the opposite side of the spectrum que sont le Congo, la Mauritania et le Benin est significative. For instance le niveau de restrictivité en Somalie est 35 fois plus elevé que celui du Benin. La regulation en Tanzanie est 16 fois plus restrictive que celle en Mauritanie tandis que celle des comores est 9 fois plus elevé que celle du Congo.

Second and as outlined before, infrastructure and connectivity is the area that embedded most of the restrictives measures observed in African countries. For instance, its only in 12 out of the 54 African countries where others pillars are more restrictive. Among them, Benin, Lesotho, Mauritania and Sao Tomé and Principe has a fully open infrastructure and connectivity related regulatory environment for digitally enabled trade.

*Figure 3: 2023 pillars' contribution to countries' Digital STRI indexes*




*Source : ECA&OECD based on data from https://dtri.uneca.org/eca/trade-restriction*

# III. Annexes

## III.1. List of DSTRI pillars and measures

*Table 1 : DSTRI's Pillars description*

| Pillars | Embedded measures | purposes |
|---|---|---|

| | | |
|---|---|---|
| **I : Infrastructure and connectivity** | Interconnection is mandated | The measure refers to obligations for telecommunications services providers to respond favorably to reasonable requests for interconnection, including from foreign firms, at any technically feasible point in the network. |
| | Interconnection prices and conditions are regulated | Regulated interconnection pricing depends on whether it is one-way or two-way, with cost-based or bill-and-keep approaches. When required by regulators, dominant firms must offer equivalent conditions and service quality to competitors as they do for their own operations. |
| | Interconnection reference offers are made public | This measure relates to transparency requirements and covers regulatory requirements that the dominant supplier makes public specified information |
| | Vertical separation is required | This measure captures the form of vertical separation which is required in a country (accounting, functional or legal) |
| | Restrictions on the use of communication services | This measure records restrictions or blockings on the use of communication services |
| | Cross-border data flows | This set of measures captures regulations governing the cross-border transfer of personal and non-personal data. |
| **II: Electronic transactions** | Discriminatory conditions for licenses to engage in e-commerce | When licenses are required to engage in e-commerce, this measure captures whether discriminatory conditions apply for foreign services suppliers in obtaining such licenses. |
| | Online tax registration and declaration is available to non-resident foreign providers | This measure refers to the availability of online tax registration and declaration for foreign nationals residing outside of the host country. |
| | National contract rule for cross-border transaction deviate from internationally standardised rules | This measure look at if the country removes obstacles related to the use of electronic communications in international contracts and establishes equivalence between electronic and written agreements. |
| | Laws or regulations explicitly protect confidential information. | This measure examines whether a country grants natural or legal persons the ability to protect their trade secrets and know-how from unauthorized disclosure |
| | Laws or regulations provide electronic signature with the equivalent legal validity as hand-written signature. | This measure captures whether domestic laws and regulations recognize electronic signatures and give it the equivalent legal validity as hand-written signature. |
| | Dispute settlement mechanisms exist to resolve conflicts arising from cross-border digital trade. | This measure captures the existence of fair dispute resolution mechanisms for consumers and businesses, including procedures for domain name registration disputes. |
| **III: Payment systems** | Discriminatory access to payment settlement methods | The measure covers firms' access to electronic payment methods including debit card, credit card, internet banking and e-wallet services. |
| | National payment security standards deviate from international standards | This measure captures whether national standards for payment security are based on international standards. |

| | | |
|---|---|---|
| | Restrictions on internet banking or insurance. | This measure captures restrictions affecting the use of electronic payment and credit services. |
| **IV : Intellectual property rights** | Foreign firms are discriminated against on trademark protection. | This measure captures whether foreign firms have access to national trademark registration and protection on a non-discriminatory basis. |
| | Discriminatory treatment for the protection of copyrights and related rights | This measure covers whether foreign right holders are accorded national treatment with regard to the protection of copyrights and related rights provided in international treaties |
| | Intellectual property rights are enforced | This measure captures the extent to which a country has put in place administrative or judicial procedures to enforce IP rights, particularly copyrights and trademarks. |
| **V : Other barriers affecting trade in digitally enabled services** | Performance requirements affecting cross-border digital trade | Digital trade performance requirements may mandate local software, encryption, country-specific authentication, or technology transfer, including source code disclosure. |
| | Limitations on downloading and streaming affecting cross-border trade | The measure covers any limitations affecting downloading and streaming put in place by governments. |
| | Restrictions on online advertising | Any restrictions on online advertising other than requirements that advertising should not be misleading are recorded. |
| | Commercial presence is required in order to provide cross-border services | This measure covers restrictions for cross-border provision of services (Mode 1) when services can only be supplied if there is a commercial presence in the host country. |
| | Local presence is required in order to provide cross-border services | This measure tracks cases where there is nocommercial presence requirements and regulations mandating local agents for cross-border transactions |
| | Firms have redress when business practices restrict competition in a given market | This measure relates to the extent and channels through which firms can have redress when business practices e.g. by firms with a strong market position restrict competition. |
| | Other restrictions on digitally enabled services | This measure captures any other cross-cutting limitations affecting trade in digitally enabled services not captured by the other measures. |

*Source : OECD Digital STRI Guidelines*