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The OECD Digital Services Trade Restrictiveness Index

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OECD

OECD TRADE AND AGRICULTURE DIRECTORATE

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THE OECD DIGITAL SERVICES TRADE RESTRICTIVENESS INDEX

Janos Ferencz, OECD

The rapid acceleration of digital transformation has had profound implications for services trade but the benefits of digitalisation risk being derailed by existing and emerging trade barriers. The OECD Digital Services Trade Restrictiveness Index (Digital STRI) is a new tool that identifies, catalogues, and quantifies cross-cutting barriers that affect services traded digitally. It consists of two components, the regulatory database and indices, which bring together comparable information from 44 countries. The Digital STRI shows a diverse and complex global regulatory environment affecting trade in digitally enabled services. Moreover, over the past years, the indices show an increasingly tightening regulatory environment highlighting that further international cooperation and dialogue is needed to maximise the benefits of digitalisation.

Key words: Digital transformation, digital trade, digitally enabled services, services trade restrictions, regulation

JEL Codes: F130, F140, F680

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Executive Summary

The rapid acceleration of digital transformation has had profound implications for services trade, enabling the easier tradability of traditional services across borders as well as the emergence of new services that create value from data. However, the benefits of digitalisation risk being derailed by existing and emerging trade barriers that may hold back innovation and create obstacles to the movement of digitally enabled services across borders.

This paper presents the OECD Digital Services Trade Restrictiveness Index (Digital STRI), a new tool that identifies, catalogues and quantifies barriers that affect trade in digitally enabled services across 44 countries. Building on the methodology of the OECD Services Trade Restrictiveness Index (STRI), it aims to establish a tool that helps policy makers identify regulatory bottlenecks and design policies that foster more diversified and competitive markets for digital trade.

The Digital STRI builds on and complements the existing STRI. It captures cross-cutting impediments that affect all types of services traded digitally. The indices show a diverse and complex regulatory environment for digital trade across countries. The results highlight that challenges remain on access to communications infrastructure and movement of information across networks. Additional challenges relate to measures that affect all types of electronic transactions such as different standards on electronic contracts and payments. Other impediments such as the obligation to establish a local presence before engaging in digital trade are common across the board as well.

The Digital STRI shows an increasingly tightening regulatory environment for digital trade in recent years. Compared to 2014, the first data point in the STRI, ten countries have higher index values in 2018. Tightening policy changes are diverse in nature, but tend to concentrate around measures related to infrastructure and connectivity.

1. Introduction

Digitalisation started a long time ago. The history of electronic computers and computer software dates back to the 1950s; the first inter-networking communications protocols were developed in the 1970s; and the first commercial Internet service providers emerged in the mid-1990s (Moschovitis et al., 1999). In recent years, however, this process accelerated rapidly with vastly improving network infrastructure and connectivity, hardware and software that increasingly enable services to become more tradable globally.

This rapid transformation presents new opportunities for economic growth and improving welfare. Yet, the benefits of digitalisation may be hindered by existing and emerging trade barriers that may hold back innovation and create obstacles to the movement of digitally enabled services[1] across borders. At the same time, little is known about the nature and extent of impediments that affect trade conducted through digital means.

This paper aims to fill some of that gap by developing an indicator that identifies, catalogues and quantifies regulatory barriers that affect trade in digitally enabled services. 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 analyse the impact of policy reforms.

The new tool builds on the OECD Services Trade Restrictiveness Index which already identifies measures affecting 22 services sectors,[2] including some that are in the front line of the digital transformation such as computer, audio-visual, distribution, finance and telecommunication services. By adopting a holistic approach, the new indicator – the OECD Digital Services Trade Restrictiveness Index (Digital STRI) – focuses on cross-cutting impediments that affect any services traded digitally.

The paper is structured in the following way: Section 2 presents some background on how digitally enabled services are traded across borders. Section 3 presents the framework of measures for the Digital STRI while Section 4 presents the methodology used to develop the indices. The indices are presented in Section 5, and their sensitivity to the weighting system is assessed in Section 6. The last section presents concluding remarks.

[1] For the purposes of this paper, the term "digitally enabled services" denotes services that can be supplied via electronic networks.

[2] Computer services, construction services, professional services (accounting and auditing, architecture, engineering and legal services), telecommunications services, distribution services, transport services (air, maritime, rail and road transport), postal and courier services, financial services (commercial banking and insurance), audio-visual services (broadcasting, sound recording and motion pictures), logistics services (cargo-handling, warehousing, freight forwarding, and customs brokerage).

2. How is digitalisation changing trade?

The rise of services in international cross-border trade is closely linked to rapid technological developments (Freund and Weinhold, 2002; 2004; López-González and Ferencz, 2018; OECD, 2018). Services that traditionally required close proximity to customers can now be traded at a distance, allowing firms to reach global markets at lower costs.

On the one hand, information and communication technology services form the backbone of digitally enabled trade by providing the necessary network infrastructure and underpinning the digitisation of other types of services. Once services activities can be digitised, they can be transferred across electronic networks internationally. On the other hand, innovative technologies have fostered the rise of new digitally enabled services that build on data-driven solutions such as big data analytics or cloud computing (OECD, 2017a).

Disruptive innovation can be driven by smaller players in the market particularly small and medium sized enterprises (SMEs) that use new technologies to provide innovative or more efficient services, pursue niche strategies or customise services to clients' needs (Zimmermann, 2012).

