


TRADE IN THE DIGITAL ECONOMY

A PRIMER ON GLOBAL DATA FLOWS FOR POLICYMAKERS

Prepared by the ICC Commission on Trade and Investment Policy
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EXECUTIVE SUMMARY

The flow of digital information has proven itself to be a key driver of economic development and job creation, especially in developing economies. The Internet and Internet-enabled services, which rely on cross-border data flows, are vital for companies across all sectors of the economy and are particularly critical for small- and medium-sized enterprises (SMEs). Access to digital products and services, such as cloud applications, provides SMEs with cutting edge services at competitive prices, enabling them to participate in global supply chains and directly access customers in foreign markets in ways previously only feasible for larger companies. Indeed, the Internet is a great equalizer, enabling small companies to compete globally using the same tools as large and established companies. Recent research by McKinsey has clearly demonstrated the ever growing importance of such data flows across economies.

Global flows have raised world GDP by at least 10 percent; this value totalled \$7.8 trillion in 2014 alone. Data flows now account for a larger share of this impact than global trade in goods. Global flows generate economic growth primarily by raising productivity, and countries benefit from both inflows and outflows.¹

In light of the growing importance of these data flows, ICC has developed this primer to assist policymakers in addressing the negative implications for growth from blanket restrictions to data flows. In addition, the paper stresses the importance of creating trusted environments to better enable use of Information and Communication Technologies (ICTs) and related data flows. The primer concludes with a set of policy recommendations to help ensure that all citizens and companies realize the full potential of the Internet as a platform for innovation and economic growth.

1 McKinsey Global Institute (2016): "[Digital globalization: The new era of global flows](#)"

I. INTRODUCTION: THE ROLE OF DATA FLOWS IN TRADE FOR MNEs AND SMEs



Global value chains (GVCs) have become a critical feature of today's global economy, and as a result there is growing recognition that the nature of trade is changing. World trade is now characterized by the globalization of production driven by technological progress, cost, and access to resources and markets. While 80% of global trade occurs in GVCs coordinated by multinational enterprises (MNEs), local small- and medium-sized enterprises (SMEs) contribute approximately 40-50% of export value added as suppliers within these chains.¹ Participation of SMEs in GVCs is especially important in the developing world, where smaller firms can represent as much as 80-90% of total employment.²

The globalization of production necessitates the movement of data and information across borders. GVCs depend on seamless and uninterrupted information flows across companies and countries. Cross-border data flows have increased economic efficiency and productivity, raising welfare and standards of living.³ The increased importance of data flows to companies and citizens has also increased the topical relevance of data flows in trade-related negotiations.

1 OECD (2014): "Progress report on Analysis of Global Value Chains: Challenges, Opportunities and Implications for Policy", Paris, 12 March

2 Wignaraja (2013): "[Can SMEs Participate in Global Production Networks: Evidence from ASEAN Firms](#)" in D.B. Elms and P. Low (2013): "Global Value Chains in a Changing World" (edited), Geneva: WTO

3 OECD (2012): "Internet Economy" , 143

II. IMPORTANCE OF DATA FLOWS FOR ECONOMIC DEVELOPMENT AND GROWTH



The Internet, and the data flows that support it, has accounted for 15-20% GDP growth in many countries, including developing countries.⁴ Approximately 50% of all traded services are enabled by information and communication technologies, according to UNCTAD estimates.⁵ With the Internet of everything⁶ growing fast, machine-generated data is seen to contribute up to a projected 50-fold increase in Internet traffic between 2010 and 2020⁷ with 1 trillion connected objects and devices on the planet generating data in 2015.⁸ Companies that have harnessed big data⁹ have been able to increase their operating margins by 60%.¹⁰ The International Data Corporation expects the overall big data and analytics market to reach \$125 billion worldwide in 2015.¹¹ McKinsey estimates that mobile Internet applications could generate economic value of \$2-5 trillion annually, with nearly half coming from developing economies. Data flows, within and across borders, have an undisputed impact on large-scale economic development and also contribute to the improvement of the day-to-day management of companies of all sizes through business innovation (information technology and back-office consolidation, digitalized human resources services, supply chain management, etc.), economic growth and job creation.¹²

