

## *Trade in Services: A Holistic Solution to New-Found Issues in Trade Law?*

### FOREWORD

*Trade, Law & Development: A Year in Review*

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Andreas Maurer, *Overview on available trade statistics and tools to assess Trade in Services*  
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## OVERVIEW ON AVAILABLE TRADE STATISTICS AND TOOLS TO ASSESS TRADE IN SERVICES

**ANDREAS MAURER\***

*Tradability of services increases and transforms business processes around the world. This article illustrates the statistical tools that are available today to analyse this development. It describes global datasets on trade in services drawn from official statistics, shows experimental datasets on trade in services by partner or by mode of supply, and sketches out indicators that depict deviations from global trends. Possible statistical frames to measure new phenomena such as digital trade or sources for analysing regulations are described as well as research issues to help improve trade in services statistics.*

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### I. INTRODUCTION

The rise of the services economy around the world represents a profound transformation that offers significant opportunities for countries' sustainable development strategies. Services are increasingly tradable as a result of technological advances and now represent the fastest growing component of world trade, as well as account for the largest share of global foreign direct investment.

Services trade is important from a development perspective for various reasons. A range of services - from finance to telecommunications or logistics - are essential to facilitate all other economic activities and are therefore critical to economies' overall competitiveness and growth. Access to affordable and efficient services, through trade and investment, benefits all other economic sectors and improves export performance in manufacturing and agriculture.<sup>1</sup>

This quote highlights that services drive transformation around the world, however, when the press speaks of trade, it refers mostly to trade in goods. This is largely because trade disputes focus more on goods and the complexity of trade in services is far greater than that of trade in goods.<sup>2</sup>

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<sup>1</sup>Amina Mohamed, *Why Trade in Services Matters for Development and Inclusiveness in Africa*, INTER PRESS SERVICE (Feb. 24, 2020), <https://www.ipsnews.net/2020/02/trade-services-matters-development-inclusiveness-africa/>.

<sup>2</sup>WTO Secretariat, *World Trade Report 2019 on The Future of Services Trade*, 23 (Oct. 9, 2019), [https://www.wto.org/english/res\\_e/publications\\_e/world\\_trade\\_report18\\_e.pdf](https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf).

The lack of statistical information also does contribute to this phenomenon. Statistics for trade in goods have existed for a long time. These statistics are captured at the point at which goods cross the borders of countries (at Customs checkpoints) using the Harmonised System, which can classify over five thousand distinct goods.<sup>3</sup> Trade in services data between residents and non-residents stems from a country's balance of payments and collection of statistics for the same has only recently been expanded to more than hundred categories. But even with this significant increase of the level of detail, the question remains whether these statistics allow monitoring trade in services (being heterogenous in nature) as a driver for economic development? Why is trade in services not properly captured?

One reason is that services are supplied through different modes:

The definition of modes of supply is provided by the General Agreement on Trade in Services (GATS). It is used in most bilateral and regional trade agreements. The four ways of trading services (or "modes") are:

- **Cross border supply (mode 1):** services supplied from the territory of one country into the territory of any another country. This implies that neither a consumer nor a producer has to move and only the service itself crosses the border. Examples cover services provided by phone, fax, or electronic means, such as medical diagnosis, legal advice, financial services, etc.
- **Consumption abroad (mode 2):** services supplied in the territory of one country to the service consumer of any other country. For example, persons who travel to another country to consume services locally (visits to museums or theatres, visit to doctors, language courses). This covers also cases where the services are related to the property of the consumer while abroad (e.g., ship repair abroad).
- **Commercial presence (mode 3):** services supplied by any type of business or professional establishment of a country, through commercial presence in the territory of any another country. It is often useful for the supplier company to establish closer contact at various stages of the delivery (production, distribution, marketing, sale and delivery, after-

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<sup>3</sup>WCO, *Harmonised System Database*, [http://harmonizedsystem.wcoomdpublications.org/?a\\_DisplayLanguage=en](http://harmonizedsystem.wcoomdpublications.org/?a_DisplayLanguage=en).

sales services), by for example establishing an affiliate in a foreign country to serve the market locally. For instance, a foreign bank setting up operations in another country.

- **Presence of natural persons (mode 4):** services supplied by individuals of a country through temporary presence in the territory of another country. These services include, for example, a computer services company sending its employee to a customer of another country or a self-employed lawyer delivering legal advice to foreign clients.<sup>4</sup>

This international supply of services as defined in the GATS is captured through two different statistical frameworks. The balance of payments (BoP) captures international transactions that include – services trade through modes 1, 2 and 4 (trade between residents and non-residents) while foreign affiliates statistics (FATS) are used to capture services trade through mode 3 (supply of services through affiliates established abroad).<sup>5</sup> Trade negotiations depend on “participants having access to a broad information base: information about the nature and extent of trade in services; the nature and extent of existing and potential barriers to trade; and the relative size and importance of these barriers...”<sup>6</sup>

Since the inception of GATS and its definition of four modes of supply of services, the World Trade Organization (WTO) Secretariat has worked with other agencies on improving the information base. First, it focussed on the development of concepts and definitions which resulted in the Manual on Statistics of International Trade in Services (MSITS). Its first version was released in 2002 and was revised and extended, especially for the conceptualisation of mode 4, in 2010 (MSITS 2010), followed by a Compilers Guide in 2014. More recently, the WTO Secretariat has developed consistent and experimental datasets on interesting analytical aspects by leveraging resources with other stakeholders such as international organisations, data compilers and academics.<sup>7</sup>

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<sup>4</sup>Steen Wettstein et al., *A Global Trade in Services Data Set by Sector and by Mode of Supply (TISMOS)*, WORLD TRADE ORGANIZATION (July 31, 2019), [https://www.wto.org/english/res\\_e/statis\\_e/daily\\_update\\_e/Tismos\\_methodology.pdf](https://www.wto.org/english/res_e/statis_e/daily_update_e/Tismos_methodology.pdf) [hereinafter Steen Wettstein et al.].