Digitalisation has created new opportunities for these smaller players. However, services regulations remain fragmented by borders, and regulatory frictions create trade costs for services providers, particularly for SMEs. Recent empirical analysis shows that average services trade restrictions represent up to 14% additional tariff on small firms' exports compared to large firms that can absorb trade costs more easily (OECD, 2017b).

With the growing digitisation of information, increasing computer processing power and broader penetration of high-speed Internet connections, the ability of firms to collect, transfer and process data has increased significantly. The movement of information across borders has become an essential component both as inputs to production of goods and services (e.g. organising and processing resources, customising goods and services, communication, etc.) and a key ingredient for new types of data intensive services such as data analytics or virtual reality-based services (Box 1). At the same time, the fast pace of data gathering and ease of transferability has underscored the need to adopt legitimate measures to protect privacy and personal data.

Trade in digitally enabled services is affected by a complex system of rules and regulations, both international and domestic. International trade rules are anchored in World Trade Organization (WTO) rules and agreements that cover digital trade issues as well as regional trade agreements that are increasingly covering a broader range of digital measures (López González and Ferencz, 2018).

Digital transformation raises new challenges for trade, and understanding the complexities of transactions requires a closer examination of what factors enable digital trade, and how different actors are brought together in the digital environment (López González and Jouanjean, 2017; OECD, 2018).

Engaging in digitally enabled services trade is also increasingly intertwined with and embedded in trade in goods. Hence, the ability to engage in digitally enabled services trade is also affected by market access for ICT goods. Similarly, engaging in trade in goods is increasingly dependent on digital services that support goods transactions (e.g. digital payments). These implications of the digital transformation underline the importance of adopting a more holistic approach to policies as well as more international cooperation.

Box 1. Services trade in a virtual world

Virtual or augmented reality: What is the difference?

In its simplest form, virtual reality (VR) is a computer generated 3D environment that allows users to explore and interact with objects in a seemingly realistic environment using specialised equipment such as helmets, gloves or other control devices.

Augmented reality (AR) relies on technology that allows users to view real-time surroundings altered or enhanced by computer generated information. Through specialised AR devices, users see the computer generated information superimposed on the objects around them.

Implications for services

VR and AR technologies give a new dimension to services trade. While most common usage includes video-games and exploring far-away geographical places (e.g. the bottom of the Mariana Trench), there is growing usage of these technologies in other industries as well. A few examples include:

- *Architecture and engineering*: VR and AR allow architects and designers to present virtual prototypes and interactive visualisation tour of buildings before they are actually built. Virtual 3D modelling is used also by engineers to better understand details of prototype products, and to detect and rectify flaws in early phases of the production.
- *Retail*: VR technologies in retail allow businesses to develop virtual shops that customers can visit from anywhere, give customers an overview of products (e.g. through a virtual hot air balloon ride) or allow them to examine products close-up from all angles before buying them at a virtual cashier.
- *Films*: Through a 360° immersive VR experience, viewers become part of the movie they watch.
- *Travel*: VR experiences help travellers decide on holiday destinations, explore hotels and "teleport" to unique locations.
- *Education*: VR and AR are used to enhance students' learning experience through interactive and enhanced educational or training programs.

Source: Jung and tom Dieck (2018).

3. Establishing the framework

Composition of the framework

The Digital STRI captures cross-cutting barriers that inhibit or completely prohibit firms' ability to supply services using electronic networks, irrespective of the sector in which they operate.

The framework for the Digital STRI includes measures derived from the existing STRI database. New measures have been included to the extent that these have been identified as relevant emerging barriers by experts participating at the meeting organised to support this project in 2017 and subsequent discussions at the OECD Working Party of the Trade Committee (WPTC). Some emerging issues, while relevant in the long term, might be premature to include in the framework at this stage as different views exist about their market implications. This includes, for instance, non-discriminatory Internet traffic management (Greenstein et al., 2016). Therefore, at this stage, the Digital STRI only collects information on these issues which could facilitate policy makers' discussions.

Annex A presents the list of measures for the Digital STRI noting also the measures that are new and those that have been included but do not contribute to the index values (labelled as memos).

The Digital STRI framework is categorised in the following areas:

- ***Infrastructure and connectivity***. This area covers measures related to communication infrastructures essential to engaging in digital trade. It maps the extent to which best practice regulations on interconnections among network operators are applied to ensure seamless communication. It also captures measures limiting or blocking the use of communications services, including Virtual Private Networks or leased lines. Lastly, this area covers policies that affect connectivity such as measures on cross-border data flows and data localisation.
- ***Electronic transactions***. This area covers issues such as discriminatory conditions for issuing licenses for e-commerce activities, the possibility for online tax registration and declaration for non-resident firms, deviation from internationally accepted rules on electronic contracts, measures inhibiting the use of electronic authentication (such as electronic signature), and the lack of effective dispute settlement mechanisms.
- ***Payment systems***. This area captures measures that affect payments made through electronic means. It includes measures related to access to certain payment methods and assesses whether domestic security standards for payment transactions are adopted in line with international standards. Lastly, it also covers restrictions related to Internet banking not covered in other areas.
- ***Intellectual property rights***. This area covers domestic policies related to copyrights and trademarks that do not afford foreigners equal treatment with regard to IP protection. It also maps the existence of appropriate enforcement mechanisms to address infringements related to copyrights and trademarks, including those occurring online.
- ***Other barriers affecting trade in digitally enabled services***. This area covers various other barriers to digital trade, including performance requirements affecting cross-border digital trade (e.g. mandatory use of local software and encryption or mandatory technology transfers); limitations on downloading and streaming; restrictions on online advertising; commercial or local presence requirements; and lack of effective redress mechanisms against anti-competitive practices online, among others.