Cross-border trade in today's economy in both physical and virtual goods is supported by global data flows. Policy and regulatory environments impact both the development and the deployment of digital technologies that can enhance trade. Needless burdens or unjustified restrictions on such technologies can significantly limit the potential of these technologies to deliver economic and social benefit. Similarly, a lack of trust in these technologies and related services, in particular how personal data is handled, can limit their adoption. Thus, policymakers must be aware of the need to remove barriers as well as create trusted environments for trade in the digital economy to reach its potential. The key challenge is to create inter-operability mechanisms that allow for cross-border transfers of data. These mechanisms provide a way to transfer data, while at the same time ensuring that companies comply with national data privacy and other rules. It should be left to the company to deliberate whether to maintain data on local servers and data infrastructures, according to the need of crucial communication, data flow and market driven services.

A. Potential non-tariff barriers to trade in the digital economy

Trade can be impacted in many ways. One of the most obvious is the vestigial inclusion of paper-based references in policies and regulations. Terms including hand-written signatures, for example, may preclude the ability to digitally sign and electronically transfer documents. Thus, regulatory environments should be modernized to include these new technological transaction and contracting mechanisms. Trade can also be negatively impacted by government mandated requirements related to data flows which may take the form of geographical mandates related to data flows, processing or storage, local technology or content requirements, and specific technical requirements (restrictions or mandates).

4 McAfee, Andrew and Erik Brynjolfsson (2012): "Big Data: The Management Revolution".

5 UNCTAD (2009): "[Information Economy Report, United Nations Conference on Trade and Development](#)", p. xvii

6 The Internet of everything refers to the broader interconnected ecosystem of people and things and the interaction of people and objects across and between themselves to use cloud services supported by analytics.

7 The International Data Corporation (2012): "[The Digital Universe in 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East](#)." Sponsored by EMC Corporation.

8 IBM (2013): "[IBM 2013 Annual Report](#)."

9 The term "big data" refers to ever larger, more varied and complex data sets changing at a faster pace than ever before. This data is generated by connected devices including PCs, smartphones and sensors. Big Data also represents an improved ability to use improved analytics within and among these data sets to determine new correlations that may lead to better questions being asked of the data as well as new inferences related to it.

10 Brookings Institution (2014): "[Supporting the Internet as a Platform for International Trade – Opportunities for Small and Medium-Sized Enterprises and Developing Countries](#)." Global Economy and Development.

11 The International Data Corporation (2014): "[IDC Predictions 2015: Accelerating Innovation – and Growth – on the 3rd Platform](#)."

12 Brookings Institution (2014): "[Supporting the Internet as a Platform for International Trade](#)."

Finally trade may also be limited by discriminatory application of policies or regulation including differential treatment of similar products or services and inadequate enforcement of competition rules. Examples of these issues have been seen in certain preferential market access requirements that skew the normal dynamics of market competition. For business customers and consumers alike, this can limit their ability to choose from a variety of cross-border data service providers, substantially constraining the productivity benefits derived from underlying technology.

B. Trust is an essential element to the adoption of emerging technologies and critical to trade in the digital economy

As demonstrated above, unstructured data and information are drivers¹³ of digital products, services and innovation and their role is growing as the broader economy digitizes. With the growing economic importance of data, however, comes the growing importance of effective measures related to data privacy and data security, particularly in light of concerns about personal data breaches and surveillance. Moreover, emerging technologies that depend on the movement and processing of data, such as big data, cloud computing¹⁴ and the Internet of everything, provide great promise of enhanced economic growth and the potential for substantial societal benefit to health, the environment and many other facets of life. The benefits of these emerging technologies will only be realized, however, if they are adopted by consumers, businesses and governments who trust that their personal data will be treated according to privacy and security laws. Governments should therefore assure that their policy and regulatory environments are up to date and reflect best practice regarding the protection of privacy and security. It is incumbent upon companies to directly and comprehensively implement their legal obligations to protect privacy and security of data, across its entire processing lifecycle or locations of processing.