<sup>5</sup>*Statistics on the International Supply of Services by Mode*, in MANUAL ON STATISTICS OF INTERNATIONAL TRADE IN SERVICES 95, 103 (2010).

<sup>6</sup>Andrew T.F. Lang, *Legal Regimes and Regimes of Knowledge: Governing Global Services Trade*, LSE LAW SCHOOL, SOCIETY AND ECONOMY, WORKING PAPER NO. 15, (2009), [http://eprints.lse.ac.uk/24558/1/WPS2009-15\\_Lang.pdf](http://eprints.lse.ac.uk/24558/1/WPS2009-15_Lang.pdf). [hereinafter Lang].

<sup>7</sup>*Statistics on Trade in Commercial Services*, WORLD TRADE ORGANIZATION, [https://www.wto.org/english/res\\_e/statis\\_e/tradeserv\\_stat\\_e.htm](https://www.wto.org/english/res_e/statis_e/tradeserv_stat_e.htm).

Though 2020 marks the twenty fifth anniversary of GATS, the information base is still not complete. The WTO regularly releases its BoP – related trade in services statistics on a quarterly and annual basis for all countries (and for some forty countries monthly). Information on foreign affiliates exists mostly in advanced economies and selected economies in the developing world (e.g. Zambia). The WTO also compiles this information and publishes official statistics of the available data of economies’ sales/output of services industries, employment, and the number of enterprises. However, complete bilateral BoP numbers as well as trade in services by mode of supply for all individual world economies only exist on an experimental basis.<sup>8</sup>

The WTO's Integrated Trade Intelligence Portal (I-TIP) database,<sup>9</sup> which includes the GATS schedules of WTO Members, regional trade agreement commitments, applied regimes and country-based statistics, is available for all WTO members, except for regional trade agreements and applied regimes which are only available for selected economies. Through its work programme with the World Bank, and in cooperation with the Organization for Economic Co-operation and Development (OECD), I-TIP was recently extended to include a new Services Trade Policy database which now includes services trade restrictions indices and an accompanying regulatory database for about sixty-eight economies and is currently being expanded.<sup>10</sup>

## II. HOW TO ASSESS TRADE IN SERVICES - WHAT TOOLS ARE AVAILABLE?

### A. *Services value added in national accounts*

The World Bank's Development Indicator shows that the services value added in the gross domestic product (GDP) reached nearly 70% for high-income countries in 2017, middle-income countries stood at approximately 54% (2018) and even low-income countries approached the 40% mark.<sup>11</sup>

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<sup>8</sup>A worldwide experimental FATS dataset for 200 economies and 13 service sectors for the period 2005-17 has been built along the trade in services by mode of supply experimental dataset.

<sup>9</sup>THE INTEGRATED TRADE INTELLIGENCE PORTAL, [https://www.wto.org/english/res\\_e/statis\\_e/itip\\_e.htm](https://www.wto.org/english/res_e/statis_e/itip_e.htm) (last visited Apr. 28, 2020).

<sup>10</sup>Ingo Borchert et al., *Applied Services Trade Policy: A Guide to the Services Trade Policy Database and the Services Trade Restrictions Index*, WTO, STAFF WORKING PAPER NO. ERSD-2019-14 (Dec. 12 2019), [https://www.wto.org/english/res\\_e/reser\\_e/ersd201914\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd201914_e.pdf).

<sup>11</sup>World Bank National Accounts Data & OECD National Accounts Data Files, *Services Value Added (% of the GDP)*, THE WORLD BANK, <https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS>.

As new technologies increase the tradability of services, these shares are likely to increase. Analysing only resident to non-resident trade, i.e. BOP trade flows, it is estimated that by 2040, world trade in services could account for nearly one-third of the world trade (in gross terms).<sup>12</sup>

*B. WTO's Data Hub: From Rules to Statistics*

The WTO offers various databases that allow the analysis of trade in services by service product, direction of supply (origin and destination), and mode of supply.

1. I-TIP Services – in cooperation with World Bank<sup>13</sup>

The I-TIP consists of information on members' commitments under WTO's GATS, services commitments in regional trade agreements, applied measures, and statistics such as BOP data, statistics on the activity of foreign affiliates (FATS), sectoral value added and employment as well as other quantitative indicators on specific service sectors. It is a joint initiative of the World Bank and WTO.<sup>14</sup>

2. Annual, quarterly, and monthly trade in services statistics by sector in cooperation with the United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre (ITC).

These data sets are based on data reported to the International Monetary Fund (IMF), Eurostat, OECD and national sources and they refer to trade in commercial services between residents and non-residents (modes 1, 2 and 4). In addition to the data from “data-collecting agencies”, the data are completed by adding estimations and adjustments where necessary to derive regional and world totals.

The annual dataset on the Balance of Payments and International Investment Position Manual (BPM6)<sup>15</sup> basis covers the period from 2005 onwards and includes exports (credits) and imports (debits) of the total commercial services broken down by detailed sector and by partner country when available. As mentioned, for missing data, the organisations agreed upon joint estimation methodologies. Annual trade in commercial services data are jointly released in

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<sup>12</sup>*Supra* note 2 at 14.

<sup>13</sup>Lang, *supra* note 6.

<sup>14</sup>This database has recently been supplemented with a “Services Trade Policy database”, and the country coverage is currently being significantly expanded.

<sup>15</sup>INT'L MONETARY FUND, *Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual (BPM6)*, (6<sup>th</sup> ed., 2009), <https://www.imf.org/external/pubs/ft/bop/2007/pdf/bpm6.pdf>.

May every year. There also exists an earlier dataset in the BPM5 with 2013 as the latest year, which goes back to 1980.

Quarterly data are made available for about 150 economies, for main service sectors, which are, goods-related services, transportation, travel, and other commercial services. They are updated in January, April, July and October each year. For some forty selected economies, the WTO also disseminates monthly trade data on total commercial services. These are updated around the 15<sup>th</sup> of each month.

The WTO Data portal (including APIs) allows users to download the main trade datasets in their entirety in compressed csv (comma-separated values) format, including reported FATS. The bulk download facility file contains additional datasets by partner and mode of supply.