The framework of the Digital STRI has been developed to include specific and detailed information but it should not be so detailed that the importance of key impediments is obscured by minor ones. Therefore, the framework is not meant to be an exhaustive catalogue of barriers that affect digitally enabled services but rather a tool that enables policy makers to focus on the most important restrictions.

Trade restrictive and trade facilitating measures in the Digital STRI

To reap the full benefits of trade openness and regulatory reforms, policy makers need to identify regulatory bottlenecks and assess the trade-facilitating or trade-restricting impact of policies in place. There are several dimensions through which regulations can depress trade including by being restrictive, inconsistent or unpredictable. Conversely, transparent regulations, effective judicial processes and adherence to international standards foster trade, reduce operating costs and promote certainty.

The STRI covers trade restrictive measures and certain trade facilitating measures where the absence of regulation can also lead to trade distortions. Trade facilitating measures covered in the Digital STRI include the implementation of international standards on electronic contracts, recognition of electronic authentication methods or the possibility to register and declare taxes online. Such measures, if in place, tend to promote trade, while their absence is considered a barrier.

The Digital STRI's primary objective is to identify trade restrictions, and its coverage of measures is contingent on there being a recognized benchmark in international trade law and practice against which domestic regulations can be compared. This tends to be more difficult to identify for trade facilitating measures, and it might be worth further research in the future.

4. Methodology for developing the Digital STRI

The regulatory data underpinning the Digital STRI have been retrieved from the existing STRI database. For the new measures, data have been collected from publicly available laws and regulations.

The Digital STRIs are the result of aggregating the identified trade impediments into composite indices. Three key steps contribute to their construction: scoring, weighting and aggregation. Scoring entails the transformation of qualitative information into quantitative data. Weighting helps to balance the relative importance of the measures. Aggregation is the final step that calculates the cumulative index as the weighted average of the scores.

Scoring

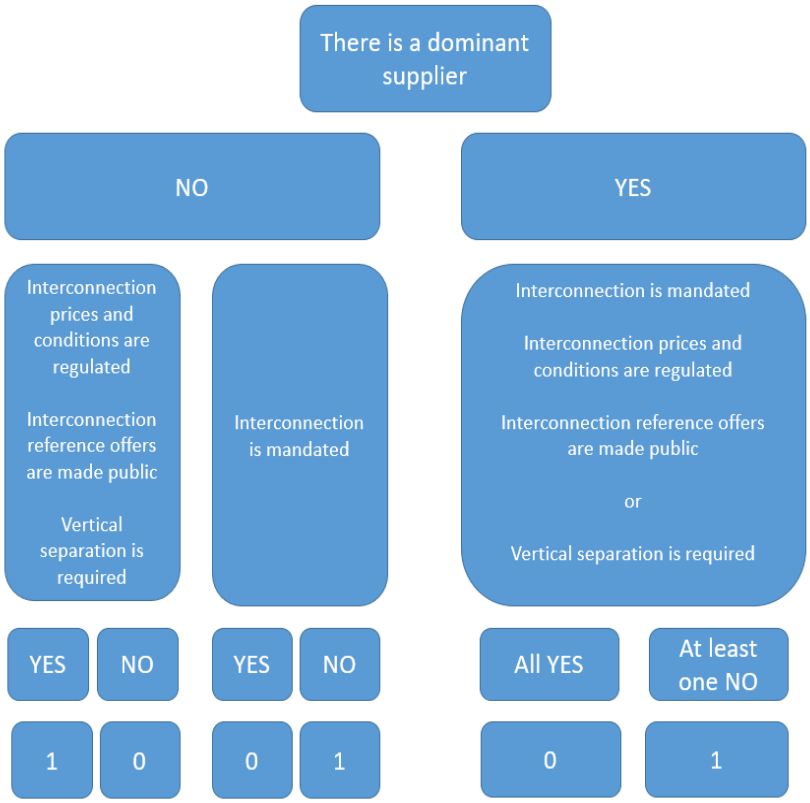
In line with the STRI methodology, the scoring for the Digital STRI uses a binary system. The measures are designed in a way that simple "Yes" or "No" responses can be used to answer them. The answers are then assigned with a value of 0 in case of absence of trade restrictions and a value of 1 when restrictions are in place.

The scoring also takes into account specific regulatory and market characteristics as well as linkages and hierarchies between measures.

For instance, the scoring for the measures related to interconnection apply the scoring defined for these measures in the STRI framework for telecommunications services (Nordås et al., 2014; Geloso Grosso et al., 2015). Figure 1 illustrates this scoring. The need for regulation depends on whether there is one or more suppliers with significant market power (SMP), and thus the scoring is conditioned on the presence or absence of an SMP.

In the absence of an SMP, *ex ante* regulation is not necessary as the general competition rules are deemed sufficient. Hence, the STRI measures are scored 1 if *ex ante* regulations on interconnection are not rolled back. At the same time, the obligation on incumbent providers to allow and negotiate interconnection in good faith upon request should be in place irrespective of whether there is a dominant supplier or not.

Figure 1. The scoring of measures related to interconnection



Source: Geloso Grosso et al. (2015).

Conversely, asymmetric ex ante regulations are considered best practice in the presence of an SMP. The STRI methodology bundles the mandating of interconnection and the conditions imposed on the SMP, and scores them together as indicated in Figure 1.

The Digital STRI scoring also takes into account logical connections and linkages between various measures. For instance, it accounts for regulations that provide for different alternative mechanisms for transferring personal data across borders. This may include regulations that make transfer possible to countries with substantially similar privacy protection laws or, in the absence of this, allow companies to transfer personal data under appropriate safeguards (e.g. binding corporate rules or standard data protection clauses).

