UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

FEBRUARY 2021

UNCTAD Research Paper No. 58
UNCTAD/SER.RP/2021/1

Joint Statement Initiative on E-Commerce (JSI): Economic and Fiscal Implications for the South

Rashmi Banga
Senior Economic Affairs Officer, Unit on Economic Cooperation and Integration among Developing Countries, Division on Globalisation and Development Strategies, UNCTAD
Rashmi.banga@un.org

Abstract:

Covid-19 pandemic has exposed the existing global digital divide and the urgent need to build digital infrastructure in the South. While many developing countries are in the process of designing national digital policies, a group of countries have initiated negotiations on digital rules under the Joint Statement Initiative (JSI) on E-Commerce. This paper identifies key digital rules being negotiated by the JSI members and examines their economic and fiscal implications for the developing countries which are members of the JSI. Mandatory legal frameworks for electronic transactions, free flow of cross-border data, restrictions on data localization, no source code disclosure, no customs duties on electronic transmissions, mandatory membership of Information Technology Agreement (ITA) and ITA Expansion and mandatory commitments of national treatment and market access in Mode 1, Mode 2 and Mode 3 in the identified services in GATS schedules are some of the key digital rules being negotiated. The paper highlights how these digital rules can restrict fiscal and regulatory space of the developing countries. Many of these digital rules have high costs of compliance and can adversely impact trade competitiveness of developing countries in the digital economy.

Key words: Joint Statement Initiative; JSI on E-Commerce, Free Flow of Cross - Border Data, Data Localization, Moratorium, Information Technology Agreement.

UNITED NATIONS

Contents

Acknowledgements

The author would like to thank Richard Kozul-Wright, Director, Division on Globalization and Development Strategies, UNCTAD for his valuable comments and suggestions. This paper was presented to the Informal Group of Developing Countries in the WTO on 29th January 2021. The author is grateful to the participants for their comments.

Introduction

The ongoing Copvid-19 pandemic has revealed the existing vulnerabilities of the South. Not only have many developing countries been hit hard by economic contagion from the lockdowns introduced by advanced countries but most will also take more time to recover (UNCTAD 2020)[1]. Lack of digital infrastructure and limited digital connectivity in developing countries are substantially contributing to the slow recovery of the South and accelerating the existing global inequalities.

While many developing countries are in the process of designing national policies to build their digital infrastructure in order to bridge the digital divide, there are ongoing efforts led by the leading digital economies in the North to have binding commitments through digital rules to curtail their existing policy and regulatory space. These digital rules are mainly being pushed as 'e-commerce rules' with the aim to facilitate exports and operations of their big-tech firms and super digital platforms. One such attempt is being made by a group of 86 countries (EU-27 plus 59 countries) which are negotiating digital rules under a 'Joint Statement Initiative on E-Commerce'. While these negotiations are being touted as WTO negotiations, it needs to be noted that this initiative remains outside the ambits of the WTO.

At the 11th WTO Ministerial Conference on 13th December 2017, Ministers declared that they would continue the work under the Work Program on Electronic Commerce based on the existing mandate as set out in WT/L/274[2] . They also agreed to "maintain the current practice of not imposing customs duties on electronic transmissions until our next session which we have decided to hold in 2019".

During this meeting, seventy-one countries (EU-28 plus 43 countries) declared that they would initiate exploratory work towards future WTO negotiations on trade-related aspects of electronic commerce. They also reiterated that "Our initiative will be undertaken without prejudice to existing WTO agreements and mandates". While the WTO mandate covers the Work Program on E-Commerce, any initiative to negotiate e-commerce rules was recognized by this group of countries to be outside the WTO agreements and its mandates.

Subsequently, at the World Economic Forum on 25th January 2019, the group of 76 countries (EU-28 and 48 countries) issued another Joint Statement which announced their intention to commence negotiations on trade-related aspects of electronic commerce. However, these negotiations are not under the aegis of the WTO since e-commerce rules are not mandated for negotiations in the WTO.

Nevertheless, some interested parties are misleading countries by referring to the Joint Statement Initiative (JSI) on E-Commerce as a 'Plurilateral Agreement which is being negotiated at the WTO'[3]. Further, the JSI Consolidated Text which was released in December 2019 is titled as "WTO Electronic Commerce Negotiations: Consolidated Negotiating Text – December 2020"[4]. This is confusing for the policymakers since these negotiations between a group of countries are neither a part of the WTO negotiations nor is there any certainty that it will lead to a plurilateral agreement in the WTO. For any agreement to become a plurilateral agreement in the WTO, it requires all Members to agree to make it a plurilateral agreement. This is because, in the WTO it is the Ministerial Conference which exclusively decides by consensus to add or delete a Plurilateral Agreement to/from Annex 4 that lists all the plurilateral agreements in the WTO. And if the consensus fails, there is no recourse to default voting for it.

There has been no consensus on including the JSI on E-Commerce into the WTO as a plurilateral agreement. Further, several members of the JSI have themselves noted "the need to determine …the legal architecture of the JSI outcome". The outcome of these negotiations therefore currently has no legal standing and is outside the realms of the WTO.

[1] South-South Cooperation at the time of COVID-19: Building solidarity among developing countries , UNCTAD (2020)

[2] https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/MIN17/65.pdf&Open=True

[3] https://www.uscib.org/hampl-weighs-in-on-wto-discussions-on-e-commerce/

[4] https://bilaterals.org/?wto-plurilateral-ecommerce-draft

In fact, while 60 members (EU27 and 59 countries) of JSI are negotiating these rules, 78 members of the WTO[5] are not part of these negotiations and altogether109 countries in the world are not negotiating these digital rules. It should be noted that while there are 60 members of JSI which are engaged in these negotiations, the proposals which are shaping the digital rules are received mainly by the developed countries like Canada, EU, US, UK, Japan and New Zealand. Out of 43 developing countries which are members of the JSI, not a single proposal on any of the negotiating issues has been received from 30 countries.

A consolidated negotiating Text was circulated in December 2020 which brings together the proposals of different members of the JSI on various digital rules which are being negotiated. It is expected that there would be a push by the developed countries in the twelfth Ministerial Conference to mainstream these rules into the WTO either through GATS Schedules of the members or as a plurilateral agreement. But these digital rules which are mainly based on the proposals received from the developed countries can have severe adverse economic implications by undermining the digital industrial development efforts of the developing countries and can incur huge fiscal losses for developing countries as these rules have high cost of compliance for developing and least developed countries. These rules if implemented can undermine the existing trade competitiveness of developing countries and also restrict their capacity to regulate their imports of both goods and services.

This paper examines some of the key digital rules which are being negotiated under the JSI and discusses the development implications of the most restrictive and least restrictive options/proposals, especially on the digital industrialization efforts of the South.

The consolidated negotiating text of JSI on e-commerce has six sections and an Annex dealing with different digital rules, which go much beyond e-commerce. These six sections categorize digital rules as follows: Enabling electronic commerce; Openness and electronic commerce; Trust and electronic commerce; Cross-cutting issues; Telecommunications; and Market access.

The subsequent sections of the paper discuss the key digital rules being negotiated under the above six categories and their economic and fiscal implications for the developing countries.

1. Enabling Electronic Commerce

The digital rules that are being negotiated under the category of 'enabling e-commerce' are divided under two sub-categories, i.e., those which are needed for facilitating electronic transactions and those which enable digital trade facilitation and logistics.

1.1 Facilitating Electronic Transactions:

This category of the digital rules which are touted as facilitating electronic transactions include the necessity of adopting a legal electronic transactions framework by the members of the JSI and laws on electronic authentication and electronic signatures; electronic contracts; electronic invoicing; and electronic payments services.

[5] Afghanistan, Angola, Antigua and Barbuda, Armenia, Bangladesh, Barbados, Belize, Bolivia, Botswana, Burundi, Cambodia, Cabo Verde, Central African Republic, Chad, Congo (Brazzaville), Cuba, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, Egypt, Fiji, Former Yugoslav Republic of Macedonia (FYROM), Gabon, The Gambia, Ghana, Grenada, Guinea, Guinea Bissau, Guyana, Haiti, India, Jamaica, Jordan, Kyrgyz Republic, Lesotho, Liberia, Republic of, Macao, China, Madagascar, Malawi, Maldives, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nepal, Niger, Oman, Pakistan, Papua New Guinea, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent & the Grenadines, Samoa, Senegal, Seychelles, Sierra Leone, Solomon Islands, South Africa, Sri Lanka, Suriname, Swaziland, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Uganda, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia and Zimbabwe.

To facilitate e-commerce the members of JSI are mandated to adopt a harmonized legal framework governing e-commerce. Para 1 of the section on Electronic Transaction Frameworks is based on the proposals of the US, Singapore, Hong Kong, China and Canada.

It proposes that each member of the JSI "**shall maintain** a legal framework governing electronic transactions consistent with the principles of the UNCITRAL Model Law on Electronic Commerce 1996 [taking into account, as appropriate, other relevant international standards.]". This makes it mandatory for the JSI members to maintain a national legal framework for governing their electronic transactions consistent with the UNCITRAL Model law.

But it is important for the countries to understand that the Model Law was adopted by the UN General Assembly in 1996 when no one had anticipated digital revolution. The General Assembly did not make it mandatory but recommended to the States to "***give favourable consideration*** *to the Model Law when they enact or revise their laws, in view of the need for uniformity of the law applicable to alternatives to paper-based methods of communication and storage of information;***"**

The Model Law does not define Electronic Commerce. According to the Model Law "The title of the Model Law refers to "electronic commerce". While a definition of "electronic data interchange (EDI)" is provided in article 2, the Model Law does not specify the meaning of "electronic commerce"." [6]

The objective of the Model Law (1996) was limited to providing equal treatment to paper-based documentation and computer-generated documents[7]. However, the scope of the Model Law is wide as it includes current as well as future developments in communication technologies, which in the current scenario would include all digital technologies like the 3D printing, Internet of Things, Artificial Intelligence, etc. as well as those which are not yet developed. According to the Guide to Model Law- "*More generally, it may be noted that, as a matter of principle, no communication technique is excluded from the scope of the Model Law since future technical developments need to be accommodated.*"

Agreeing to adopt the principles of Model Law would imply that the members agree to maintain a legal framework consistent with the principles of Model Law governing electronic transactions associated with all current and future digital technologies.