### 3. Balanced Trade in Services Statistics (BaTis) – in cooperation with OECD<sup>16</sup>

BaTis covers 191 economies, 193 trading partners and eleven main BPM5 categories.<sup>17</sup> It is an analytical data set, produced through a modular approach. It starts from reported data and complements these with imputation and estimation. The "final" data set is then balanced through an algorithm to take off asymmetries. It is available online and will be improved as additional data is reported and becomes available from more and more countries.<sup>18</sup> The data is released in three different data sets, for users to choose from, depending on what is best for their analysis: "reported data only", "final" data (after imputation and estimations) (Chart 1), and "balanced" data. For the largest reporter, Europe, the difference between the "final" and "balanced" value represents about 4%. At the time of writing, a similar dataset was developed from 2005 to 2018 in BPM6, essentially applying the same approach and scope as to the previous dataset and it is expected to become available in 2020. As this is freely available on both, OECD's and WTO's websites, it is hoped that analysts, statisticians, and the general public contribute to this baseline data set making it a truly international benchmark over time.

Results of this analytical dataset (see Chart 1) show Europe and Asia as the two regions with the highest importance of intra-trade. 64% of Europe's and 52% of Asia's export flows are bound for destinations within their respective region. The

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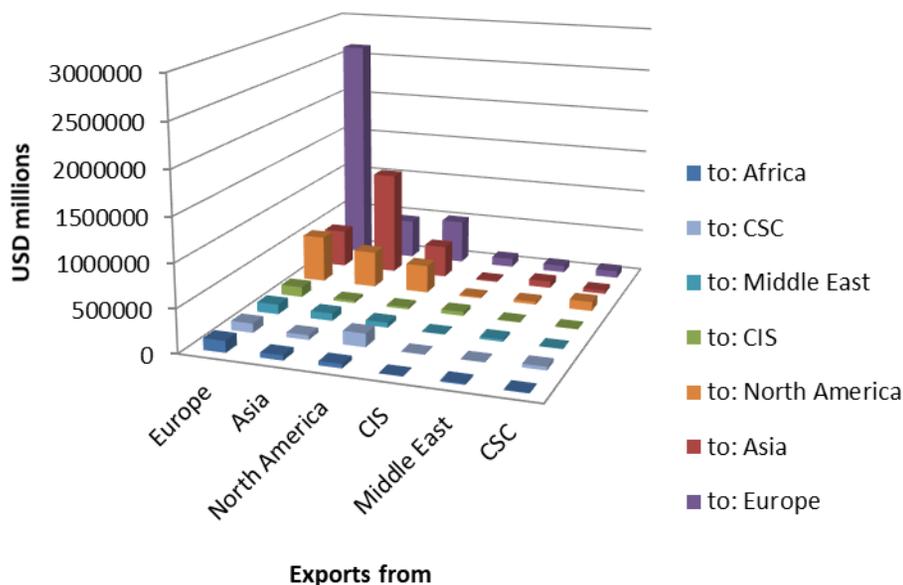
<sup>16</sup>ORGS. OF ECON. CO-OP. AND DEV. (OECD), *OECD-WTO Balanced Trade in Services Statistics*, <https://www.oecd.org/sdd/its/balanced-trade-in-services.htm>.

<sup>17</sup>*Bulk Download of Trade Datasets*, WORLD TRADE ORGANIZATION, [https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm).

<sup>18</sup>Graham Pilgrim et al., *The OECD-WTO Balanced Trade in Services Database*, OECD-WTO PAPER (2017).

regions, for which most estimation had to be included due to lack of reported data, are Africa, Central and South America, and the Middle East. For Africa, intra-trade is less than 10%.

**Chart 1:** Services exports by geographical region, 2012



*Source:* OECD-WTO BaTiS database and the World Trade Statistical Review, 2018.<sup>19</sup>

4. Trade in services by mode of supply (TISMOS) – in cooperation with experts from international agencies, national data compilers and academics<sup>20</sup>

TISMOS is an experimental dataset, just like BaTiS. It captures trade in services for nearly 200 economies with the partner world (not bilateral, that is by origin and destination) and some 60+ sectors from 2005 to 2017. The dataset is constructed against a country's BoP and foreign affiliate's statistics. Estimates, as for BaTiS, are used to complete missing data points. For gravity-related estimations no policy variables are included to allow for the further use of data sets in an analytical context. It was funded by the DG Trade of the European Commission.

<sup>19</sup>WORLD TRADE ORGANIZATION, THE WORLD TRADE STATISTICAL REVIEW (2018).

<sup>20</sup> TRADE IN SERVICES BY MODE OF SUPPLY, [https://www.wto.org/english/res\\_e/statis\\_e/trade\\_datasets\\_e.htm](https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm). (last visited Apr. 28, 2020).

The simplified approach as specified in the MSITS, 2010 is used to split international transactions into modes 1, 2 and 4. Commercial presence, or mode 3, is approximated through FATS.<sup>21</sup> This framework describes the activities of foreign-controlled affiliates in the reporting economy (inward FATS) and, conversely, the activities of majority-controlled affiliates of resident enterprises established abroad (outward FATS). The sectoral breakdown of the FATS follows the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 4 classification).<sup>22</sup> A by-product of this effort was the provision of a worldwide dataset on each country's output of its services industries.

The development of TISMOS follows three main principles: (i) baseline, (ii) modularity, and (iii) transparency:

**Baseline:** the dataset is a starting point with an agreed and established methodology. The aim is to develop the dataset further through additional input of data compilers, academics, and users in general.

**Modularity:** estimates are replaced by hard data as and when they become available. The dataset could be exposed to restrictions to trade in services and thus the idea is to provide a complete analytical string to analyse trade in services.