Moreover, regulations that impose complete prohibition on cross-border data transfers are rare but possible. When in place, such measures render other measures redundant since transfer abroad is completely prohibited. Figure 2 depicts the scoring mechanism applied when such prohibitions are in place.

Figure 2. The scoring scheme for complete prohibitions on cross-border data flows

Source: Author's elaboration.

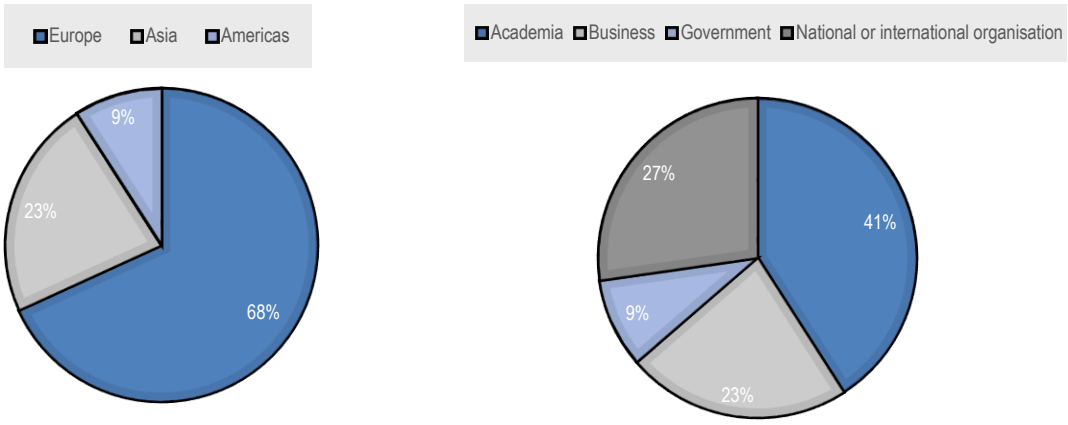
Weighting and aggregating

Developing the indices also requires assigning weights to the measures to reflect their relative importance in digital trade transactions. In accordance with the weighting technique used in the STRI methodology, the weighting scheme used for the calculation of the Digital STRI relies on expert judgment (Geloso Grosso et al., 2015).

Under this scheme, experts are asked to allocate 100 points among the five policy areas presented above. A survey was used to collect experts' inputs on the weights (Annex B). The survey was circulated to the participants of the expert group meeting (organised in February 2017), the delegations of countries covered by the OECD STRI, and other participants of the OECD Working Party of the Trade Committee. The profile of respondents is presented in Figure 3.

The survey responses were then translated into weights by assigning the weight of the policy area to each measure that falls under it and correcting for differences in the number of measures under the policy area. The sensitivity of the indices to the weighting scheme has been tested by experimenting with 3 000 simulations using random weights (Section 6).

Figure 3. Country coverage and activity areas of experts

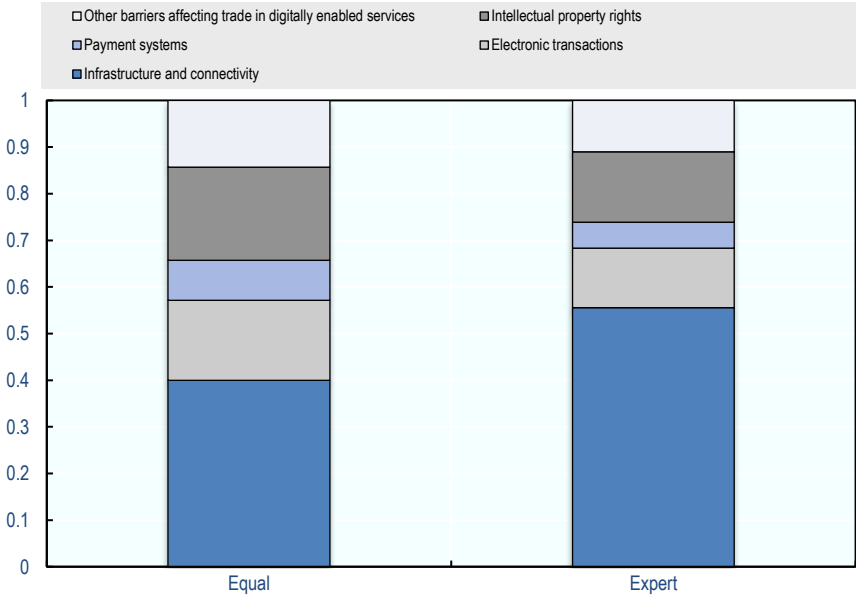


Source: Digital STRI expert survey.

Figure 4 presents how the expert judgment weights differ from equal weights in the Digital STRI. This figure depicts the index in a hypothetical case where all measures in the framework take the most restrictive value.