Para2 of the section on Electronic Transaction Frameworks has been proposed by US, Singapore, Hong Kong, Ukraine, China, Brazil and Canada which further instructs the Members to avoid/minimize unnecessary regulatory burden on electronic commerce and electronic transactions; facilitate inputs by interested persons in development of their legal frameworks; ensure that regulatory frameworks support industry-led developments; and avoid measures that treat commerce by electronic means in a more restrictive manner than commerce conducted by other means.

Para 2 would imply that the regulations by the governments on e-commerce and digital trade along with the associated digital technologies which facilitate digital transactions should be 'minimum' and also 'necessary'. This may include regulations with respect to e-commerce platforms, e-payments, electronic transmissions as well as regulations with respect to all software and data flows. The onus will lie on the governments to prove that the

[6] According to the Mode Law (page 17, para 7), "*Among the means of communication encompassed in the notion of "electronic commerce" are the following modes of transmission based on the use of electronic techniques: communication by means of EDI defined narrowly as the computer-to-computer transmission of data in a standardized format; transmission of electronic messages involving the use of either publicly available standards or proprietary standards; transmission of free-formatted text by electronic means, for example through the INTERNET. It was also noted that, in certain 18 circumstances, the notion of "electronic commerce" might cover the use of techniques such as telex and telecopy."*

[7] According to the Model law -"*The objectives of the Model Law, which include enabling or facilitating the use of electronic commerce and providing equal treatment to users of paper-based documentation and to users of computer-based information, are essential for fostering economy and efficiency in international trade. By incorporating the procedures prescribed in the Model Law in its national legislation for those situations where parties opt to use electronic means of communication, an enacting State would create a media-neutral environment."*

regulations that they put in place are necessary, non-restrictive, and minimum. This will be extremely challenging. Small and medium firms (SMEs) in developing countries do not have a level playing field in digital trade with respect to the big-tech firms of the developed countries and therefore the governments will be required to regulate the operations of the big-tech firms and super platforms to avoid undue competitive pressures on their domestic firms.

But these regulations will become extremely difficult to design and apply for the Members of JSI as any foreign firm or digital platform may challenge the regulations adopted by the governments and declare them to be "burdensome" or "unnecessary" or "hinder electronic transactions."

Acceptance of these proposed rules will severely restrict regulatory space of the governments in the digital economy. With the advent of digital revolution and explosion of electronic transactions, regulating electronic commerce and electronic transactions becomes necessary for the Governments. Many Governments are now designing their National E-Commerce Policies and National Data Policies. Laws are being designed to regulate national and international e-commerce platforms as well as the associated digital transactions and technologies. Any version of the above proposals, even the most relaxed version, will limit the governments' regulatory space and strengthen the role played by the foreign players like the exporters and foreign investors within their national territories.

1.2 Electronic authentication and electronic signatures; electronic contracts; electronic invoicing; and electronic payments services:

The negotiated digital rules will make it mandatory for the members of JSI to have laws with respect to electronic authentication and electronic signatures, electronic contracts and electronic invoicing. While developing countries may want to encourage the applications of electronic signatures, contracts and invoicing in their transactions, many of them, especially the least developed countries, may not have the capacity or technology to implement these laws. Apart from raising the costs of compliance, these rules will put the domestic firms in developing countries at a digital disadvantage as compared to the foreign firms which are already using these digital technologies.

The most restrictive proposal in this sub-category has been put forward by China on Electronic Payments Services. If accepted, this may prove to be very damaging for the developing countries as it will severely limit their financial regulatory space.

According to this proposal each member of the JSI "shall accord to electronic payment services and services suppliers of another party/member within its territory treatment no less favorable than it accords to any other like services and services suppliers". Further, "each member shall grant electronic services supplier of another member the right to establish or expand commercial presence within its territory, including through acquisition of existing enterprises." The proposal also states that members of the JSI shall ensure that the electronic payment services suppliers of other members operating within their territory are provided with adequate advance notice of, and opportunity to comment on, regulatory decisions of general application that are proposed by their regulatory authorities.

This proposal severely limits the flexibilities available to developing countries under GATS. Members' obligations under the GATS apply only to trade in those services sectors for which Members have voluntarily assumed obligations and commitments in their Schedule of Specific Commitments. Financial services are listed under the GATS as a sector covering 'banking and other financial services'. They include 'all payment and money transmission services'—which covers electronic payment services. A GATS Member State that has not assumed obligations with respect to the financial services sector is thus not restricted in imposing access limitations on foreign electronic payment services providers. However, this proposal, if accepted by the members of JSI, will take away this flexibility of the Member countries.

Many developing countries regulate their foreign services providers including electronic payment services suppliers like Amazon Pay, Apple Pay, Alipay, Bitpay, Google Pay, PayPal, Tencent, WeChat Pay, etc. It is also extremely important for developing countries to develop their own electronic payment services suppliers which are extremely limited in number and size. The proposal if accepted will allow the foreign firms to establish or expand their businesses including through acquisition of existing enterprises. This will allow the foreign services providers to

disregard the existing national laws around mergers and acquisitions. Not only will it become difficult for developing countries to regulate the foreign electronic payment services providers, but they will also have to inform them in advance and take their comments on the regulatory decisions made in this area.

As the use of financial technologies (Fintech) is rising so is the need to regulate payment systems and payment services providers growing. These regulations are needed to maintain the integrity of the monetary system and provide financial stability while protecting the consumers with regards to non-currency moneys.

Regulations are specifically needed for big tech payment services providers which have the potential to alter market structures and increase market concentration. According to IMF (2020),[8] artificial intelligence and machine learning applications have rapidly evolved in financial services, including payments and need close monitoring as they present potential financial stability risks, including dependencies on third-party service providers, emergence of new players that fall beyond the scope of the regulatory perimeter, and lack of auditability of artificial intelligence and machine learning which may result in unintended consequences.

While developed countries had full policy and regulatory space when they were designing their laws and regulations, the same policy and regulatory space of the developing countries is being compromised through these digital rules.

Developing Members of the JSI may think of taking a carve out for financial services but this will then be used as a bargaining chip by the developed countries in the negotiations and may compel developing members to accept regulatory restrictions in other areas.

1.3 Digital Trade Facilitation and Logistics:

1.3.1 Paperless Trading

Based on the proposals received by 11 countries (Japan, Hong Kong, Brazil, Korea, China, Thailand, UK, New Zealand, Ukraine, Singapore and Chinese Taipei) there are rules being negotiated on digital trade facilitation which are stricter than those in the Trade Facilitation Agreement of the WTO to which most of the developing countries are a party.

These rules include making mandatory for the member countries of the JSI to provide all trade administration documents in electronic forms to the public; accept trade administration documents in electronic forms; and accept relevant international standards whenever available for issuing, accepting and exchanging electronic documents like e-Phyto certificates, electronic CITES permit, e-Air Waybill, e SPS certificates, etc.

While the proposals tabled by some of the members seek to make these rules as best endeavor rules, others want to make it mandatory for the JSI members. The ongoing negotiations will decide the format of these rules which are being put in place to facilitate digital trade, however it needs to be understood that these rules entail costs depending on the level of development of the digital economy. In developed countries these digital technologies are already being used so their costs to follow these rules will be minimal, but compliance costs will be high for the developing members who may not be able to afford these costs especially in the times of the ongoing pandemic.

1.3.2 Improvements to Trade Policies

Within this category of digital trade facilitation, a proposal has been tabled by China on improvements to the members' trade policies. According to this proposal members will endeavor to adjust their trade policies for

[8] Tanai Khiaonarong and Terry Goh (2020),"Fintech and Payments Regulation: Analytical Framework", IMF Working Paper, WP/20/75

improvements to adapt to new development of trade in the field of e-commerce. While this appears to be a relaxed rule, the proposal further states that the members shall promptly notify of the policies and measures with respect to e-commerce and these will be done in a specific format and requirements of the notification which will be decided by the members. Further, it proposes that the members shall not apply customs duties, internal taxes, and other internal charges along with non-tariff and other regulatory measures on cross-border e-commerce imports stricter than normal circumstances of trade.

This proposal, if accepted, will increase the notification burden on the JSI members as it will become mandatory to promptly notify in the given format all the trade policies adjustments made by the members. Not only will this increase the costs of compliance for the members of JSI but will also restrict their policy space in e-commerce.

China itself regulates the imports which come through e-commerce platforms. On April 7th 2016, China announced a positive list for commodities traded using cross-border e-commerce (CBEC)[9]. It included 1142 HS codes, meaning that any product not included in the list is not allowed to be imported using this channel. This included products such as fresh food, seafood, certain nutritional products (supplements, e.g. basic vitamins and fish oil, etc.) and UHT milk. This is a good practice that should be followed by other developing countries as well. With the exponential growth of cross-border e-commerce, the small and medium enterprises in developing countries are slowly losing their share of domestic market and there is a need to have controls over imports through cross-border e-commerce which come into the national territories free of customs duties as well as other charges. This is also needed to bring at par the imports through e-commerce channel on equal footing with those which enter the national boundaries without the use of e-commerce and face customs duties.

1.3.3 Logistic services

China has also proposed digital rules around logistic services according to which members have to agree to improve their level of specific commitments in logistics services and undertake both market access and national treatment commitments on core freight logistics services including allowing establishment of commercial presence and applying domestic regulations in a reasonable, transparent, and non-discriminatory manner. Further, members shall streamline their licensing procedures related to logistics services and grant all applicants licenses in a non-discriminatory manner and control process time between accepting the application and making the decision within a reasonable period.

This proposal can greatly hinder the regulatory space of the developing member countries of the JSI apart from raising their costs for compliance. This also compromises countries' GATS flexibilities which adopts a positive list approach and allow the countries to not take commitments in any services sector that they want.