**Transparency:** in addition to documenting the methodology used, each single data point is documented with relevant metadata, enabling users to understand how each figure is built.<sup>23</sup>

TISMOS merges BoP and the FATS estimates through a bridge table which brings together the (mostly) product-based resident to non-resident trade figures and the activity-based FATS output dataset. However, there is no clear-cut correspondence between ISIC Rev. 4 and Extended Balance of Payments Services classification (EBOPS 2010). To better meet the information needs of trade negotiators, TISMOS presents the results from a product point of view – see table 1.<sup>24</sup>

**Table 1:** EBOPS-ISIC correspondence table

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<sup>21</sup>Only the BoP item construction is deemed to include a significant proportion of mode 3.

<sup>22</sup> U.N. DEPT OF ECON. & SOC. AFFAIRS, INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES, U.N. Doc ST/ESA/STAT/SER.M/4/Rev.4, U.N. Sales No. E.08.XVII.25 (2008).

<sup>23</sup>Steen Wettstein et al., *supra* note 5.

<sup>24</sup>Commitments in the GATS and many agreements covering services are made by service products. Also note that the most detailed data is sourced from the BoP services statistics, which is primarily product based.

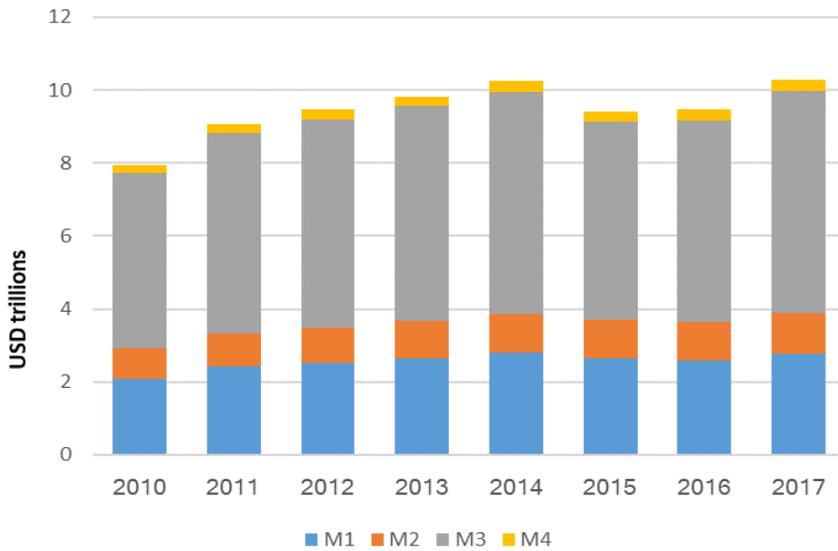
<b>EBOPS-like code</b>	<b>Description</b>	<b>ISIC Rev. 4 CODE</b>	<b>ISIC description</b>
SA	Manufacturing services on physical inputs owned by others		
SB	Maintenance and repair services not included elsewhere		
SC	Transport	H	Transport and Storage
SDB1SK21	Health services	Q	Human health and social work activities
SDB2SK22	Education services	P	Education
SDASDB3	Tourism and business travel	I	Accommodation and food service activities
SE	Construction	F	Construction
SFSG	Insurance and financial services	K	Financial and insurance activities
SH	Charges for the use of intellectual property n.i.e.		
SISK1	Telecommunications, computer, information and audio-visual services	J	Information and Communication
SJXSJ34	Other business services (excluding trade-related)	L+M+ N	Real estate; Professional, scientific and technical activities; Administrative and support service activities.
SK23	Heritage and recreational services	R	Arts, entertainment and recreation
SK24	Other personal services	S	Other service activities
SWSJ34	Trade-related services (Distribution)	G	Wholesale and retail trade; repair of motor vehicles and motorcycles.

The different levels of detail between the commercial presence data and the figures for the other modes mean that the overall measure of trade in services by mode of supply can only be obtained from eleven broad sectors. A finer breakdown is however presented based on BoP data (for modes 1, 2 and 4).

Results for the global supply of services show that it almost doubled in the considered time span, reaching almost USD 14 trillion in 2017. Mode 3 accounts for more than 55% of the total supply, while mode 2 represents about 10%. The

share of mode 1, which includes an estimation for distribution services, is about 30%. Mode 4 represents less than 5% of the total supply of services. By construction, there is a little variation of these shares over time, and fluctuations are mainly due to the variability of the underlying BoP and FATS data.

**Chart 2: World trade in services by mode of supply excluding intra-EU (28) trade**



Source: Steen Wettstein et al.<sup>25</sup>

Nevertheless, results of this experimental dataset confirm the importance of "commercial presence" as an international mode of supply for services, and the relatively lower importance of other modes at the global level. However, the latter can be more important for disaggregated data at individual country or sector level.

TISMOS as a structural dataset is a starting point with a number of shortcomings. For example, the shares to break down BoP trade flows are kept constant over time. This can only be refined by information provided by compilers. Eurostat has created a task force on trade in services by a mode of supply to get hold of these shares.<sup>26</sup> The modularity of TISMOS would allow refining current assumptions for these shares as soon as additional information becomes available. To this end, both Eurostat and WTO cooperate to document their current

<sup>25</sup>Steen Wettstein et al., *supra* note 4.

<sup>26</sup>MICHAEL MANN & DANIEL CHEUNG, MEASURING TRADE IN SERVICES BY MODES OF SUPPLY 8 (2019).

approaches and lessons learnt for guiding compilers in the development of pilot studies. Another important aspect is that commercial presence in TISMOS is measured for enterprises classified in services based on their primary activity. However, it is clear that services are not only supplied by services firms but also by manufacturing firms (and the other way around). It is not possible at this stage to overcome this issue as virtually no economy, except for USA, reports a breakdown of FATS output (or sales) by product.

The OECD provides a dataset on mode of supply in Trade in Value-Added (TiVA) terms. For this, it combines data from its TiVA database with data on commercial presence from its Activities of Multinational Enterprises (AMNE) database, however, there is no split offered between mode 1 and 4.<sup>27</sup>

### 5. Services Trade Barometer

This WTO barometer comprises two parts. First, quarterly services trade developments are deflated to approximate the world services trade volume and are shown by way of the World services trade activity index.