Figure 4. The composition of the Digital STRI if all measures take the value of one

Comparison between equal weights and expert weights.
The equal weights apply to the measures rather than policy areas



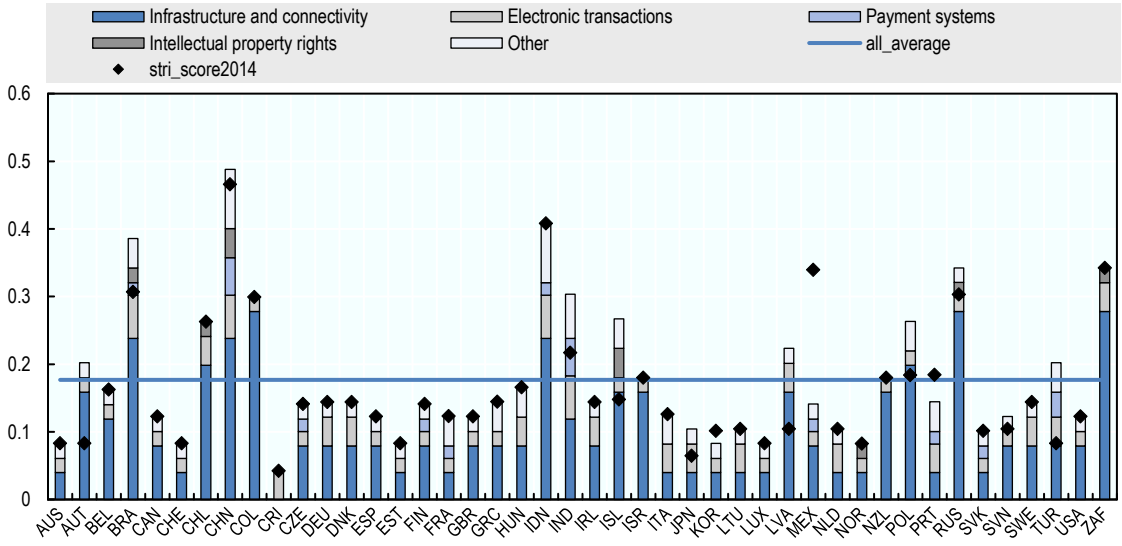
Source: Author's elaboration.

Under the expert weights scheme, measures related to *Infrastructure and connectivity* contribute more than under the equal weights scheme (55%), which reflects the fundamental role of high quality infrastructures and seamless connectivity to facilitate digital transactions. The weights for the other areas are lower but proportionate to those under the equal weights scheme.

5. The indices

This section presents the Digital STRIs for 2018 broken down into the five policy areas defined earlier (Figure 5). Annex C lists the index values by policy areas. The indices range between 0.04 and 0.48 with an average of 0.18. There are 29 countries below and 15 countries above the average.

Figure 5. Digital STRIs (2018)



Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
Source: OECD Digital STRI.

The results are driven by measures affecting infrastructure and connectivity. This is due to the lack of efficient regulation on interconnection as well as burdensome conditions on cross-border data flows beyond those imposed to ensure the protection and security of personal data. In 11 countries, certain types of data (such as financial or business data) must be stored locally but transfer of copies abroad is permitted as long as authorities can have direct access to the data upon request.

Specific licenses or authorisations for e-commerce activities in addition to ordinary business licenses are required in six countries and in four of them discriminatory conditions apply for foreign entities seeking to obtain such licenses. Implementing international standards for electronic contracts remains a challenge across the board, although key electronic authentication measures such as recognition of electronic signatures are generally in place. Online tax registration and declaration are also not possible in one third of the countries.

The policy areas on intellectual property rights and payment systems make up a smaller share of the scores presented. On the former, main contributors include regulations that fail to provide treatment to foreigners that is no less favourable than that accorded to nationals with regard to the protection of intellectual property. Payment related impediments cover discriminatory access or complete ban for foreign providers of certain payment solutions

as well as the lack of application of international security standards for common payment methods such as credit cards.

Other barriers affecting trade in digitally enabled services include local presence requirements to carry out digital trade, often in the form of obligations to establish local representative offices. In addition, limitations on downloading and streaming of legal content affect the indices of 11 countries. Common limitations include overbroad regulatory discretions for government authorities to block access to lawful websites and impose limitations on legal online content. Moreover, while online advertising generally remains subject to horizontal regulations on advertising activities, new regulatory measures started to emerge, including the imposition of discriminatory taxes on the purchase of advertising services from foreign companies.

Based on the existing stock of STRI data, and by noting the date of entry into force of new measures compiled during this exercise, the Digital STRI has been assembled retroactively for the years 2014 to 2018. Figure 5 shows the development of the global regulatory environment governing digital trade in recent years by depicting the index values for 2014 (pink diamond). Overall, the indices show an increasingly tightening regulatory environment for digital trade. Compared to 2014, the first data point in the STRI, ten countries have higher index values in 2018, and only three countries have lower values. The average rate of increase in the index among the ten countries is 32% between 2014 and 2018, with the highest being 50% over the same period.

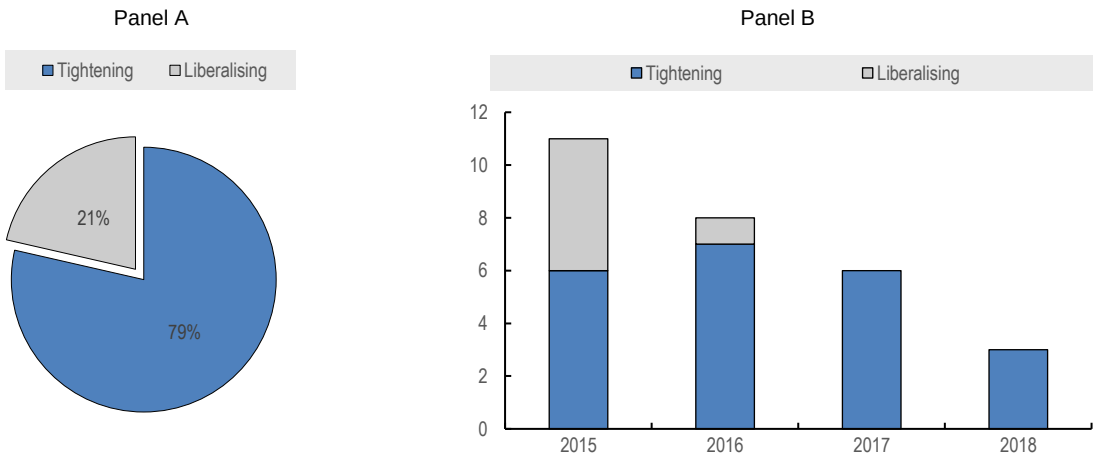
Indeed, in this period, close to 80% of the changes captured in the Digital STRI were trade restrictive (Figure 6, Panel A). Spread across the years, the number of restrictive policy changes has been constant whereas the extent of liberalisation has gradually decreased (Figure 6, Panel B).