2. Openness and Electronic Commerce:

2.1 Non-discrimination treatment of digital products:

Based on the proposals of US and Japan, 'digital product' means a computer program, text, video, image, sound recording or other product that is digitally encoded, produced for commercial sale or distribution and that can be electronically transmitted. However, US further proposes that this definition should not be understood to reflect view that digital products are goods or are services, while Japan proposes that the definition should not be understood to reflect the view on whether trade in digital products through electronic transmission should be categorized as trade in services or trade in goods.
This lack of consensus between the developed JSI members on what a digital product is and how to classify the trade in digital products, i.e., as trade in goods or trade in services can lead to further ambiguity on what digital rules are being agreed to by the developing members of the JSI.

[9] https://www.eibens.com/news/cross-border-e-commerce-cbec-positive-list-published-and-its-expansion/

Further, Japan, US and Ukraine propose that no member country shall accord less favorable treatment to a digital product created, produced, published, contracted for, commissioned or made available on commercial terms in the territory of another member or to a digital product of which the author, performer, producer, developer or owner is a person of another member, than it accords to other 'like' digital products.

The ambiguity in classification of trade in digital products and associated like digital products makes this digital rule very restrictive for the developing members of JSI. This would imply that national treatment will have to be extended to the service providers of digital products and 'like digital product's even if countries have not taken binding commitments in that sector in their GATS commitments. It can also extend to GATT commitments as countries will not be able to levy customs duties to products which are transmitted electronically even if the WTO moratorium on customs duties on electronic transmissions is removed. These digital rules will therefore lead to WTO Plus commitments for the developing countries which are members of JSI.

2.2: Flow of information:

2.2.1 Cross- Border transfer of information by electronic means/ Cross-border data flows: and Location of computing facilities:

The countries which have proposed digital rules around cross border data flows are US, South Korea, Canada, Japan, EU, Brazil, Singapore, UK, and Chinese Taipei.

According to the proposals, no member shall prohibit/ restrict/prevent the cross-border transfer of information, including personal information (including data, about an identified or identifiable natural person), by electronic means if this activity is for the conduct of business of a national/enterprise[10]/investor/service supplier/organization or for the consumers to access, distribute and use services and applications.

EU has further elaborated on the kinds of restrictions which Members cannot apply on the cross-border data flows. These include requirements with respect to use of computing facilities or network elements within the national boundaries; requirement of localization of data for storage or processing within the national boundaries; prohibiting storage or processing of data in other member's territories; or making cross-border transfers of data contingent upon the use of computing facilities or network elements within a Member's territory or other local requirements.

The proposals however further add that nothing in the above Article shall prevent a Member from adopting a measure to achieve a legitimate public policy objective, if the measure is not applied in a manner which is arbitrary or leads to unjustifiable discrimination or is a disguised restriction on trade. Such a measure should also not impose restrictions on transfer of information greater than what is necessary or required to achieve the public policy objective. Privacy may be considered as a legitimate public policy objective.

EU has provided further clarity on public policy objective by specifying that Members may adopt and maintain the safeguards they deem appropriate to ensure the protection of personal data and privacy. While Korea has added that any measure that is considered necessary for the protection of essential security interests will be allowed. The Text further instructs that Members cannot adopt measures that apply different treatment to data transfers solely on the basis that they are cross-border, and which modifies the conditions of competition to the detriment of another party (enterprise/ investor).

The proposals further dictate that no member shall require to use or locate computing facilities in their national territories as a condition for conducting business. In other words, governments cannot have data localization restrictions on foreign players.

[10] whether profit, non-profit; private or government owned or controlled.

The US and the UK have also proposed that no restrictions on data localization should also extend to financial services providers.

2.2.2. Development Implications of the proposed Digital Rules around Cross-Border Data Flows and data localization in the JSI

The proposed e-commerce rules in the JSI with respect to cross-border data flows and data localization go much beyond the scope of e-commerce and should be referred to as digital rules. These digital rules can have severe adverse development implications on the digital industrialization efforts of the developing countries and can hinder their progress in the digital economy. Not only will they restrict the much needed regulatory and policy space of the developing countries but will actively contribute to accelerate global trade competitiveness of the developed countries and of a few developing countries like China at the cost of undermining trade competitiveness of most of the developing and least developed countries. These rules will further widen the existing digital divide adding to the growing global inequalities. The ways in which these digital rules will adversely impact developing countries' digital industrialization are as follows:

a- The role played by the "data" in digital revolution is now well understood by countries. It is often said that Data is the new oil and the key resource of the digital economy. What it means is that the way during the industrial revolution, it was not the oil-producing countries which developed, but countries which processed oil and used it in their factories to manufacture industrial products that benefitted the most; similarly, in the digital industrial revolution those countries which process Data in their data centers and clouds and use it in their digital technologies will be the ones to digitally advance and not those which provide data.

b- Data can be both personal data (identifiable) or non-personal data (non-identifiable). While countries have understood the importance of protecting personal data and are putting in place national policies to protect them, it is important to highlight that as digital revolution is unfolding the importance of protecting non-personal data is also growing rapidly. One of the reasons for protecting non-personal data is because the latest research[11] shows that by using reverse engineering and machine learning non-identifiable data can re-identify individuals i.e., non-personal data can be converted into personal data. The research demonstrates for the first time how easily and accurately this can be done -even with incomplete datasets. In the research, 99.98 per cent of Americans were correctly re-identified in any available 'anonymized' dataset. Thus, if restrictions on cross-border flow of personal data are allowed and digital rules are made flexible with respect to 'personal' data to protect privacy and for national security reasons then the same flexibilities are required for protecting the non-personal data. While the JSI proposals allow for relaxation on restrictions on cross-border flows of personal data, similar flexibilities are not available for non-personal data.

c. In fact, free flow of cross-border non-personal data or 'aggregate data' (as it is sometimes referred) can also be economically costly for developing countries as it can accelerate their loss of existing trade competitiveness and hinder their digital industrialization. Digital Industrial Revolution is reshaping the global economy and drastically shifting the trade competitiveness towards those goods and services which have higher digital content. Digital content in goods and services can increase in all stages of production by using digital services and digital technologies, for example, in the pre-production stage use of Big Data analytics, artificial intelligence, computer-aided designs. etc., can increase digital content in the good and make it more competitive. Robotics in the production stage can lead to rise in productivity and accuracy of production with zero manufacturing defects and 3D printing can aid mass customized production. In the post-production stage e-commerce platforms can drastically change the effectiveness of distributive services and impact the global distribution patterns. Furthermore, Internet of Things enable smart production and improve the efficiency and speed of pre-production and post-production stages, bringing them closer to the production stage.

   While digital technologies offer huge opportunities, the first mover advantages go to those enterprises/exporters who have the capacity to store 'data' and process 'data' and build the 'software' which are used in the digital technologies. While most of the data in the world are generated in continents/countries which have large and young population like Africa, India and China, only big-tech firms and digital platforms have the capacity to store and process data and these mostly belong to developed countries like US, UK, Germany, France, and Japan. China has also emerged as

[11] Luc Rocher, Julien M. Hendrickx, Yves-Alexandre de Montjoye. Estimating the success of re-identifications in incomplete datasets using generative models. *Nature Communications*, 2019; 10 (1) DOI: 10.1038/s41467-019-10933-3

one of the digital leaders in the world. However, most of the developing countries as well as the least developed countries lack these digital infrastructure, skills and capacities.

This growing digital divide is eroding the existing trade competitiveness of developing countries, especially in their traditional export sectors like textiles and clothing, footwear, etc. It is also accelerating global inequalities by concentrating rents in the hands of a few superstar firms (Trade and Development Report, UNCTAD 2018). For example, with market capitalization of $2 trillion in December 2020, Apple Inc. has become bigger than 82 % of countries in the world which have GDP less than $2 trillion. These also include countries like Mexico, Indonesia, the Netherlands, Saudi Arabia, Turkey, and Switzerland. Free flow of cross-border data in developing countries will give developing countries' data in the hands of these superstar firms which will only multiply their wealth and further limit the prospects of developing digital infrastructure and capacities in the developing countries.

d. A key digital infrastructure which needs to be built for digital industrialization is the data centers and clouds hosted within the data centers. Data Centers store and process data and are the 'factories' of the digital economy. Developing countries need to develop this key digital infrastructure to be able to store their data, which is rapidly growing in volume, as well as develop capacities to process data. For small countries, regional data centers need to be developed (UNCTAD, 2018)[12]. New technological developments have greatly reduced the costs of setting up data centers. Small, distributed data centers, called edge data centers, are now being deployed to provide hyper-local storage and processing capacity at the edge of the network. Further, ecofriendly data centers are emerging which are creating demand for renewable energy. Studies show that African countries like Nigeria, Kenya and South Africa have huge potential of hosting data centers[13].

   In the face of lack of financial resources to provide positive data center incentives, data localization policies become an effective alternative tool in the hands of the governments to attract investments in the data centers and build their digital infrastructure and digital capacities. More than 20 countries have enacted some form of data localization policies including Australia, Canada, China, Russian Federation and the UK. Developing countries like Indonesia provide successful examples of countries where data localization policies have helped in attracting domestic and foreign investments into data centers.

e. While the proposals for 'free flow of cross-border data' and 'no restrictions on data localization' have come mainly from the developed countries like the US and the EU, these countries themselves promote data localization in their countries. Bauer et al (2016)[14], has identified 22 data localization measures still being used by EU countries where the countries impose restrictions on the transfer of data to another country. Further 35 restrictions on data usage have been identified which indirectly localize data within their countries.

   EU's General Data Protection Regulation (GDPR) also contains extensive regulation of data flow and storage, including restrictions on exporting personal data outside of the EU. Personal data can be moved outside the EU, but only if the jurisdiction in which the recipient is located provides an adequate level of data protection and very few countries are eligible. Only a handful of countries meet EU's criteria so effectively data of EU's nationals cannot be taken out of EU and stored and processed in most of the developing countries.