The actual barometer is a composite indicator which includes the purchasing managers' index, the Society for Worldwide Interbank Financial Telecommunication Index (SWIFT Index), information on computer and telecommunication of selected countries, the International Air Transport Association's (IATA) revenue passenger index contained throughout an index of construction activity. Data are seasonally adjusted, normalized and aggregated to show deviations of the smoothed versions from the trend. Issued biannually since September 2019, it depicts services trade developments in accord with the trend (a value of 100), below or above trend.<sup>28</sup>

### 6. Services trade restrictions indices

The WTO and World Bank together have released a new database – the Services Trade Policy database which is an integral part of the I-TIP. At the time of writing, it included some sixty-eight countries and twenty-three sub-sectors across financial services, telecommunication, distribution, transportation, and professional services. An expansion to thirty-two subsectors and ten additional countries is in the pipeline. Its newly developed classification of measures from an importing/host

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<sup>27</sup>A. Andrenelli et al., *Multinational Production and Trade in Services*, 212 OECD TRADE POL'Y PAPER, (2018).

<sup>28</sup>*Services Trade Barometer*, WORLD TRADE ORGANIZATION, (Sep. 16, 2019), [https://www.wto.org/english/news\\_e/news19\\_e/wtoi\\_12sep19\\_e.pdf](https://www.wto.org/english/news_e/news19_e/wtoi_12sep19_e.pdf).

country perspective is consistent with OECD’s Services Trade Restrictiveness Index Regulatory (STRI) and World Bank’s earlier databases.<sup>29</sup>

A new tool is the OECD’s Digital Services Trade Restrictiveness Index (Digital STRI) to assess cross-border barriers that affect digital trade in services. It exists for forty-four countries and indicates a great variation in the countries’ regulation of digital trade in services.<sup>30</sup>

However, while it is important to identify and quantify trade barriers because they impact trade flows, the issue is how to actually capture these trade flows and what do these trade flows refer to?

### *C. How to measure digital trade flows?*

The G20 tasked the Inter-Agency Task Force on International Trade Statistics (TFITS) to engage national and international statistical authorities as well as the business community to carry on the process of developing reporting systems on digital trade.<sup>31</sup> The OECD, WTO, and IMF developed a first version of a Handbook on Measuring Digital Trade which focuses on mapping and measuring digital transactions.<sup>32</sup> It provides a conceptual framework around which national efforts could be developed; best practices be identified; and reflects the outcome to date of the Expert Group’s efforts. It also shows that in many areas work is still very much at the stage of infancy and in some respects (for example as regards the measurement and valuation of many data forms) can best be described as embryonic.

This Handbook develops a statistical definition of digital trade as trade that is either (i) digitally-ordered, or (ii) digitally-delivered. The conceptual framework to measure digital trade is presented in chart 2. It should be highlighted that the first version is just a starting point and the “living document” is subject to change as further experience is gained in this domain.

### **Chart 3:** The conceptual framework for digital trade

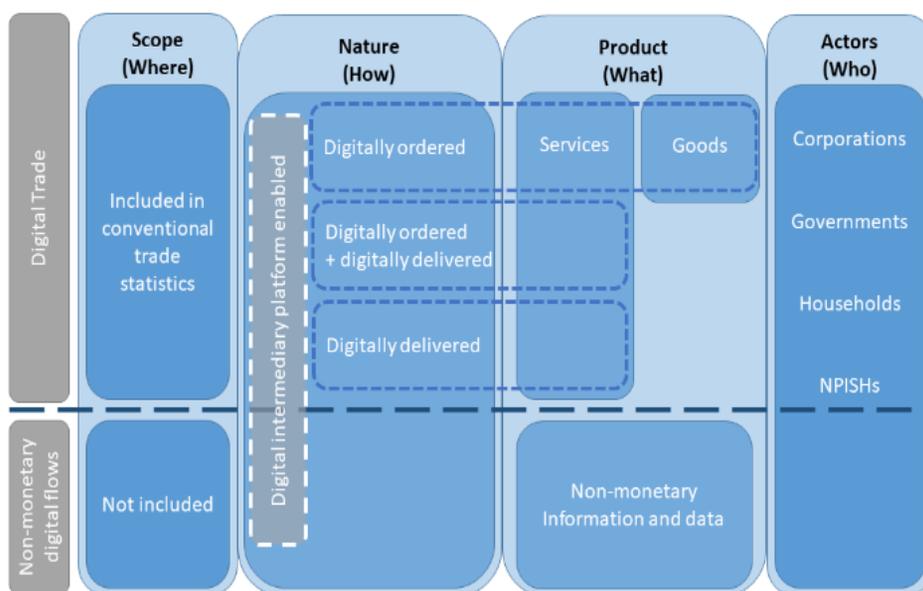
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<sup>29</sup> *Supra* note 9.; Aditya Mattoo et al., *The Evolution of Services Trade Policy Since the Great Recession*, WTO, Staff Working Paper No. ERSD-2020-02 (2020), <https://www.econstor.eu/bitstream/10419/214200/1/1690853476.pdf>.

<sup>30</sup> OECD DIGITAL SERVICES TRADE RESTRICTIVENESS INDEX, OECD STAT., [https://stats.oecd.org/Index.aspx?DataSetCode=STRI\\_DIGITAL](https://stats.oecd.org/Index.aspx?DataSetCode=STRI_DIGITAL). (last visited Apr. 28, 2020).

<sup>31</sup> *Inter-Agency Task Force on International Trade Statistics*, UN TRADE STATISTICS, <https://unstats.un.org/unsd/trade/taskforce/> (last visited Apr. 20, 2020).

<sup>32</sup> HANDBOOK ON MEASURING DIGITAL TRADE 25 (VERSION 1 2020) [hereinafter Handbook].



Source: Handbook on Measuring Digital Trade.

Note: Digital Intermediation Platforms (DIPs) are also an important component of Actors.<sup>33</sup>

Their current explicit inclusion in the nature of transactions (which may change depending on how measurement efforts evolve) reflects the scope for measuring modes of digital delivery and/or ordering through targeted surveys of DIPs. For a more detailed description of non-monetary information and data, and more general measurement challenges related to information and data (paid, which are included in the scope of digital trade, or non-monetary, which, currently, are not) see below. Deliberations continue on the precise terminology concerning non-monetary flows. Future versions of this Handbook may introduce different terminology.

