Global Commerce and Cross Border Data Flows

Dr. Robert D. Atkinson
President, ITIF

@RobAtkinsonITIF
About ITIF

- One of the world’s top science and tech think tanks
- Formulates and promotes policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress
- Focuses on a host of issues at the intersection of technology innovation and public policy:
  - Innovation processes, policies, and metrics
  - Science policy related to economic growth
  - Digital technology issues (e.g., e-commerce, e-government, e-health)
  - IT and economic productivity
  - Innovation and trade policy
ITIF Global Engagement

ITIF travel and policy engagement since 2007

[Map showing global engagement areas]
ITIF Publication Highlights
Today’s Presentation

1. Digital Trade is Growing
2. Keys to Digital Trade Success
3. Digital Protectionism is Growing
4. What Should Government Do?
Global Economy Is Increasingly Digitalized

- Digital economy accounts for 25% of global GDP.
- Half of value created over the next decade will be created digitally.
- Value of cross-border data flows surpassed value of merchandise trade for first time in 2015.

IT is Driving Rising Share of Services Trade

- Face-to-face services are now able to be traded either in whole (e.g., banking, higher education, retail) or part (e.g., Uber, Redfin, Airbnb).

- “Second unbundling” of international trade where service tasks in manufacturing are unbundled and traded separately.

- Services exports account for 40% of world trade. The services content is significantly higher for developed countries (46%) than developing countries (33%).
Many Industries Rely on Cross-Border Data Flows

- A 9-hour flight from New York to Sao Paulo on an aircraft with two engines can generate 320 terabytes of data.

- This data allows airlines to decrease flight delays, lower costs, and improve safety.
Many Industries Rely on Cross-Border Data Flows

- Each day, Rio Tinto sends and receives around 30 gigabytes of laboratory, control system and mining data to and from each of its operations in over 40 countries.

- Rio Tinto uses this data to be more environmentally friendly, reduce costs, and promote safer mining in each of its locations.
Trend Will Speed Up With Emerging Technologies

1. Cloud Computing

2. Internet of Things

3. New Production Systems (e.g., Industry 4.0)
   – Generative Design & 3-D Printing
   – Automation: Robotics & Artificial Intelligence

4. FinTech/Block Chain
Benefits of IT-Enabled Trade

- Domestic competition
- Economies of scale
- Innovation
- Productivity
ICT Enables Scale—and Scale Enables Productivity

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Keys for Digital Industry Success

- Large Markets
- Few or No Policies Raising Firm Costs
- Few or No Policies Limiting Firm Revenues
Firms in Digital Industries Need Larger Markets to Survive

Costs for 2 hypothetical firms with different fixed and marginal costs
Larger Markets Enable Digital Firm Competitiveness

Model of a firm with 350 units fixed costs, and 0.25 units of profit for unit of sale
Lower Costs Enable Digital Firm Competitiveness

![Graph showing Adult Population, 100,000s with two lines representing Total Profits and Profits With Lower Costs.](image-url)
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Obstacles to Increased E-Commerce and Digital Trade

- Protectionism for domestic incumbents
- Limitations on cross border data flows
- Taxes and regulations that raise IT costs
Barriers to Data Flows Are Growing

- A growing number of countries are making it more expensive and time consuming, if not illegal, to transfer data overseas.

- Currently: 34 enacted barriers and a range of proposed barriers.
  - Trendline: These measures are spreading rapidly.

- ITIF analysis of formal laws or regulations publicly reported as of April 2017.
For Example: Data Localization in China

- World leader in its use of data localization
- Long limited data imports through “Great Firewall of China.”

- 2006 – e-banking data
- 2011 – personal financial data
- 2013 – personal credit data
- 2014 – health and medical data
- 2015 – (proposed) insurance data
- 2016 – online publishing (apps, audio and video platforms, online gaming)

- 2016 – Counter-terrorism (broad requirements)
- 2016 – Cybersecurity law (broad requirements)
- 2016 – Cloud computing restrictions
- 2017 – Personal and Important Data (broad requirements)
Main Motivations for Data Localization

- Privacy and Cybersecurity
- Digital Mercantilism
- Government Access to Data
Motivation: Privacy and Cybersecurity

- Many policymakers reflexively and mistakenly believe that data is more private and secure when it is stored within a country’s borders.

- Geography ≠ Privacy/Security
  - The privacy and security of data does not depend on which country the information is stored in
  - National privacy and security rules follow the data.
Motivation: Digital Mercantilism

- Some countries believe data localization offers a quick way to force high-tech economic activity to take place within their borders.