   The US, on the other hand, does not really need restrictions on data flows as most of the big tech firms and digital platforms are of US origin and majority share of data centers in the world are hosted in the US. It is interesting to note that within the US many states compete to attract investments in data centers in their states by providing extensive data center incentives which include sales tax exemptions, tax breaks, property tax exemptions, grants and concessional loans, etc. Annex 1 provides details of Data Centre Incentives provided by 22 states in the US.

   Many other developed countries have enacted some or the other form of data localization policies. For example, in British Columbia and Nova Scotia mandate that personal information held by certain public institutions must be stored and accessed exclusively within Canada, with a few exceptions; Australia's Personally Controlled Electronic Health Records Act prohibits the transfer of health data out of Australia, while UK Government now has a clear 'Public Cloud First' strategy.

f. It is important to note that data localization allows countries to have 'full' access to their own data, while storing data in other countries may imply partial access to your own national data as the laws and regulations of the country where

[12] Unctad (2018), "South-South Digital Cooperation for Industrialization: A Regional Co-operation Agenda"

[13] Data centres in Africa | Turner & Townsend (turnerandtownsend.com)

[14] Bauer et al (2016), "Unleashing Internal Data Flows in the EU: An Economic Assessment of Data Localisation Measures in the EU Member States" ECIPE

the data resides may apply and will need to be fulfilled before accessing your own data. But the country where your data resides has full access to your data. This becomes more critical and limiting if financial data of a country is also included.

2.2.3 What is a legitimate public policy objective?

The proposals on digital rules in the JSI attempt to provide flexibilities to the members for applying measures that are deemed as needed for achieving a 'legitimate public policy objective'. The caveat which accompanies this flexibility is that any such measure should not be applied in a manner "which is arbitrary or leads to unjustifiable discrimination or is a disguised restriction on trade. Such a measure should also not impose restrictions on transfer of information greater than what is necessary or required to achieve the public policy objective." Examples provided for the measures which are permitted to achieve legitimate public policy objectives include national security interests and privacy of personal data.

However, in practice, this flexibility may be of little use for most of the developing countries. Many of the developing countries lack national laws and legislations which give them sovereign rights over their data. They are yet to understand what 'data' is being collected and taken out of their countries by the big digital players and whether their data is being used/misused by these platforms.

The rising legal suits by G20 governments against the big digital players like Google and Facebook on account of breach of trust should provide a warning to the developing countries when terms like 'data flows with trust' are used to convince them to freely let their data flow out of their countries. While regulations for providing level playing field to domestic firms may be seen as a legitimate public policy objective by the governments of developing countries, these regulations may be seen as an 'unnecessary restrictions' by the foreign firms.

3. Customs duties on electronic transmissions:

3.1 Definition of Electronic Transmissions (ET):

Based on the proposals of Japan, US, Brazil, Korea and Canada, "Electronic Transmissions" have been defined in the JSI Text as those transmissions which are made using electromagnetic means.

There has been no consensus on the scope and definition on electronic transmissions (ET) in the WTO therefore defining ET as "transmissions which are made using electromagnetic means" goes much beyond what is commonly understood by the Members in the WTO.

In 1998, based on a proposal submitted by the United States, WTO members adopted a Declaration on global electronic commerce, which included a two-year moratorium stating that "Members will continue their current practice of not imposing customs duties on electronic transmissions". The debate since 1998 has focused on whether ET should be treated as 'goods' and be exposed to custom duties as defined under Article II of GATT 1994 or as services where GATS schedules apply?

Literature in the WTO has identified the on-line trade of 'digitizable products' as ET. In 2003, WTO Background Note (15 May 2003 IP/C/W/128/Add.1) identified 'digitized products' at ET consisting principally of sound recordings, audiovisual works, video games, computer software and literary works, that can be delivered in a physical form such as CDs, CD-ROMs, DVDs, videos, books, newspapers and magazines, or in an electronic form over the Internet. According to the WTO Note (2016)[15], which was prepared on the request of the member states to provide fiscal implications of a custom moratorium, five categories of digitizable products were identified, namely, films, music, printed matter, computer software and video games. Using these descriptions and earlier literature on ET, UNCTAD (2018,2019) identified 49 HS 6-digit tariff lines as ET[16].

[15] WTO,2016-JOB/GC/114

[16] UNCTAD Research Paper No. 29, UNCTAD/SER.RP/2019/1, February 2019.
Also accessible on: https://unctad.org/en/PublicationsLibrary/ser-rp-2019d1_en.pdf

However, the definition and the scope of ET is being expanded continuously. In August (2019) ECIPE identified 4 broad categories of services as ET. These were wholesale and retail trading services- (which include all retail sales, wholesale trade and commission trade, hotels and restaurants, repairs of motor vehicles and personal and household goods and retail sale of automotive fuel); recreational and other services (which include recreational, cultural and sporting activities, other service activities and private households with employed persons-servants); communications services (which include- post and telecommunications services); and business services n.e.c. (which include--real estate, renting and business activities).

In November (2019) OECD study yet again changed the narrative around ET and described the scope of ET as 'digital deliveries' which covers services like business services, including online financial services, legal services, etc.

However, the definition adopted by the JSI Text is much broader and covers all goods and services delivered via Mode 1. But Mode 1 services are disciplined under GATS in the WTO with a positive list approach and that provides considerable flexibilities to developing countries in terms of regulating their imports of services.

More importantly, this definition of ET under JSI expands the trade coverage of the moratorium on customs duties manifolds. Using the WTO's database on Trade in services by Mode of Supply (TISMOS) UNCTAD (June 2020- Research Paper 47) estimates total imports of services via Mode 1 as USD 705 billion in 2017 while total imports of digitizable products were around USD 80 billion in 2017. Using the broader definition of ET, the JSI Text substantially increases the trade coverage by multiples to which the moratorium applies.

3.2 No Customs Duties on Electronic Transmissions:

Based on the proposals of Japan, US, Singapore, Hong Kong, Brazil, Korea, New Zealand, Canada, EU, Ukraine, Russian Federation and the UK, Para 2 of the JSI Text proposes that no member shall impose customs duties/fees/charges, on Electronic Transmissions (ET) which [includes content transmitted] between members of the JSI. While Indonesia has proposed that Members agree to maintain the current practice of not imposing customs duties on electronic transmissions, excluding the content transmitted electronically. It further adds that this may be adjusted in light of any further WTO Ministerial Decisions or Agreements in relation to the Work Program on Electronic Commerce. China has also proposed the same but includes 'content transmitted electronically.'

Further, some countries (Singapore, Hong Kong, Ukraine, Korea, New Zealand, Canada, Brazil, Russian Federation, Indonesia, Canada, US and the UK) propose that this will not preclude Members from imposing internal taxes/fees/other charges on ET provided that these taxes/fees/charges are imposed in a manner consistent with the WTO Agreement/ and are on a non-discriminatory basis [and on a retrospective basis].

3.3 Development Implications of the Definition of Electronic Transmissions:

3.3.1 Broader the definition higher is the potential tariff revenue loss for developing countries.

Using the most conservative estimates and narrowest definition of ET (as digitizable products), UNCTAD (2019,2020) has estimated that no customs duties on ET can lead to substantial tariff revenue loss to the developing countries, which will rise continuously as more and more products are digitalized. It is estimated that the potential tariff revenue loss to developing countries is around $10 billion per annum. Tariff revenue loss to WTO LDCs is estimated at $1.5 billion while African countries' loss is around $ 2.6 billion per annum. However, WTO high-income countries experience a tariff revenue loss of only $289 million, as their average customs duties are at 0.2%.

It is interesting to note that the potential tariff revenue loss to Sub-Saharan African countries is twice that of the WTO High Income countries. Potential tariff revenue loss for the WTO LDC member countries is also found to be higher than that of the developed countries. Alternatively, it can be said that WTO LDCs can generate five times more tariff revenue than the developed countries if the Moratorium on customs duties on ET is removed. However,

if all services imported via Mode 1 are included under the Moratorium, per the definition of the JSI Text, this potential loss will be manifolds higher.

3.3.2 Loss of policy space in regulating imports of luxury items

Tariffs are not only needed to generate revenues in the developing countries but are a simple and an effective policy instrument in the hands of the governments for regulating the imports of luxury items like video games and movies. Especially in the period of pandemic when domestic financial resources are most needed to buy vaccines and other medical related equipment, it becomes extremely important for developing countries to not waste their domestic financial resources on imports of luxury items. But any agreement on not applying customs duties on Electronic Transmissions would mean that imports of luxury items which are digitally imported will not be regulated and will enter unchecked into the national territories of the developing countries. This includes video games, movies, music and printed matter.

3.3.3 Adverse impact on domestic Growth of SMEs and Digital Industrialization

More importantly, in the digital world unregulated imports of software can have wide implications. All digital technologies are increasingly using software. For example, it is often argued that 3D printing cannot assist mass production and therefore will not be able to capture substantial market share, however recent technological advances, namely high-speed sintering, indicate that high speed and mass production is becoming possible with 3D printers where mass-producing up to 100,000 (smaller) components in a day will be possible at a speed which is 100 times faster[17]. While 3D printing is still considered to be at a nascent stage in developing countries, its market has grown annually by 22% in the period 2014-2018[18]. It is estimated that if current growth of investments in 3D printing continues, 50% of the manufactured goods will be 'printed' in 2060 and if investments in 3D printing doubles, this target will be achieved in 2040 (ING, 2017)[19]. This will wipe out almost 40% of cross-border physical global trade. And if investments in 3D printing doubles, this can be achieved by 2040.

With Moratorium on ET, foreign firms will be able to export duty free software to developing countries to 3D print the currently manufactured products. The most affected sectors will include textiles and clothing, footwear, auto-components, toys, mechanical appliances, and hand tools, etc. which generate large scale employment for low skilled workers and are sectors where most of the SMEs operate.