#### D. The UNCTAD's work on ICT-enabled services relates to this.

The UNCTAD defines ICT-enabled services as "services products delivered remotely over ICT networks."<sup>34</sup> These product-based services correspond with the concept of

<sup>33</sup>On international trading through an intermediary, see also U.N. ECON. COMMISSION FOR EUROPE, GUIDE TO MEASURING GLOBAL PRODUCTION 147 (2015).

<sup>34</sup>U. N. Conference on Trade & Dev., Division on Tech. & Logistics Sci., Int. Trade in ICT Services and ICT-Enabled Services: Proposed Indicators from the Partnership on

digitally-delivered services in the Handbook on Measuring Digital Trade. For ICT and ICT-enabled services, pilot study results are available for Costa Rica and India, which show the share of ICT-enabled services in the respective services categories as defined by the Partnership.<sup>35</sup> A global estimate for an upper bound is that, this share may represent up to 90% of the cross-border supply of mode 1 services. New services may require an adaptation of the EBOPS services classification, and the trade negotiators classification commonly referred to as W/120.

### *E. Servicification*

‘Services matter more in international trade than meets the eye’<sup>36</sup> - A. Gonzalez, Executive Director, ITC.

The Global Value Chain (GVC) discussion and the measurement of TiVA reveal the importance of services in global supply chains as well as in the international fragmentation of production. Servicification is the buzz word and the Secretariat released staff working papers analysing services in GVCs.<sup>37</sup> There are different databases available that allow the estimation of the services share in manufacturing production (referred to as servicification). One such database which is based on official statistics is OECD’s TiVA database which is the outcome of an OECD/WTO initiative on trade in value added. This database is an excellent example of a supply chain between national statistical agencies as data providers and international organisations to add analytical value at regional or world level. Trade data in value-added terms reveals that services account for almost half of world goods and services exports. However, services inputs in manufacturing processes are often provided in-house, which may contribute to the underestimation of this share. In addition, to services contributing to the fragmentation of manufacturing production, they themselves may be produced in a fragmented manner.

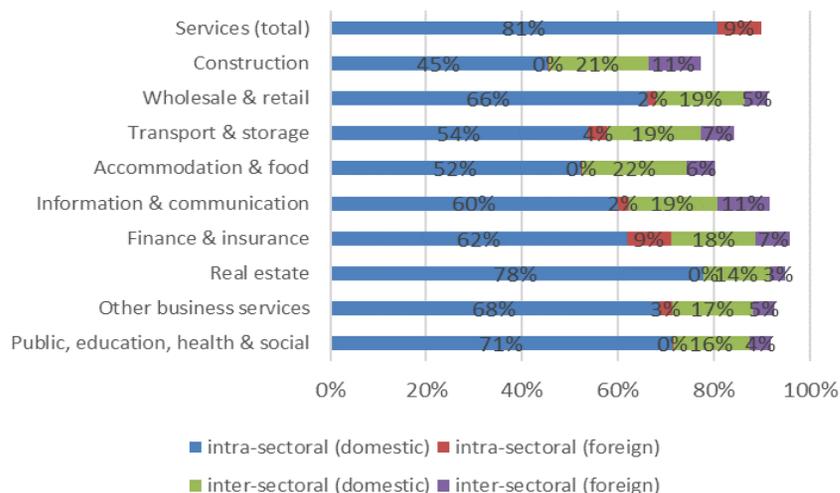
**Chart 4:** Services value added constitutes 90% in services exports (2015, in percentage)

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Measuring ICT for Development, Technical Note No. 3 Unedited, TN/UNCTAD/ICT4D/03, (2015).

<sup>35</sup>United Nations Conference on Trade and Development, UNCTAD Expert Meeting on Results from Pilot Surveys on Exports of ICT-enabled Services, (Nov. 28-29, 2017), <https://unctad.org/en/pages/MeetingDetails.aspx?meetingid=1651>.

<sup>37</sup>Rainer Lanz & Andreas Maurer, *Services and Global Value Chains — Some evidence on Servicification of Manufacturing and Services Networks*, WTO Working Paper ERSD-2015-03, (2015), [https://www.wto.org/english/res\\_e/reser\\_e/ersd201503\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd201503_e.pdf).



Source: WTO World Trade Report, 2019.<sup>38</sup>

In today's world, producers do not supply goods in isolation but offer important services such as training, maintenance, etc. along with them. This bundling of services and goods is called *servitisation*.<sup>39</sup> This shift in the production structure may even provoke companies shifting from goods to a services producer. Trade statistics as collected today are available separately for goods and services and cannot be used directly to assess *servitisation*. Firm-level data may help raise the awareness of this phenomenon.<sup>40</sup>

#### F. How to improve underlying data and their quality?

##### 1. Capacity building and Technical assistance

The WTO and other international agencies like the Eurostat, IMF, OECD, UNCTAD, UNSD, and UNWTO organize technical assistance to help countries implement the recommendations of the MSITS, 2010. The WTO Secretariat acts as a focal point in the coordination of these efforts. The aim is to:

<sup>38</sup>WTO Secretariat, *World Trade Report 2019 on The Future of Services Trade*, 23 (Oct. 9, 2019), [https://www.wto.org/english/res\\_e/publications\\_e/world\\_trade\\_report18\\_e.pdf](https://www.wto.org/english/res_e/publications_e/world_trade_report18_e.pdf).

<sup>39</sup>S. Miroudot & Charles Cadestin, *Services Exported Together with Goods*, 236 OECD TRADE POLICY PAPER, (2020).

<sup>40</sup>*Id.*; Janoz Ferencz, *The OECD Digital Services Trade Restrictiveness Index*, 221 OECD TRADE POLICY PAPER, (2019).