- Misguided and self-defeating.
  - Data centers don’t create many jobs, especially as they become more automated.
  - Increases the cost for all IT service users
Motivation: Government Access to Data

- Governments want access to data.
  - E.g. U.S. DOJ vs. Microsoft in Ireland

- Need to Differentiate
  - Non-democratic countries: want access for political/social purposes, such as China and Russia
  - Democratic countries: need a legal process to facilitate legitimate requests to access data for law enforcement and national security purpose
The Costs of Barriers to Cross-Border Data Flows

- Firm Competitiveness
  - Companies pay more for data-related services and compliance services.

- Productivity
  - Higher ICT costs for all business users
The Cost of Barriers to Data Flows are Significant

– Causes prices for some cloud services in Brazil and the European Union to increase 10.5 to 54 percent.

– Reduces GDP by 0.7 to 1.7 percent in Brazil, China, the European Union, India, Indonesia, Korea, and Vietnam.

– If Brazil had enacted data localization as part of its “Internet Bill of Rights” in 2014, companies would have had to pay an average of 54% more to use cloud services from local cloud providers compared with the lowest worldwide price. Higher prices and displaced domestic demand would lead to consumer welfare losses of $15 billion.

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EU’s Digital Single Market is *not* the Model

- **EU policies *raise costs* of digital companies**
  - Regulating “over-the-top” apps as telcos
  - “Right to be forgotten”
  - Data localization (e.g., “EU cloud”)
  - Subjecting Internet platforms to special regulation
  - “Right to explanation” for artificial intelligence
  - Rights to access, delete and change data
  - VAT on e-books, but not paper books

- **EU policies *reduce revenues* of digital companies**
  - General Data Protection Regulation
  - Geo-blocking
  - Strong net neutrality / limitations on zero rating
Higher ICT Costs Mean Less ICT Use

- For every 1 percent drop in price in ICT products, there is a 1.5 percent increase in demand.  
  - (Gurbaxani, 2003)

- Limit or Eliminate:
  - ICT Tariffs and taxes
  - Data center and data localization requirements
  - Local content requirements
  - Procurement preferences for domestic companies
### Countries/Regions Differ in Enabling Digital Success

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<th>United States</th>
<th>China</th>
<th>EU</th>
<th>Brazil</th>
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<td>Large Market</td>
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<td>Few Policies To Raise Costs</td>
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<td>Few Policies To Reduce Revenue</td>
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Steps for More Robust Digital Trade (I)

✔ Reduce tariffs on ICT imports (Join the Information Technology Agreement).
Steps for More Robust Digital Trade (II)

✓ Ban limitations on cross border data flows and data center localization requirements.

✓ Ban customs duties on cross-border data transmissions.

✓ Exempt digital goods imports from taxes.

✓ Prohibit the requirement of the transfer of software source code and encryption as a condition market access.
Steps for More Robust Digital Trade (III)

- Enact a commercially meaningful de-minimis threshold for low-value e-commerce packages—exempt packages worth less than USD $200 from taxes/duties.

- As part of improved trade facilitation, simplify returns processes, certificates of origin and duty drawback procedures, and streamline VAT collection on trade.

- Create appropriate intermediary liability safe harbors.

- Legal recognition of digital signatures and financial payment services.

- Allow inward investments in all ICT industries.
Steps for Domestic Digital Policy

✓ Eliminate ICT-specific taxes.

Source: Robert D. Atkinson and Ben Miller, “Ranking 125 Nations by Taxes and Tariffs on ICT Goods and Services,” (Information Technology and Innovation Foundation, October 2014), Figure 2, Appendix B.
Steps for Domestic Digital Policy

- Don’t subject OTT providers to telecom regulation.
- Embrace light touch, opt-out privacy rules.
- Focus on 5G, not gigabit networks.
Make Government a Force for Digital Innovation (I)

✓ Have access to an innovation “Incubator”. (e.g., US “18F” or UK Government Digital Services).

✓ Put innovation in the strategic plans/agendas of all agencies. (e.g., Dept. Transportation & ITS; Dept. Energy & Smart Grids/Meters).

✓ Appoint a Chief Innovation Officer (CIO) for every agency.

✓ Establish an “Office of Innovation Review” within the government. (Mission to screen the impact of laws/regulations on innovation).
Make Government a Force for Digital Innovation (II)

- Industry 4.0
- Agriculture 4.0
- Mining 4.0
- Electricity 4.0
- Education 4.0
- Financial Services 4.0
- Transportation 4.0
Yale University Press, 2013
Obriagdo!

Robert D. Atkinson | ratkinson@itif.org | @RobAtkinsonITIF