However, lack of interoperability across the policy and regulatory environment can create needless administrative burdens and compliance inconsistencies across jurisdictions. As privacy is both subjective to the data subject and tied to the cultural and legal context of the jurisdiction, harmonization has been difficult to achieve. Work has been undertaken between the APEC Data Protection Subgroup and the EU Article 29 Working Party on mapping obligations and solutions across jurisdictions to develop frameworks of policy interoperability between regions. This work is not intended to diminish any jurisdiction's protection but rather to find ways of avoiding duplicative compliance requirements and needless administrative burdens, while assuring adequate levels of protection. In any event, companies must take appropriate steps to comply with policy frameworks and regulations related to the security and protection of personal data, to maintain and build user trust.

C. Economic impact of restricting data flows

Forcing production in one country can reduce production in other countries, which may encourage third countries to pursue their own localization policies. Companies develop global supply and value chains based on the logical needs of companies and customers, the presence of resources both human and logistical and general efficiencies and economies that such arrangements can provide. Creating artificial constraints to such planning through data or server localization restrictions increases the costs of doing business and diminishes the attractiveness of the location for investment or inclusion in such value chains. In some cases, local data storage regulations can lead to higher costs for the local companies – especially SMEs – that depend on cloud computing and other Internet resources to operate and to reach global markets. In certain cases, local companies could be denied services altogether, because the costs of local data storage or processing for

¹³ OECD (2015): "[Data Driven Innovation: Big Data for Growth and Well Being](#)"

¹⁴ Cloud computing is a style of computing in which dynamically scalable and often virtualised resources are provided as a service over the Internet. Users need not have knowledge of, expertise in or control over the technology infrastructure in the 'cloud' that support them. The concept generally incorporates combinations of the following: infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS). Cloud computing services often provide common business applications online that are accessed from a web browser, while the software and data are stored on the servers. Cloud applications can be accessed not only from individual personal computers but from many other devices as well.

some companies may be too great and result in the companies not offering services in the domestic market.

Some research has focused on potential negative economic impact of recently proposed or enacted legislation on GDP. For example, the European Centre for International Political Economy (ECIPE) estimates GDP losses due to data localization policies may have significant domestic impact in Brazil at -0.2%, China at -1.1%, the European Union at -0.4, India at -0.1%, Indonesia at -0.5%, Korea at -0.4% and Vietnam at -1.7%.¹⁵ The research focuses solely on the costs of doing business in those jurisdictions based on adoption of data localization policies.¹⁶

III. RATIONALIZING THE NEED FOR DATA FLOWS AND TRUST



At the global level, more countries are imposing restrictions on cross-border data flows without considering the impact on innovation in their economy. Restrictions impede effective adoption of innovative technologies, create fragmentation and often legal uncertainty. Such restrictions may result in extra costs, skills gaps, degraded operating efficiency and administrative burdens for companies. Many Internet of Everything innovations could be crippled without cross-border data flows, as fragmentation and increased complexity caused by restrictions significantly complicate global value chains. Additionally, policymakers should consider all ways to assure privacy as in the vast majority of cases, the reversion to localization is neither the only means nor even necessary to protect such interests. Establishing clear rules and enforcing roles and responsibilities in the data processing value chain are the keys to maintaining responsibility over compliance irrespective of locality.

Big data analytics are most effective when based upon very large volumes of information that reflect the populations served, such as using patient disease and treatment data within ethical research protocols. However, the benefits gained through back-office consolidation could be lost if impeded by laws preventing the use of shared services. Furthermore, much collaboration and many business opportunities to join global supply chains would be missed if cross-border data flows were inhibited, affecting developing nations and economies hardest as they are most dependent on foreign direct investment – e.g. restrictions on data flows would harm the ability of application developers from every country in the world to reach over a billion users by distributing their content using mobile operating systems. Similarly, failure to adopt technologies by consumers, business or governments due to lack of trust could constrain the potential economic and social benefits that can accrue from the more robust utilization of such technology.