3.3.4 Negotiated Outcomes of GATT and GATS can become meaningless.

Moratorium on ET with Growth of 3D printing can also jeopardize two decades of negotiated tariffs on industrial products under GATT. 3D printers with duty-free electronic transmissions of CAD files can be used to 'print' manufactured products in any country, irrespective of the protection given by the governments to the sectors in the developing countries through well negotiated tariffs under GATT. For example, if a country is protecting its footwear industry by having relatively higher custom duties on shoes then with the use of 3D printer and duty-free electronically transmitted CAD files, a foreign firm can have mass production of shoes within the national boundary of the country, without exporting shoes or having a physical presence. Anti-dumping measures may also not help as it will be difficult to prove that 3D printed products are imports since they have not crossed borders, and it will be difficult to categorize them as 'like' products with different cost structures. While developed countries are fast developing this technology, developing countries are still at a nascent stage.

[17] Ing (2017), ''3D printing: a threat to global trade' (https://www.ing.nl/media/ING_EBZ_3d-printing_tcm162-131996.pdf

[18] Statista (https://www.statista.com/statistics/796237/worldwide-forecast-growth 3d-printing market/)

[19] ING (2017), ''3D printing: a threat to global trade' (https://www.ing.nl/media/ING_EBZ_3d-printing_tcm162-131996.pdf)

Further, the protection given by developing countries to some of their domestic services sectors under GATS may also be lost if the broad definition of ET is accepted. For example, countries which have not taken any commitments in Mode 1 in different services sectors will now lose this flexibility and will not be able to apply discriminating duties/charges on foreign services suppliers in order to provide level playing field to their domestic services suppliers.

4. Trust and Electronic Commerce

To encourage trust in electronic commerce, the proposals have been tabled by a number of countries including some developing members which include Russian Federation on privacy and personal data protection. The proposals include digital rules around online consumer protection; unsolicited commercial electronic messages; personal data protection and privacy; and business trust including source code and ICT products that use cryptography.

4.1 Online Consumer Protection:

On consumer trusts the proposals are more flexible and relate to higher cooperation, consideration to measures which encourage trust and providing equal protection to online and offline consumers as well as mechanisms for consumer redress.

4.2 Personal Data Protection and Privacy:

A number of developed and developing countries like the EU, US, Japan, UK, Korea and Canada, China Russian Federation, Singapore, Hong Kong, Brazil and Ukraine have tabled proposals around the protection of personal data and privacy.

Recognizing the importance of protection of personal data countries are negotiating whether the members shall or may adopt legal frameworks to protect personal data. It has also been proposed that while developing their legal frameworks members should/may take into account principles and guidelines of relevant international bodies like the ECD Recommendation of the Council concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data. Russian Federation has proposed that members shall ensure obtaining the directly expressed individual's consent for cross-border transfer and processing of his personal data.

However, as mentioned earlier, the new technologies available can easily convert non-personal data into personal data with the help of connected devices. With the rapidly developing digital technologies the restrictions around personal data and privacy are also needed for non-personal data in order to protect the privacy of citizens of developing countries. This is more important for developing countries as they do not yet have these advanced digital technologies which can be used to protect the personal data of their citizens.

5. Business Trust: Transfer or access to Source Code.

Based on the proposals of Canada, Chinese Taipei, Japan, Mexico, Peru, Ukraine, US, UK, Korea, Singapore, and EU, digital rules are being negotiated around source code under the category of enhancing business trust in e-commerce. Source code is defined as algorithms or sequence of steps taken to solve a problem or obtain a result. The proposals dictate that no member shall require the transfer of or access to source code of software owned by persons of another member as a condition for import, distribution, sale, or use of that software or of products containing that software in its territory.

Negotiations on source code disclosure are on exclusions/exceptions in case of security reasons; requitements by a court, administrative tribunal or competition authority; and protection and enforcements of intellectual property rights.

5.1 No Source Code Disclosure: Hinders digital technology transfers.

Simply understood, source codes are computer programs or algorithms which lets the computer know what it needs to do and therefore can be categorized as digital technologies. One of the key objectives for attracting foreign direct investments in developing countries is potential technology transfers from foreign firms to domestic firms which can help the country to technologically advance. Many technology transfer agreements have been signed between developed and developing countries which have benefitted the developing countries. However, taking binding commitments on no source code transfer/disclosure/access would imply that developing countries will never be able to benefit from the presence of foreign digital firms or platforms in terms of digital technology transfers (Trade and Development Report, UNCTAD 2018). This is a huge cost which developing members of JSI will pay. This may lead to rising dependencies on foreign digital technologies as the operations of foreign digital players increase in their national territories, which will come with interconnected technologies.

5.2 No Source Code disclosure restricts regulatory space and can enhance racial discrimination.

Taking binding commitments on no source code disclosures/transfers/access severely limits the government's ability to regulate and tax the operations of foreign digital players within their national territories. Governments may need disclosure of source codes used by foreign firms for many reasons for example, to assess whether the foreign players have been paying the correct amount of taxes, complying with national laws, not engaging in anti-competitive activities, etc.

Further, recent studies[20] have shown that source codes and algorithms which are inter-connected and learn from themselves (machine-learning) can lead to many undesired outcomes which include discrimination based on income, color and gender. Recognizing this, the UN Committee on the Elimination of Racial Discrimination has stressed that algorithmic profiling systems should be in full compliance with international human rights law[21]. It has underscored the importance of transparency in the design and application of algorithmic profiling systems when they are deployed for law enforcement purposes. In its recommendations the Committee emphasizes, "This includes public disclosure of the use of such systems and explanations of how the systems work, what data sets are being used and what measures preventing human rights harms are in place."

Thus, to regulate the digital players and their use of algorithms, developing countries must preserve their existing regulatory space by not taking any binding commitments on source code disclosures. Not knowing what kind of algorithms will be developed in the future, this regulatory space is extremely important for the governments.

5.3 Potential misuse of source codes in future

Digital technology is evolving very rapidly, and new ways of using and misusing algorithms are also rapidly rising. Taking any binding commitments on not being able to ask foreign players to disclose their source codes may be too risky for the developing countries as they do not have the advance digital technologies to be able to control the adverse implications. According to the Competition and Markets Authority of the UK[22], "*to understand fully how an algorithmic system works and whether consumer or competition law is being breached, regulators need appropriate methods to audit the system*". "*digital markets are dynamic. Deployed algorithmic systems and the data that they use can change quickly as techniques improve, so new harms may manifest quickly. For example, even assuming that algorithmic collusion is not a significant problem now, it could rapidly become so if a critical mass of firms starts to use more complex algorithmic systems for pricing in a particular market*".

To avoid future risks like algorithm collusions and other misuses, developing countries need to preserve their regulatory space with respect to right to seek a disclosure of source codes of foreign firms.

[20] Harold Feld (2019),"The Case for the Digital Platform Act: Market Structure and Regulation of Digital Platforms" Roosevelt institute, Public Knowledge.

[21] https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=26548&LangID=E

[22] https://www.gov.uk/government/news/cma-lifts-the-lid-on-impact-of-algorithms

6. Cross -Cutting Issues

6.1 Transparency:

Based on the proposals of Canada, Japan and China, the members of JSI shall publish, or make publicly available, promptly and at the latest by the time of their entry into force, all measures of general application pertaining to or affecting digital trade / electronic commerce.

However, this can prove to be an extremely onerous obligation for the developing JSI members on at least two counts. Firstly, it may be very difficult for countries to identify all measures that affect digital trade or electronic commerce since these could include many laws, regulations and commitments with respect to services which are used or may impact digital trade or electronic commerce. For example, trade laws, investment laws, competition laws, regulations with respect to providers of services like advertisement, logistics services, retail, and wholesale services, etc. The list can be very long as the obligations include all measures that may affect digital trade or electronic commerce. Secondly, this information must be publicly available 'promptly' which may entail higher compliance costs for the developing countries. Many developing and least developed countries are already finding it difficult to provide all required WTO notifications due to lack of capacities and added to those notification burden, this obligation under the JSI could be very costly and extremely difficult to fulfil.

6.2 Capacity Building

While many of the proposed digital rules are obligatory for the members of the JSI to follow, capacity building or technical assistance in electronic commerce to developing countries or LDCs is not made mandatory or obligatory for the developed members of the JSI. In fact, none of the developed countries have submitted any proposals on capacity building on electronic commerce.

Based on the proposals of Indonesia and China, it is being negotiated that upon request of a developing country or LDC, developed or developing members "which are in a position to do so" shall provide targeted technical assistance and capacity building on mutually agreed terms and conditions so as to enable them to implement JSI rules on e-commerce. The only accepted agreement till date on e-commerce is the moratorium on customs duties on electronic transmissions. Further, it is proposed that members should explore the way to establish an electronic commerce for development program under the WTO framework. Members are also encouraged to improve their electronic commerce infrastructure, but no commitments are taken by the developed countries in terms of helping the developing members build their digital infrastructure to bridge the digital divide.

7. Market Access: Services

Based on the proposals of China, Chinese Taipei, EU and US, the market access in services is proposed to be extended by all the JSI members through their GATS Schedules. The members shall indicate no limitations or specify 'None' under limitations on Market Access and Limitations in National Treatment in identified five broad services sectors for Modes 1, 2 and 3 and keep 'Unbound' for Mode 4 in their GATS Schedules. The identified five broad services sectors are:

1. Business Services
    - 1.A Computer and related services
    - 1. F. Other Business Services
        - a. Advertisement Services.
        - e. Technical testing and analysis service
2. Communication Services
    - 2.B. Courier Services
    - 2.C. Telecommunication Services (Additional Commitments)

4. Distribution Services
    A. Commission agents' services
    B. Wholesale trade services
    C. Retailing services
7. Financial Services
    B. Banking and Other Financial Services
11. Transport Services
    A. Maritime Transport Services
    C. Air Transport Services
    E. Rail Transport Services
    F. Road Transport Services
    H. Services auxiliary to all modes of transport

Thus, out of the eleven services sectors in the GATS where the countries have flexibilities under the positive list approach to take or not take any binding commitments, JSI makes it mandatory to take binding commitments in five broad services sectors where countries commit to have no limitations under three modes imports of services i.e., cross-border (Mode 1); consumption abroad (Mode 2) and commercial presence (Mode 3). However, the mode of supply of services through presence of natural persons (Mode 4) which is the offensive interest of developing countries, the JSI members will keep it 'unbound' and take no binding commitments!