- improve transparency of international and regional organisation’s technical assistance activities in the field of trade in services statistics to avoid duplicated efforts;
- maintain a list of experts available to deliver hands-on and long-term technical assistance or participate in capacity building projects;
- analyze existing material to identify possible synergies or improvements in the way technical assistance is provided to producers and users of statistics; and
- explore new ways of providing technical assistance, for example through the use of E-campus, an online learning platform.<sup>41</sup>

For analytical purposes, the quality and level of detail in trade in services data is very important.<sup>42</sup> As previously discussed, data relating to trade in goods is available in much more detail and for a longer time period. Trade in services data face inherent problems, not only through the definition of modes of supply and the respective problems of conceptualizing mode 4 and measuring it, but also through sizing mode 3. Another important aspect is the capturing of in-house trade in services within multinational enterprises along a global supply chain.

### III. RESEARCH ISSUES

As economic developments and business models constantly change, trade in services statistics also undergo a “stress test”. Official statistics are not able to keep pace in adapting their classification systems for new products. Additionally, the implementation of newly adapted systems takes time to implement.

In this part, we shall discuss this “stress test”, which comprises of two angles. The first, on how economic policies on taxation impact trade statistics, will be discussed in sub-part A and the second, on how statistics on services trade can be combined with related themes, will be discussed in sub-parts B and C. Can trade in services statistics be combined with other domains for analysing economic developments such as trade in goods, foreign direct investment (FDI) or investment facilitation measures? Another aspect, with the acceleration of digitalisation, is the question of how the value of intellectual property (IP) of a product may be quantified. Teardown reports do this for individual goods, however, how can this be done on a large-scale base for goods and services in

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<sup>41</sup>WORLD TRADE ORGANIZATION, INFORMATION ON CAPACITY-BUILDING ACTIVITIES ON TRADE IN SERVICES STATISTICS, [https://www.wto.org/english/res\\_e/statis\\_e/ongoing\\_e.htm](https://www.wto.org/english/res_e/statis_e/ongoing_e.htm). (last visited Apr. 28, 2020).

<sup>42</sup>S. Saez et al., VALUING SERVICES IN TRADE: A TOOLKIT FOR COMPETITIVENESS DIAGNOSTICS 18 (2014).

general? A completely new perspective is the market of inventions, that is, a trade in inventions, before these inventions enter the market as goods and services.

*A. The impact of taxation on trade statistics*

Trade statistics (goods and services) may be contaminated by loopholes for tax-motivated movements of intellectual property, cross-border investments into special purpose entities, sale of goods and services below market prices, transfer prices, particularly, in multinational enterprises and unclear ownership relations (goods for processing and/or contract manufacturing) or “reductions in the taxation of capital, including the fall of corporate taxes.”<sup>43</sup> This raises two questions: first, whether and how trade flow statistics are biased, and if they are, then in what direction (net effect); second, is the case for certain countries and/or sectors more than others. For example, could trade statistics (goods, services for all modes) be adjusted to account for tax driven distortions and which rules could be employed to do so? Or, how do tax driven distortions in trade data affect the composition of multi-regional input output tables, especially in the light of changes in the reporting of contract manufacturing? And, if they do, then how would these impact macroeconomic aggregates?

On goods, this would include transfer pricing in cross-border goods transactions. On services, in addition to transfer pricing within multinational enterprises (intra-firm trade), it would include analysing distortions related to resident to non-resident trade (mode 1, 2 and 4) and resident to resident transactions (mode 3) which requires the analysis of FDI and FATS data. What distortions can be identified and quantified?

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<sup>43</sup>Gabriel Zucman et al., *Why Capitalism's Salvation Depends on Taxation*, FOREIGN AFFAIRS (Jan./Feb, 2020), <https://www.foreignaffairs.com/articles/united-states/2019-12-10/starving-state>; See also Brad Setzer, *Ireland's Statistical Cry for Help*, COUNCIL ON FOREIGN RELATIONS (Nov. 1, 2019), <https://www.cfr.org/blog/irelands-statistical-cry-help>; Further information on Ireland's trade statistics can be found at, Cole Frank, *Tax Avoidance and the Irish Balance of Payments*, COUNCIL ON FOREIGN RELATIONS (Ap. 25, 2018), <https://www.cfr.org/blog/tax-avoidance-and-irish-balance-payments>; Yuqing Xing, *Apple's Exports Aren't Missing: They Are in Ireland*, COUNCIL ON FOREIGN RELATIONS (Oct. 30, 2017), <https://www.cfr.org/blog/apples-exports-arent-missing-they-are-ireland>; Sacha Vincent & Thomas Neubig, *A Missing Link in the Analysis of Global Value Chains: Cross-Border Flows of Intangible Assets, Taxation and Related Measurement Implications*, WORLD INTELLECTUAL PROPERTY ORGANIZATION, ECONOMIC RESEARCH WORKING PAPER NO. 37, (2017), [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_econstat\\_wp\\_37.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_econstat_wp_37.pdf); Mark Haan & Joseph Haynes, *R&D Capitalisation: Where Did We Go Wrong?*, in THE CHALLENGES OF GLOBALIZATION IN THE MEASUREMENT OF NATIONAL ACCOUNTS (Ahmad Nadim et al. eds., 2019).

Some examples of such distortions are the practices of contract manufacturing and phantom FDI. Phantom FDI refers to the practice of some multinational corporations (MNCs) of investing into Special Purpose Entities (SPEs) that are merely shell corporations with no real business activity. It is pertinent to note that FDI inflows are statistically higher in countries that have a correspondingly low corporate tax rate. The purpose is often to minimize an MNC's tax bill. The task is to disentangle phantom from genuine FDI.<sup>44</sup>

However, other factors play a role; IP or Research and Development (R&D) which demands a closer look at economic and legal ownership in global production arrangements. How do shifts in IP or investments in R&D impact trade statistics?<sup>45</sup> Digital trade brings in a new dimension on cyberspace and physical space. Does 3D-printing change the trade pattern and thus its impact on taxation? Do e-residency arrangements impact trade flows?