IV. DATA FLOWS AND TRADE AGREEMENTS



Policymakers should take note that a number of trade agreements have addressed data flows and the related regulatory environments. These agreements have recognized the need for governments to enact measures to protect privacy, but have determined that such measures should not justify protectionist approaches. At the multilateral level, the General Agreement on Trade in Services (GATS) has several provisions that establish legal obligations on governments to allow the processing and transmission of data within and across borders. They include obligations on market access, national treatment and the use of public networks. In situations where a government introduces a measure for the protection of privacy which violates any of its obligations under the Agreement, a possibility exists for deviating from such obligations and invoking an exception provision found in Article XIV of the GATS. The exception provision allows such deviations as long as the measure in question is proven to be “necessary” for the pursuit of the policy objective. Such a measure would not be “necessary” if an alternative less trade-restrictive measure could achieve the same result. This caveat is designed to

¹⁵ ECIPE occasional paper No. 3/2014 (2014): “[The costs of data localization: friendly fire on economic recovery](#)”

¹⁶ Ibid at 7.

ensure that the pursuit of privacy protection policies does not result in unnecessary barriers to trade. The language of GATS is informative, and we reference the pertinent excerpt below:

ARTICLE XIV (GATS) General Exceptions

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where like conditions prevail, or a disguised restriction on trade in services, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any Member of measures:

- c) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement including those relating to:
 - ...
 - ii) the protection of the privacy of individuals in relation to the processing and dissemination of personal data and the protection of confidentiality of individual records and accounts;

V. POLICY CONSIDERATIONS AND RECOMMENDATIONS

ICC believes that government policymakers should strive to set favourable conditions for the digital economy and encourage data-driven innovation, while at the same time taking into account the interest of individuals and businesses alike in the protection of their personal data regardless of where it is stored, processed or transferred. To that end, in developing laws, policies, regulations and trade agreements, policymakers should take into account the following considerations:

- > The movement of data across borders is integral to the effective functioning of today's global economy.
- > Local and cross-border flows of data are essential to supporting emerging technologies including cloud, the Internet of everything, and big data analytics.
- > This movement of data may provide benefits to MNEs, SMEs, developed and developing countries alike.
- > Requirements of localization of data or technology, broadly defined, negatively constrain innovation, trade and related services resulting in limitation of economic growth and social benefit. While there can be, certain compelling public policy issues - including privacy and security - recognized as possible exceptions and that may form a legitimate basis for governments to place some limits on data flows; these should only be implemented in a manner that is non-discriminatory, is not arbitrary, is least trade restrictive and not otherwise a disguised restriction on trade.
- > Reliable instruments allowing cross-border flows of data are necessary for business to avoid uncertainty regarding the lawfulness of cross-border flows of data.
- > Approvals necessary for instruments allowing cross-border flows of data should be granted on short notice to support emerging technologies.
- > Lack of trust in emerging digital technologies and related services can delay or preclude adoption of emerging technologies and likewise diminish economic and social benefits.

Accordingly, ICC urges governments to ensure all citizens and companies can realize the full potential of the Internet as a platform for innovation and economic growth, by adopting policies

that facilitate the adoption of new technologies and global movement of data that supports them. In this context, specific recommendations that ICC offers include:

- Governments should adopt policies to build trust by ensuring that users have appropriate control and practical mechanisms with regard to how personal data is used, and the companies to which they entrust their data should adopt recognized and applicable best practice to ensure that the data is appropriately secured as technology and services evolve.
- Policymakers should promote the establishment of a new trade principle, with the underlying objective of allowing the flow, storage, and handling of all types of data across borders, subject to privacy and security laws and other laws affecting data flow covered under GATS article XIV. Trade agreements that address data flows should support and emphasize the importance of enabling data flows, prohibit unjustified or blanket restrictions on data flows, and establish fair and binding rules to facilitate information flows across borders.
- Certain compelling public policy issues - including privacy and security - are recognized as possible exceptions and may form a legitimate basis for governments to place some limits on data flows if they are implemented in a manner that is non-discriminatory, is not arbitrary, is least trade restrictive, and not otherwise a disguised restriction on trade.
- If policy makers decide to implement certain limits on cross-border data flows for privacy and security objectives, consistent with GATS obligations, they should ensure that such requirements include all relevant players and are equally applied.
- Trade agreements should promote policy coherence in national rules and regulations that affect the movement of goods, services, and information across borders.
- Trade agreements should support the Internet's enabling role for SMEs to grow and participate in global trade.
- In the interest of promoting data flows and trusted environments, and to meet international trade obligations, any regulatory measures which limit data flows:
 - Should be necessary to accomplish the recognized and compelling public policy objective; be the least trade restrictive policy alternative needed to effectively address the issue,
 - Should not be arbitrary,
 - Should not be discriminatory, and
 - Should not be disguised restrictions on trade in services.



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