It is important to note that the developed countries which are the members of JSI are net exporters of services in Mode 1, while most of the developing countries which have joined JSI are net importers of the identified services. Higher market access in services will benefit the net exporters of the services the most, as they have higher competitive advantage in these services.

Table 1 shows that global exports, imports and balance of trade in these identified services via Mode1, Mode2 and Mode 3 in developed and developing countries. The global exports of these services amount to USD 6.8 trillion in 2017 of which around USD 5 trillion is exported by the developed countries. The share of just two countries in the world i.e., EU and US in global exports of these services is 53 per cent! Most of the developing countries are net importers of these identified services where the proponents of JSI are seeking to increase the market access including developing countries like Indonesia, Malaysia, India, South Africa, Mexico, Nigeria, and Kenya. Given the trade competitiveness of developed countries in these services any further efforts to increase the market access will benefit the developed countries which are net exporters of these services. Appendix Table 2 reports the balance of trade of around 200 countries in the world of the identified services in the JSI Text. Most of the developing countries are found to be net importers of these services.

Table 1: Exports, Imports and Balance of Trade in 2017 via Mode1, Mode 2 and Mode 3 of Identified Services* in JSI Proposals for Increasing Market Access in Services

		Exports in USD Million	Imports in USD Million	Balance of Trade in USD Million
JSI Members-Developed Countries		5,063,775	4,362,552	701,223
1	EU (27)	2,618,765	2,355,723	263,042
2	Australia	110,548	79,763	30,785
3	Japan	476,826	199,637	277,189
4	Switzerland	374,649	144,713	229,936
5	United States of America	1,048,485	885,357	163,128
	Others (4)	434,501	697,358	-262,857
JSI Members-Developing Countries		1,509,955	1,881,287	-371,332
1	Argentina	21,224	29,610	-8,386

2	Brazil	55,099	111,960	-56,861
3	China	243,700	446,659	-202,959
4	Ecuador	1,498	6,356	-4,858
5	Indonesia	21,945	45,326	-23,381
6	Kenya	2,865	3,857	-993
7	Malaysia	25,645	37,184	-11,539
8	Nigeria	5,274	29,506	-24,233
9	**Singapore**	**243,034**	**192,935**	**50,099**
10	Thailand	30,809	60,583	-29,774
11	Turkey	34,766	43,207	-8,441
	Others (39)	824,096	874,102	-50,006
Non-JSI Members-Developing Countries		279,001	522,719	-243,718
1	Bangladesh	3,339	15,172	-11,833
2	Cambodia	1,186	2,806	-1,620
3	Egypt	11,388	20,981	-9,593
4	Ghana	6,359	9,017	-2,658
5	India	116,314	142,463	-26,149
6	Jamaica	609	3,404	-2,795
7	Pakistan	4,623	15,527	-10,904
8	South Africa	12,283	24,792	-12,509
9	Sri Lanka	4,035	6,571	-2,536
10	Tanzania	1,748	2,190	-442
11	Uganda	557	2,296	-1,739
12	Venezuela,Bolivarian Republic of	2,906	13,167	-10,261
13	Viet Nam	12,072	23,366	-11,294
14	Zambia	432	2,539	-2,107
	Others (100)	101,150	238,428	-137,277

Source: Trade in Services by mode of supply (TiSMOS), WTO
*Identified Services include: 1. Trade-related services (Distribution) 2. Transport 3. Financial services. 4. Telecommunications, computer, information and audiovisual services. 5. Advertising, market research, public opinion polling. 6. Technical, trade-related, and other business services.

8. Market Access-Goods

Based on the proposals of Canada, EU and the US, the digital rules that are being negotiated in the JSI also aim at improving market access for the big-tech firms and producers of digital products. According to the EU's proposal, members of JSI will join the Information Technology Agreement (ITA) and its Expansion. While Canada proposes that within three years of the date of entry into force of this Agreement, the members of the JSI shall be a party to the ITA and ITA-Expansion.

ITA was signed in 1996 where the signatories agreed to eliminate custom duties and other duties and charges on selected IT products on MFN basis. In 2019, there were 52 participants of ITA (EU as one member). The ITA products covered broadly many high technology IT physical products including computers, telecom equipment, semiconductors, semiconductor manufacturing and testing equipment, software and scientific instruments and a significant number of other products. Expanding the scope of ITA, in 2015, at the Nairobi Ministerial Conference, some of the WTO members concluded the expansion of the ITA (ITA-Expansion), which was signed by 25 participants, including US, EU and China. In 2019, number of ITA-Expansion participants were 27, with inclusion of Macau and Georgia.

While ITA focuses on the physical IT products and the traditional carrier media of the software, ITA-Expansion covers all electronic transmissions like software and digital content; digitized and digitizable products like photographic or cinematographic products, touch screens, GPS navigation equipment, video game consoles, portable interactive electronic education devices, etc., along with physical IT products. These products and software are now being extensively used in digital technologies.

It must be noted that out of 126 countries, 114 developing countries are net importers of ITA products, and 106 countries are net importers of ITA-Expansion products, with China; Hong Kong, China; Korea, Rep.; Singapore; Germany; Japan and USA being the top seven exporters in the world with a share of more than 80% of total exports. Binding commitments on duty-free imports of ITA and ITA-Expansion products mainly benefit the exporters of these products as the importers can anyway allow duty-free imports of the ITA products they want without taking any binding commitments.

8.1 Adverse Impact of ITA and ITA-Expansion on Domestic Industry

Many developing countries which have signed ITA and ITA-Expansion have reported a fall in their trade competitiveness, which has not only resulted in decline in their exports but has also led to adverse impact on their domestic production of ITA products as well as inputs that go into the production of these products, leading to an overall fall in their domestic output and employment[23]. According to India's experience of ITA, the Department of Electronics and IT (DeitY) reported that the agreement has proved to be a barrier for the domestic electronic manufacturing sector's growth by decreasing investments in this sector. It was also pointed out that there were rising security implications of IT goods being imported in the country under ITA[24].

Some of the empirical studies which have estimated the impact of signing ITA-1 on India include Kallummal (2012)[25], Joseph (2013)[26], and Ernst (2013)[27]. All the three studies show that in India ITA-1 did not deliver the above argued benefits, in fact India experienced many losses apart from the lost tariff revenues. According to Kallummal (2012) signing ITA increased India's dependence on imports of these products providing very limited market access in developed and other developing countries, consequently it led to a decline in local content resulting in an adverse impact on output and employment generation. Further, the study provides empirical evidence that signing of ITA did not increase India's competitiveness in ITA products and did not contribute to the success of IT enabled services, which were recording unprecedented growth even prior to signing of the agreement.

The results of this study are corroborated by Joseph (2013) which provides empirical evidence of the lack of growth-augmenting impact of ITA-1. It further establishes that except for China, none of the Asian countries (e.g. Malaysia, Thailand, Indonesia) were able to increase their share in electronic production networks. It also shows that ITA enabled multinationals from East and West to become "price-makers" challenging the price lowering impact of ITA. According to the study, India also experienced a drastic fall in export growth in almost all ITA products in the post ITA period, while global exports of ITA products further concentrated increasing the share of top four exporters.

[23] For a detailed review of these studies see Banga (2020) http://wtocentre.iift.ac.in/workingpaper/WP%20Implications%20of%20signing%20ITAI%20and%20ITA%20Expansion.pdf

[24] https://economictimes.indiatimes.com/industry/cons-products/electronics/ita-an-obstacle-for-domestic-electronic-manufacturing-government/articleshow/46784507.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

[25] Kallummal, M. (April 2012). Process of trade liberalization under the Information Technology Agreement (ITA): The Indian experience (Working Paper). New Delhi: Centre for WTO Studies, IIFT.

[26] K.L.Joseph (2013), Information Technology Agreement of WTO: Call for a Revisit, Working Paper, Ministry of Commerce Chair, Centre for Development Studies

[27] Ernst, Dieter, The Information Technology Agreement, Manufacturing and Innovation – China's and India's Contrasting Experiences (February 23, 2016). East West Center Workshop on Mega-Regionalism - New Challenges for Trade and Innovation. Available at SSRN: https://ssrn.com/abstract=2737082 or http://dx.doi.org/10.2139/ssrn.273702

Further, countries which joined ITA and ITA-Expansion have lost tariff revenues from the growing imports of IT products. Empirical studies have also shown that while developed countries are able to recover their lost tariff revenues due trade liberalization through internal taxes, developing countries are not able to do so [28].

8.2 Unknown Future Technologies are Included.

It is extremely important to note that that ITA-Expansion includes many other products that are not covered in the ICT goods definition, for example, medical appliances and instruments such as magnetic resonance imaging (MRI) machines. In fact, according to UNCTAD (2015)[29] only about a quarter of the ITA and ITA-Expansion product codes are also defined as ICT goods.

ITA-Expansion list also includes some of the identified digitizable products where cross-border trade is expected to rise considerably with progressing digitalization. This includes digitizable products in chapter 85 like smart cards; storage devices; video games, etc. But more importantly, ITA -2 also covers new age products which do not yet have six-digit HS classification like Multi-component integrated circuits (MCOs,); Light-Emitting Diode (LED) Backlights modules; Touch-Sensitive Data Input Devices (so-called touch screens) ; Printed matter which grants the right to access, install, reproduce or otherwise use software (including games), data, internet content (including in-game or in-application content) or services, or telecommunications services (including mobile services); Portable interactive electronic education devices; etc. All these products are being increasingly used in the digital technologies. According to USITC, demand for MCOs is going to be high in coming years and US headquartered companies like Intel, Texas, Broadcom, etc. are among the leaders in this market[30].

JSI Agreement will force the developing member countries to join ITA and ITA Expansion which can lead to increased imports, tariff revenue loss, decline in domestic production of digital IT products and inputs used in manufacturing of IT products and adversely impact the growth of the infant digital industry in the developing countries. Developing countries will also commit to duty free imports of future digital products used in digital technologies.