Tightening policy changes are diverse in nature but tend to concentrate around measures related to infrastructure and connectivity.

Figure 6. Policy changes affecting trade in digitally enabled services (2014-2018)

Panel A: Nature of changes over the period 2014-2018

Panel B: Number of changes across years



Source: OECD Digital STRI.

6. Sensitivity analysis

This section analyses the sensitivity of the Digital STRI results to the weighting scheme applied. As described above, the weighting scheme relies on a broad range of experts' assessment of the relative importance of policy areas in restricting trade in digitally enabled services. The sensitivity analysis is a useful test to assess how sensitive the results are to this weighting scheme. The analysis is based on 3 000 simulations in which the computer program selects weights at random (Monte Carlo simulations).

Figure 7 below shows the overall indices when equal weights are used and Figure 8 presents the results using random weights.

Figure 7. Digital STRIs using equal weights

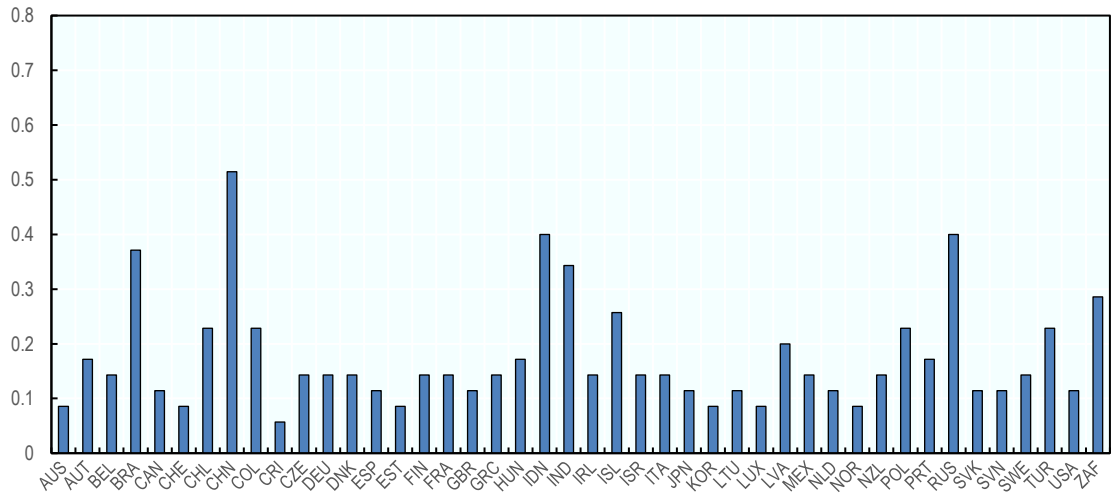
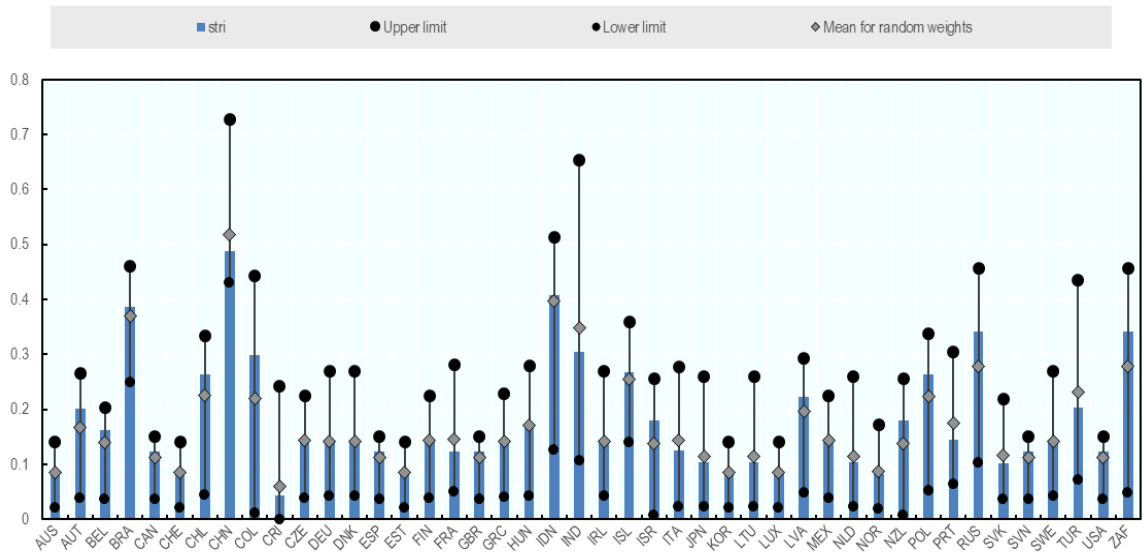


Figure 8. Digital STRIs using random weights



For most countries, the Digital STRIs are very similar irrespective of whether expert judgment or equal weights are used. The Spearman rank correlation between expert judgment and equal weights is 0.97. Seventeen countries have the same rankings or change only one position in their ranking under both weighting systems. While the rankings of some countries slightly change, these are mostly due to slight differences in the expert weights given to *Infrastructure and connectivity* related measures.