After identifying potential statistical issues, the question is, whether these impacts can be estimated at least on an academic level. For example, Tørslov *et al* attempted to adjust trade balances as they argue that importers' data may miss (at least some of) the services that are exported by tax-haven corporations.<sup>46</sup> They attempt to adjust trade balances, not services cross-border transactions

Hebous and Johannesen propose adjusting BoP services trade transactions by comparing exports from tax havens of affiliates and non-affiliates in a gravity framework, arguing that higher exports of affiliates than non-affiliates from tax havens in comparison to non-tax havens represents profit shifting driven "excess trade."<sup>47</sup>

### B. FDI, trade and investment facilitation

The objective of a global database on trade and investment is to understand in a better manner, the various trends in trade and investment. This helps to facilitate research in quantitative analysis of how investment facilitation measures, along

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<sup>44</sup>To distinguish phantom FDI from genuine FDI, *see*, Phantom Bruno Casella, *Exorcising Phantom FDI: A Probabilistic Approach to Identifying Ultimate Investors*, VOX: CEPR POLICY PORTAL (Oct. 30, 2019), <https://voxeu.org/article/exorcising-phantom-fdi>.

<sup>45</sup>Multinational Profit Shifting and Measures throughout Economic Accounts, *also see* Jennifer Bruner et al., *Multinational Profit Shifting and Measures throughout Economic Accounts*, NAT. BUREAU OF ECON. RESEARCH, WORKING PAPER NO. 24915, (2018), <https://www.nber.org/papers/w24915.pdf>.

<sup>46</sup>Gabriel Zucman et al., *The Missing Profits of Nations*, NAT. BUREAU OF ECON. RESEARCH, WORKING PAPER NO. 24701, (2018).

<sup>47</sup>Shafiq Hebous & Neils Johannesen, *At Your Service! The Role of Tax Havens in International Trade with Services*, CESifo Group Munich, CESifo Working Paper No. 5414, (2016).

with other trade and investment measures, affect economic development in Developing and Least Developed Countries (LDCs).

Such a database could be a valuable contribution to the investment facilitation discussion and, more broadly, to a better understanding of how investment and trade can better help achieve the Sustainable Development Goals (SDGs).

### *C. Ideas – invention and innovation*

The cross-border exchange of intellectual property through licensing and transferring contracts of patent rights also impacts trade in services statistics, for instance, Ireland’s recent example of a spike in imports because of a large company transferring its IP from Singapore to Ireland.<sup>48</sup> These IP flows are recorded in the BoP as they are related to innovations.

However, before innovations take place, inventions need to be made. The Ullberg Report’s Trade in Ideas Project, attempts to gather more information on these inventions.<sup>49</sup> For policy makers, it is also interesting to capture the pattern of this type of trade – how much and it flows from whom to whom – to better understand how these trade flows leverage human capital formation.

Inventions are only indirectly measured because they become innovations or “embodied” patents. The focus of the “Trade in Ideas” framework is on “non-embodied” transactions, i.e. when patents are traded in their *own rights* by the mechanism of licensing or transfer *before* the production of any goods and services takes place. Often such a technological development takes place ten to twenty years before any economically successful innovation. The Trade in Ideas statistical framework is concerned with extending aggregated information to include firm-level data to aggregate the cross-border value of trade in ideas.

Analyzing invention markets would help to inform policy for developing trade rules that give incentives for inventors to *specialize* in their field of expertise, for example, to produce new, productivity-enhancing technology that would pave the way for economic growth in an economic, social and environmental context. Understanding which nations’ inventors produce what patented technology and trade with whom, would show where value is created and how, and would inform

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<sup>48</sup>Mark Paul, *Microsoft Moves \$52.8bn of Assets and its Asian Trading Operation to Ireland*, THE IRISH TIMES (May 25, 2019), <https://www.irishtimes.com/business/technology/microsoft-moves-52-8bn-of-assets-and-its-asian-trading-operation-to-ireland-1.3903630>.

<sup>49</sup>Eskil Ullberg, *Trade in Ideas Program Presentation and Discussion at WTO*, THE ULLBERG REPORT (Mar. 6, 2018), <http://report.ullberg.biz/trade-in-ideas-program-presentation-and-discussion-at-wto/>.

inventors, companies, universities, investors and policy makers of the efficiency of their mechanism to turn productive ideas into growing economies. Such statistics would be instrumental in informing policies to create a level playing field for all involved stakeholders.

Such a statistical framework requires mapping the trading *mechanism* and assessing the *cross-border value* of inventions through *prices* for the technologies traded as a measure of value. These prices vary bilaterally, regionally and internationally for the *same* technology. While national prices are also important, they are not the focus of this study. Also, the relations between different *types* of inventors – individuals, companies, universities – are important.

#### IV. CONCLUSION

With an increased tradability of services, and an increasing use of new technologies that allow services such as distance learning or work from home, especially with the arrival of the COVID-19 crisis, the world is experiencing another revolution in how economic agents affect their transactions, whether domestic or international. Infrastructural services such as telecommunication, information and communication technologies and financial services not only help foster economic development but also drive digitalisation of the economy, thus expanding the opportunity for cross-border services.<sup>50</sup>

In fact, it will be increasingly complicated for consumers to decipher whether they are communicating with servers abroad or of their own country. Electronic products may be shipped through telecommunication networks and distance is less of an obstacle to international trade. This will inevitably complicate measuring international trade in services as can be seen by the difficulty of defining a conceptual framework to measure digital trade. Data flows in terms of their quantity measurement and not content and respective value may be an interesting step to get hold of this phenomenon.

Not being able to capture trade in services adequately holds negative aspects for monitoring trade policies in this domain. Developing countries increasingly base their economic development on the services sector as the main driver, and they

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<sup>50</sup> N. Rochester, *The Potential of Trade in Services for Developing Countries*, in WTO WORLD TRADE REPORT 2019 166 (2019).

require good quality and as much as possible, disaggregated trade in services statistics.<sup>51</sup>

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<sup>51</sup> Ejaz Ghani et al., *Service with a Smile: A New Growth Engine for Poor Countries*, VOX: CEPR POLICY PORTAL (May 4, 2011), <https://voxeu.org/article/service-smile-new-growth-engine-poor-countries>.