9. Conclusions and Way Forward: Need for Policy and Regulatory Space

Covid-19 pandemic has revealed the impact of the digital divide on widening global inequalities. The profits of big digital players based in developed countries have skyrocketed during the pandemic while many SMEs in the developing countries have been forced to shut businesses creating massive unemployment and pushing millions of people into extreme poverty. In contrast to the hyper- connected developed world, many developing countries are still struggling to connect their population to the internet and build their ICT infrastructure. While 87 per cent of households in the developed countries have access to internet at home, only 46 per cent have internet access at home in developing countries and only 17 per cent in Africa.

Despite the existing and rapidly growing digital divide, the 60 JSI members are negotiating digital rules which go much beyond e-commerce. According to the Annex of the Consolidated Text, 'Digital Trade/e-commerce' means production, distribution, marketing, sale or delivery of goods and services by electronic means. 'Measure' includes any law, regulation, procedure, requirement or practice. The agreement, if implemented, will apply to measures adopted or maintained by a member affecting trade by electronic means and will therefore have a very broad scope covering almost all actions of the governments in the digital economy.

[28] Devika Dutt, Kevin P. Gallagher and Rachel D. Thrasher (2020), Trade Liberalization and Fiscal Stability in Developing Countries: Does the Evidence Tell Us?, Policy Insights, Global Development Policy Centre, Boston University,USA.

[29] https://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d05_en.pdf

[30] Platzer, Michaela D. & Sargent, John F., Jr. U.S. Semiconductor Manufacturing: Industry Trends, Global Competition, Federal Policy, report, June 27, 2016; Washington D.C.. (digital.library.unt.edu/ark:/67531/metadc855842/m1/1/: accessed January 21, 2019), University of North Texas Libraries, Digital Library, digital.library.unt.edu; crediting UNT Libraries Government Documents Department.

The digital rules being negotiated aim at mandatory legal frameworks for electronic transactions, free flow of cross-border data, restrictions on data localization, no source code disclosure, no customs duties on electronic transmissions, mandatory membership of Information Technology Agreement (ITA) and ITA Expansion and mandatory commitments on national treatment and market access in Mode 1, Mode 2 and Mode 3 in the identified services in GATS schedules. There are no commitments being negotiated for Mode 4 which is an offensive interest of developing countries. Further, there are also no binding commitments being negotiated on building capacity of the developing members to enable them to fulfil their commitments which may entail high cost of compliance.

Developing countries need at least the same policy and regulatory space to build their digital infrastructure and their digital economies as was available to the developed countries at the beginning of their digital advancement. At that time the developed countries enjoyed the flexibilities for developing their data infrastructure, provide incentives to their digital start-ups, locally store and process their data as well as provide incentives to their firms to build data centers.

The rise of China from a manufacturing assembly hub to a digital leader was to a large extent aided by policies adopted by the Government. This can provide important lessons for other developing countries in terms of digital policies which can help them develop their digital economy and digital infrastructure[31]. China has put in place a legal system for its data protection, including the *Criminal Law*, *General Principles of Civil Law*, *Cyber Security Law*, *E-commerce Law*, *Law on the Protection of Consumer Rights and Interests*, and *Regulations on the Protection of Personal Information of Telecommunications and Internet Users*. To maintain data security, the *Cyber Security Law* stipulates that the personal information and 'important data' collected and generated in domestic operations of critical information infrastructure operators shall be stored within China's territory**,** and where such data are transferred across borders for business needs, security assessments shall be conducted.

Developing countries will need to put in place policies, regulations, and measures in line their current capacities and development trajectories. For this, retaining policy and regulatory space becomes of the utmost important. The need for owning and regulating their own data is of particular importance for establishing the pro-developmental ambitions of their governments. For example, the data collected by Uber in many developing countries has increased Uber's efficiency to an extent that no domestic taxi firm can compete with Uber without additional policy support from the Government. Indeed, if the Government wants to build smart cities, it will need to buy its own national traffic data from Uber.

To give another example, the exponential growth of digital technologies like 3D printing is leading to mass production of customized products. This will require large scale data on consumer tastes and preferences. If developing countries want to build competitiveness of their domestic firms by providing them access to national consumers' data then they will need to adopt appropriate policies to build their digital infrastructure and digital capacities to collect, store and process their data. However, if they accept the JSI digital rules, shaped mainly by the developed world, they will not be able to prioritize their domestic firms over foreign firms and neither will they be able to provide a level playing field to their SMEs. This can severely limit the development-oriented role of the governments in the digital economy.

Digital technologies, which run on data much as many analogue technologies have depended on fossil fuels, are becoming predominant in shaping economic transformation in the 21st century world. If digital rules on free flow of data and no restrictions on data localization are accepted, it will further strengthen the big tech firms and digital platforms that currently dominated the digital space, reinforcing their first-mover advantages over developing countries seeking entry into this space. Not only will the firms of developing countries lose their existing trade competitiveness in the global markets but will face the danger of losing share in their domestic markets as well.

It needs to be reiterated that the outcome of the JSI negotiations on digital rules have no legal bearing in the WTO as these rules are not mandated for negotiations there. These digital rules are being negotiated outside the WTO

[31] https://unctad.org/system/files/official-document/BRI-Project_RP3_en.pdf; https://unctad.org/system/files/official-document/BRI-Project_RP2_en.pdf

between some developed and developing countries. However, there may be efforts to parachute the outcome of these negotiations into the WTO in the Ministerial meetings, but this will be extremely detrimental to the interests of the developing countries, especially with respect to their digital industrialization efforts. These rules come with high economic and fiscal costs for developing countries. Not only will the developing countries lose substantial tariff revenues but will also have to bear high costs of compliance of these rules in the face of weakening trade competitiveness in their traditional export sectors due to rising digitalization.

There remains a large unfinished agenda mandated for negotiations in the WTO under the Doha Development Agenda which requires prioritization by the Members of the WTO. Any discussions around E-Commerce in the WTO are mandated to be undertaken in the Work Program on E-Commerce. These discussions under the Work Program remain useful in raising the awareness of the development implications of the digital rules. Developing countries would greatly benefit by discussions within the Work Program on issues like bridging the digital divide, facilitating digital technology transfers, developing digital infrastructure, building digital skills, etc. rather than from negotiating on the digital rules outside the WTO.

ANNEX Table 1: Data Centre Incentives given by States in the US

	State	Incentives	Beneficiary
1	Alabama	2012 law that exempts those businesses from state and local sales and property taxes. The law offers up to 30 years of tax breaks for data centers investing $400 million and creating at least 20 jobs with an average annual compensation of $40,000	Google is projected to get $81 million of incentives from the state, plus additional local incentives, for a $600 million facility at the site of a former coal-fired power plant.
2	Arizona	sales tax exemptions for data centers under a 2013 law. Companies have claimed at least $5.5 million in tax breaks. The tax breaks can last 10 to 20 years.	At least 10 companies, including eBay and GoDaddy
3	Georgia	offers a sales tax exemption for equipment in data centers investing at least $15 million annually,	No company identified
4	Indiana	Data centers investing at least $10 million can receive local personal property tax exemptions on their equipment under a 2009 law. Some data centers also have received state tax breaks.	$7.5 million of incentives for ExactTarget
5	Iowa	Iowa offers sales tax breaks to data centers investing as little as $1 million, with larger incentives for projects topping $200 million. It also has no property tax on equipment	Iowa has approved $41 million in incentives for Microsoft and $38 million for Google, which have each invested about $2 billion. Facebook was approved for $18 million in incentives for its $300 million data center
6	Kentucky	A 2010 Kentucky law offers a sales tax refund for computer system equipment for data centers investing at least $100 million,	Several smaller data centers have received aid through the state's general incentive programs
7	Maryland	Conditional Loan	a $60 million investment by T. Rowe Price, which was authorized for a $300,000 conditional loan.
8	Massachusetts	Grant	provided a $25 million grant and $14.5 million in tax credits for the development of the Massachusetts Green High-Performance Computing Center, a data center run as a collaboration among five universities.
9	Michigan	Michigan lists about $7 million in incentives going to data centers through its general economic-development programs.	$4.8 million for an expansion of NetEnrich in Ann Arbor

10	Minnesota	Minnesota first enacted a data-center tax break in 2012 and has already expanded it. Data centers of at least 25,000 square feet costing at least $30 million can get a 20-year sales tax exemption on equipment and energy and a permanent property tax exemption on equipment. Ten facilities have been certified for the tax break with a projected investment of $800 million	No beneficiaries reveled
11	Missouri	Offers sales tax exemptions to new data centers investing at least $25 million and employing at least 10 people in well-paying jobs. Existing data centers can qualify by investing at least $5 million and adding five well-paying jobs.	Bluebird Network
12	Nebraska	Under a 2012 law, Nebraska offers several tiers of sales and property tax breaks to data centers, starting with those that invest at least $3 million and employ at least 30 people, or invest at least $37 million while holding employment steady	Yahoo, which received at least $13 million of state incentives and has expanded its operations beyond just a data center
13	Nevada	A law passed expanded Nevada's sales and property tax exemptions for data centers.	the state approved an estimated $229 million of tax breaks for Switch, also approved $55 million in incentives for Apple for a $400 million cloud-computing data center in Reno.
14	New York	2000 provides a sales tax exemption for equipment used by Internet data centers,	$40 million in state and local aid for Yahoo to undertake a $131 million data center expansion in the western New York town of Lockport.
15	North Carolina	State law provides a sales tax exemption for equipment and electricity used by data centers that invest at least $150 million in poorer counties or $225 million in other counties	$46 million savings over a decade if Apple invested $1 billion in its data center.
16	Ohio	Since enacting a sales tax break in 2011 for data centers that invest at least $100 million, Ohio has since lowered the required payroll threshold from $5 million annually to $1.5 million.	Amazon subsidiary Vadata, which is projected to get $81 million in state incentives plus nearly $20 million in local incentives to invest $1.1 billion in three data centers near Columbus.
17	South Carolina	A law offers a sales tax exemption on computer equipment and electricity used in data centers that invest at least $50 million and employ at least 25 people in well-paying jobs.	Google has announced investments of $1.2 billion in its South Carolina data centers.