With respect to the random weights, Figure 8 shows the Digital STRIs including the mean for all simulations and the lowest and highest simulation result from all simulations conducted. The mean of the random weights aligns very closely with the Digital STRIs. Moreover, the weights matter more for the results in countries where restrictions concentrate in a few policy areas. When restrictions are spread out more evenly across the five areas, the differences between the lowest and highest simulation results are narrower.

7. Conclusions

As digital transformation continues to have a significant impact on the way services are traded, there is a growing need for an accurate and up to date evidence base to better understand the policy implications of digitalisation.

This paper contributes to filling some of the evidence gap by building on the rich regulatory information available in the STRI database to develop an OECD Digital Services Trade Restrictiveness Index (Digital STRI) that maps and measures the regulatory environment governing trade in digitally enabled services.

The Digital STRI aims to add a new function to the existing STRI suite of tools to help policy makers maximise the benefits of digital transformation by identifying and removing regulatory bottlenecks and developing reform options that create more diverse and competitive markets for digital trade.

Similarly to the other STRI components, the Digital STRI will be updated annually to facilitate continuous insights into the evolution of regulations over time.

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Annex A. List of measures

Measure	New
Infrastructure and connectivity	
Interconnection is mandated	
Interconnection prices and conditions are regulated	
Interconnection reference offers are made public	
Vertical separation is required	
Memo: Non-discriminatory Internet traffic management is mandated*	X
Memo: There is at least one dominant firm in the market segment considered**	
Restrictions on the use of communication services	X
Memo: Free cross-border transfer of personal data or application of the accountability principle*	
Cross-border transfer of personal data is possible when certain private sector safeguards are in place	
Cross-border data flows: cross-border transfer of personal data is possible to countries with substantially similar privacy protection laws	
Cross-border data flows: cross-border transfer is subject to approval on a case-by-case basis	
Cross-border data flows: certain data must be stored locally	X
Cross-border data flows: transfer of data is prohibited	
Electronic transactions	
Discriminatory conditions for licenses to engage in e-commerce	X
Memo: License or authorisation is required to engage in e-commerce**	X
Online tax registration and declaration is available to non-resident foreign providers	
National contract rule for cross-border transaction deviate from internationally standardised rules	
Laws or regulations explicitly protect confidential information	
Laws or regulations provide electronic signature with the equivalent legal validity with hand-written signature	
Dispute settlement mechanism exists to resolve disputes arising from cross-border digital trade	X
Payment systems	
Discriminatory access to payment settlement methods	
National payment security standards deviate from international standards	X
Restrictions on internet banking or insurance	
Intellectual property rights	
Foreign firms are discriminated against on trademark protection	
Discriminatory treatment of foreigners for the protection of copyrights and related rights	
Memo: Exceptions to copyright protection are limited in accord with international rules*	
Enforcement of intellectual property rights: Judicial or administrative enforcement measures and remedies are available	
Enforcement of intellectual property rights: Provisional measures are available	
Enforcement of intellectual property rights: Criminal enforcement proceedings and penalties are available	
Other barriers affecting trade in digitally enabled services	
Performance requirements affecting cross-border digital trade	
Limitations on downloading and streaming affecting cross-border digital trade	
Restrictions on online advertising	
Commercial presence is required in order to provide cross-border services	
Local presence is required in order to provide cross-border services	X
Firms have redress when business practices restrict competition in a given market	
Other restrictions on digitally enabled services	

* For these measures, data is collected only for information purposes and these do not contribute to the calculation of indices.

** These memos are not scored but affect the scoring of other measures.

Annex B. Expert weighting survey

The OECD Digital Services Trade Restrictiveness Index

Digitalisation has enabled services to become more tradable across borders creating new opportunities for firms of all sizes. However, digitally enabled trade in services may be hindered by trade barriers that create obstacles for firms operating in the digital realm.

The OECD is currently developing a new instrument to help identify and catalogue barriers that affect trade in digitally enabled services. Using the methodology of the OECD Services Trade Restrictiveness Index (STRI), the new tool aims to identify regulatory barriers that cut across all services traded over electronic networks, and develop composite indices based on the collected regulatory information.

This instrument – the OECD Digital Services Trade Restrictiveness Index – builds upon and complements information collected in the OECD STRI in relevant services sectors (see http://oe.cd/stri).

In line with the OECD STRI methodology for developing composite indices, policy measures are assigned weights to reflect their relative importance in limiting trade in a given sector. The purpose of this questionnaire is to seek guidance from experts in the field of digital trade for determining the appropriate weights for the measures included in the Digital STRI.

The survey has two questions and it will take approximately 3-5 minutes to complete it.

Responses will be kept confidential in accordance with OECD standards.

Respondent details:

Area of activity:

Country activity:

Q1: Allocation of weights

The framework of measures for the Digital STRI is categorised in five main areas:

1. ***Infrastructure and connectivity***. This area covers measures related to communication infrastructures essential to engage in digital trade. It maps the extent to which best practice regulations on interconnections among network operators are applied to ensure seamless communication. It also captures measures limiting or blocking the use of communications services, including Virtual Private Networks or leased lines. Lastly, this area covers also policies that affect connectivity such as measures on cross-border data flows and data localisation.