18	Texas	A 2013 law offers a sales tax exemption on equipment and electricity for data centers that contain at least 100,000 square feet, invest at least $200 million and employ at least 20 people at above-average wages.	five data centers have qualified, including ones run by Microsoft, LinkedIn and State Farm
19	Virginia	Virginia waived an estimated $48 million in state and local sales tax revenue for data centers. The state lists more than 60 data centers eligible for the sales tax break with a combined investment of $5.8 billion.	Companies benefiting include Facebook, Microsoft, Ticketmaster, Bank of America, Capital One, Visa and the Amazon subsidiary Vadata.
20	Washington	has enacted a sales tax exemption and updated it several times	Among the companies approved for the tax break are Microsoft, Dell and Costco
21	West Virginia	Data centers can receive both a sales tax exemption and a property tax break on equipment	29 entities received the property tax break but described the impact on revenue as "marginal" — about $170,000 per year
22	Wyoming	A 2011 law offers data centers that invest at least $5 million a sales tax exemption on computer equipment. Data centers that invest at least $50 million also can get a sales tax break on power supplies and cooling equipment.	The biggest beneficiary has been Microsoft, which is projected to receive $17 million in incentives while investing $355 million in its data center.

Source: https://www.datacenterdynamics.com/en/analysis/us-tax-breaks-state-by-state/.

ANNEX Table 2: Exports, Imports and Balance of Trade via Mode1, Mode 2 and Mode 3 of Identified Services in JSI Proposals for Increasing Market Access in Services (2017)

		Exports in USD Million	Imports in USD Million	Balance of Trade n USD Million
JSI Developed Countries		5,063,775	4,362,552	701,223
1	EU (27)	2,618,765	2,355,723	263,042
2	Australia	110,548	79,763	30,785
3	Canada	101,624	160,581	-58,958
4	Japan	476,826	199,637	277,189
5	New Zealand	14,059	18,417	-4,359
6	Norway	53,755	57,222	-3,467
7	Switzerland	374,649	144,713	229,936
8	United Kingdom	265,064	461,138	-196,074
9	United States of America	1,048,485	885,357	163,128
JSI Developing Countries		1,509,955	1,881,287	-371,332
1	Albania	599	1,313	-714
2	Argentina	21,224	29,610	-8,386
3	Bahrain, Kingdom of	2,793	3,663	-870
4	Benin	243	857	-613
5	Brazil	55,099	111,960	-56,861
6	Brunei Darussalam	611	1,207	-596

7	Burkina Faso	339	1,284	-946
8	Cameroon	1,398	2,817	-1,419
9	Chile	11,737	23,138	-11,401
10	China	243,700	446,659	-202,959
11	Chinese Taipei	79,055	51,759	27,296
12	Colombia	6,277	16,230	-9,953
13	Costa Rica	2,981	5,593	-2,612
14	Côte d'Ivoire	889	3,593	-2,705
15	Ecuador	1,498	6,356	-4,858
16	El Salvador	1,111	3,036	-1,925
17	Georgia	1,330	2,385	-1,055
18	Guatemala	1,512	7,086	-5,574
19	Honduras	802	2,906	-2,104
20	Hong Kong, China	168,815	189,960	-21,145
21	Iceland	4,821	2,969	1,852
22	Indonesia	21,945	45,326	-23,381
23	Israel	80,804	28,181	52,623
24	Kazakhstan	6,641	13,549	-6,908
25	Kenya	2,865	3,857	-993
26	Korea, Republic of	152,341	132,665	19,676
27	Kuwait, the State of	9,891	13,237	-3,346
28	Lao People's Democratic	304	705	-401
29	Libya	825	2,503	-1,678
30	Malaysia	25,645	37,184	-11,539
31	Mexico	21,232	73,207	-51,975
32	Moldova, Republic of	745	1,278	-532
33	Mongolia	770	1,815	-1,044
34	Montenegro	467	976	-509
35	Myanmar	1,603	4,720	-3,116
36	Nicaragua	424	1,673	-1,249
37	Nigeria	5,274	29,506	-24,233
38	Panama	11,189	11,958	-769
39	Paraguay	926	2,346	-1,420
40	Peru	5,179	13,367	-8,188
41	Philippines	25,665	22,123	3,542
42	Qatar	21,132	25,212	-4,080
43	Russian Federation	87,515	90,679	-3,164
44	Saudi Arabia, Kingdom of	21,897	54,541	-32,644
45	Singapore	243,034	192,935	50,099
46	Thailand	30,809	60,583	-29,774
47	Turkey	34,766	43,207	-8,441
48	Ukraine	11,723	10,119	1,603
49	United Arab Emirates	74,772	44,795	29,977
50	Uruguay	2,736	4,655	-1,919
Non-JSI Developing Countries		279,001	522,719	-243,718
1	Afghanistan	174	2,103	-1,928
2	Algeria	4,808	17,078	-12,270

3	Angola	1,589	12,379	-10,790
4	Anguilla	48	142	-94
5	Antigua and Barbuda	214	619	-405
6	Armenia	602	1,227	-625
7	Aruba (the Netherlands with	400	1,003	-603
8	Azerbaijan	2,164	4,364	-2,200
9	Bahamas	252	4,155	-3,903
10	Bangladesh	3,339	15,172	-11,833
11	Barbados	168	1,071	-904
12	Belarus	6,732	6,999	-267
13	Belize	142	460	-318
14	Bermuda	481	5,184	-4,703
15	Bhutan	74	280	-207
16	Bolivia, Plurinational State of	926	3,220	-2,294
17	Bosnia and Herzegovina	852	1,554	-702
18	Botswana	495	1,396	-901
19	Burundi	16	239	-223
20	Cabo Verde	155	371	-216
21	Cambodia	1,186	2,806	-1,620
22	Cayman Islands	1,864	1,591	274
23	Central African Republic	21	189	-169
24	Chad	128	2,259	-2,131
25	Comoros	28	125	-97
26	Congo	291	2,070	-1,779
27	Cuba	3,561	1,781	1,780
28	Curaçao	403	1,065	-663
29	Democratic Republic of the	572	2,802	-2,230
30	Djibouti	169	212	-44
31	Dominica	25	205	-180
32	Dominican Republic	1,572	5,343	-3,771
33	Egypt	11,388	20,981	-9,593
34	Equatorial Guinea	270	1,614	-1,344
35	Eritrea	131	438	-307
36	Eswatini	118	334	-216
37	Ethiopia	2,946	4,256	-1,310
38	Faeroe Islands	239	208	31
39	Fiji	489	875	-385
40	French Polynesia	375	296	79
41	Gabon	394	1,516	-1,122
42	Ghana	6,359	9,017	-2,658
43	Grenada	39	370	-331
44	Guinea	205	992	-787
45	Guinea-Bissau	26	133	-107
46	Guyana	119	745	-626
47	Haiti	68	1,648	-1,580
48	India	116,314	142,463	-26,149
49	Iran	11,230	20,027	-8,797

50	Iraq	5,039	13,138	-8,099
51	Jamaica	609	3,404	-2,795
52	Jordan	2,093	6,089	-3,996
53	Kiribati	4	42	-38
54	Korea, Dem. People's Rep. of	0	0	0
55	Kyrgyz Republic	381	967	-586
56	Lebanese Republic	6,620	9,573	-2,953
57	Lesotho	49	299	-250
58	Liberia	14	216	-202
59	Macao, China	3,382	4,886	-1,503
60	Madagascar	633	1,312	-679
61	Malawi	128	486	-357
62	Maldives	286	914	-628
63	Mali	354	1,433	-1,078
64	Mauritania	161	1,051	-890
65	Mauritius	1,545	2,395	-850
66	Montserrat	4	29	-25
67	Morocco	7,364	11,309	-3,945
68	Mozambique	675	2,982	-2,307
69	Namibia	365	1,223	-858
70	Nepal	806	1,772	-967
71	Netherlands Antilles	0	0	0
72	New Caledonia	266	1,007	-741
73	Niger	164	928	-764
74	Oman	4,452	11,382	-6,930
75	Pakistan	4,623	15,527	-10,904
76	Papua New Guinea	628	1,586	-957
77	Rwanda	283	758	-475
78	Saint Kitts and Nevis	61	357	-296
79	Saint Lucia	38	617	-578
80	Saint Vincent and the	29	249	-220
81	Samoa	58	175	-118
82	Sao Tomé and Principe	3	76	-73
83	Senegal	655	2,189	-1,535
84	Serbia	4,441	7,637	-3,196
85	Seychelles	566	839	-273
86	Sierra Leone	82	522	-440
87	Sint Maarten	147	183	-36
88	Solomon Islands	84	193	-109
89	Somalia	219	1,276	-1,057
90	South Africa	12,283	24,792	-12,509
91	Sri Lanka	4,035	6,571	-2,536
92	Sudan	1,112	6,326	-5,214
93	Suriname	173	552	-379
94	Syrian Arab Republic	447	1,800	-1,352
95	Tajikistan	228	685	-456
96	Tanzania	1,748	2,190	-442

97	The former Yugoslav Republic	995	1,665	-670
98	The Gambia	37	160	-122
99	Timor-Leste	5	114	-109
100	Togo	353	558	-205
101	Tonga	28	85	-57
102	Trinidad and Tobago	814	5,724	-4,910
103	Tunisia	2,214	4,418	-2,204
104	Turkmenistan	4,049	4,985	-936
105	Turks and Caicos Islands	41	60	-19
106	Tuvalu	1	7	-6
107	Uganda	557	2,296	-1,739
108	Uzbekistan	2,410	2,333	77
109	Vanuatu	69	226	-157
110	Venezuela, Bolivarian Republic	2,906	13,167	-10,261
111	Viet Nam	12,072	23,366	-11,294
112	Yemen	143	2,275	-2,132
113	Zambia	432	2,539	-2,107
114	Zimbabwe	375	1,429	-1,054

* * *