2. ***Electronic transactions***. This area covers issues such as discriminatory conditions for issuing licenses for e-commerce activities, the possibility for online tax registration and declaration for non-resident firms, deviation from internationally accepted rules on electronic contracts, measures inhibiting the use of electronic authentication (such as electronic signature), and the lack of effective dispute settlement mechanisms

3. ***Payment systems***. This area captures barriers related to access to certain payment methods and assesses whether domestic security standards for payment transactions are adopted in line with international standards. Lastly, it also covers restrictions related to Internet banking that are not covered by other measures

4. ***Intellectual property rights***. This area covers domestic policies related to copyrights and trademarks. It also maps the existence of appropriate enforcement mechanisms to address IPR infringements, including those occurring online.

5. ***Other barriers affecting digitally enabled services***. This area covers various other barriers to digital trade, including performance requirements affecting cross-border digital trade (e.g. mandatory technology transfer or the requirement to disclose source codes); limitations on downloading and streaming; restrictions on online advertising; commercial or local presence requirements; or lack of effective redress mechanisms against anti-competitive practices online, among others.

Please allocate a total of 100 points across the five areas in a manner that reflects each area's relative importance in limiting digital trade overall. For instance, if the measures under policy area X are the most important in your opinion, that area would be allocated the highest number of points.

The aggregate of all points allocated to the five areas should add up to 100, and policy areas should not receive the same number of points. Please keep in mind that the relative importance of measures should reflect how strongly they would deter trade if in place, not how frequently they are found.

[box for allocation of weights]

Q2: Further comments or suggestions, if any: [comment box with multiple lines]

Annex C. Digital STRI values by policy area

Table A C.1. Index value by policy area

Country	Infrastructure and connectivity	Electronic transactions	Payment systems	Intellectual property rights	Other barriers affecting trade in digitally enabled services	Overall index
AUS	0.03969935	0.021250427	0	0	0.021967886	0.08291766
AUT	0.158797398	0.021250427	0	0	0.021967886	0.202015713
BEL	0.119098049	0.021250427	0	0	0.021967886	0.162316367
BRA	0.238196097	0.06375128	0.01841476	0.021660402	0.043935772	0.385958314
CAN	0.079398699	0.021250427	0	0	0.021967886	0.122617014
CHE	0.03969935	0.021250427	0	0	0.021967886	0.08291766
CHL	0.198496748	0.042500854	0	0.021660402	0	0.262658
CHN	0.238196097	0.06375128	0.05524428	0.043320805	0.087256577	0.487769037
COL	0.277895447	0.021250427	0	0	0	0.299145877
CRI	0	0.042500854	0	0	0	0.042500854
CZE	0.079398699	0.021250427	0.01841476	0	0.021967886	0.141031772
DEU	0.079398699	0.042500854	0	0	0.021967886	0.143867433
DNK	0.079398699	0.042500854	0	0	0.021967886	0.143867433
ESP	0.079398699	0.021250427	0	0	0.021967886	0.122617014
EST	0.03969935	0.021250427	0	0	0.021967886	0.08291766
FIN	0.079398699	0.021250427	0.01841476	0	0.021967886	0.141031772
FRA	0.03969935	0.021250427	0.01841476	0	0.043628288	0.122992828
GBR	0.079398699	0.021250427	0	0	0.021967886	0.122617014
GRC	0.079398699	0.021250427	0	0	0.043628288	0.144277409
HUN	0.079398699	0.042500854	0	0	0.043628288	0.165527835
IDN	0.238196097	0.06375128	0.01841476	0	0.08756406	0.407926202
IND	0.119098049	0.06375128	0.05524428	0	0.065596174	0.303689778
IRL	0.079398699	0.042500854	0	0	0.021967886	0.143867433
ISL	0.158797398	0.021250427	0	0.043320805	0.043628288	0.26699692
ISR	0.158797398	0.021250427	0	0	0	0.180047825
ITA	0.03969935	0.042500854	0	0	0.043628288	0.12582849
JPN	0.03969935	0.042500854	0	0	0.021967886	0.104168087
KOR	0.03969935	0.021250427	0	0	0.021967886	0.08291766
LTU	0.03969935	0.042500854	0	0	0.021967886	0.104168087
LUX	0.03969935	0.021250427	0	0	0.021967886	0.08291766
LVA	0.158797398	0.042500854	0	0	0.021967886	0.22326614
MEX	0.079398699	0.021250427	0.01841476	0	0.021967886	0.141031772
NLD	0.03969935	0.042500854	0	0	0.021967886	0.104168087
NOR	0.03969935	0.021250427	0	0.021660402	0	0.082610175
NZL	0.158797398	0.021250427	0	0	0	0.180047825
POL	0.198496748	0.021250427	0	0	0.043628288	0.263375461
PRT	0.03969935	0.042500854	0.01841476	0	0.043935772	0.144550726
RUS	0.277895447	0.021250427	0	0.021660402	0.021660402	0.342466652
SVK	0.03969935	0.021250427	0.01841476	0	0.021967886	0.101332426
SVN	0.079398699	0.021250427	0	0	0.021967886	0.122617014
SWE	0.079398699	0.042500854	0	0	0.021967886	0.143867433
TUR	0.079398699	0.042500854	0.03682952	0	0.043628288	0.202357367
USA	0.079398699	0.021250427	0	0	0.021967886	0.122617014
ZAF	0.277895447	0.042500854	0	0.021660402	0	0.342056692

Source: OECD Digital STRI.