**Policy brief**

**Data flows in supply chains**

**OUTLINE**

This document outlines the draft structure and proposed timeline for a short (4-5 page) paper on the role of data flows in global supply chains.

The paper will be a practical brief with two diagrams showing:

* How data flows function in supply chains
* The role of data flows in supporting trade processes and business operations.

This is not a deep dive into the broader policy debates on data governance. Rather, the goal is to help policymakers better understand how supply chains operate in practice, particularly the role of data flows in facilitating trade. By providing a clear, business-focused perspective, the brief aims to ensure that trade policy discussions are informed by real-world supply chain dynamics.

The brief will highlight the potential adverse effect of restrictive data policies on trade and provide key recommendations for fostering trade policies that allow secure and trusted cross-border data flows.

**Target Audience**:

This paper is intended for policy makers who have a stake in trade policy issues under discussion. While the target audience is primarily officials involved in trade policy discussions, the tone and terminology should be accessible to a non-specialist reader.

Below is the draft outline and timeline for the paper.

**Draft outline**

1. **Introduction:**
   1. **Role of data in supply chains**: Data flows are essential for efficient, resilient and interconnected global supply chains. Businesses rely on real-time data exchange to manage all aspects of their operations. 65% of annual global gross domestic product is enabled by cross-border data flows (Cross Border Data Flows Report, Zurich Insurance Group, 2022).
   2. **Challenges to cross border data flows:** The lack of multilateral coordination and fragmented regulatory landscape create barriers to trade for businesses. Key regulatory issues affecting supply chains include data localization requirements, varying data protection laws, cybersecurity regulations (e.g., encryption standards, source code access).
   3. **Impact on trade and business**: Restrictive or fragmented data policies lead to increased costs, inefficiencies, and lost business opportunities, limiting companies’ ability to optimize supply chains and remain competitive. Inconsistent data regulations also act as non-tariff barriers, reducing firms’ ability to expand into global markets and affecting the growth of digital trade.
2. **Visuals**

The brief will include two diagrams:

**Diagram 1: Data Flows in Supply Chains – Key Stages, Data Types, and Business Interactions**

* **Overview**: This diagram will illustrate how data flows across different stages of the supply chain, with a focus on a specific stage \_ such as sourcing of raw materials, manufacturing, inventory management, shipping, or retail.
* **Key Elements:** 
  + **Types of data:** the diagram will categorize data exchanged in supply chains into personal, non-personal, operational, and performance data.
  + **Key supply chain actors:** the diagram will identify major actors in the supply chain process, from suppliers to retailers, and highlight the data-driven interactions between them, with a focus on business-to-business exchanges.
* **Illustrative example for 1st visual:** Use a sector specific example, such as agriculture and/or manufacturing (either hypothetical or based on inputs from member companies) to demonstrate how companies use data flows to improve trade processes (e.g., optimise supply chains, improve operational efficiency, and enhance customer satisfaction).

**FOR FEEDBACK:** To make the illustration more concrete, we propose to focus on agrifood or manufacturing. Please advise which sector the diagram should focus on (e.g., agriculture or manufacturing).

**Diagram 2: Regulatory Barriers to Data Flows – Impact on Supply Chain** **Connectivity**

* **Overview:** This diagram will illustratehow regulations hinder data flows and create a fragmented environment for businesses to operate in.
* **Key elements:** This visual will highlight relevant data regulations or contractual arrangements for data transfers governing data transfers at different stages of the supply chain.

1. **Key stages in supply chain ‘trade lifecycle’ and the types of data typically transferred.**

The table below is a non-exhaustive overview of the types of data that crosses borders.

|  |  |  |
| --- | --- | --- |
| **Supply chain stage** | **Type of data transferred** | **Data classification** |
| Supply (sourcing of raw material) | - Supplier information - Material specifications - Compliance certificates - Purchase orders - Delivery schedules | Non personal data |
| Manufacturing | - Production schedules - Bill of materials - Equipment maintenance records - Quality control data - Inventory levels | Non personal data |
| Distribution (shipping and logistics) | - Shipping manifests - Tracking information - Customs documentation - Carrier contracts - Delivery timelines | Non personal data |
| Consumer (retail and end-user) | - Sales data - Customer feedback - Warranty information - Return and refund records - Marketing analytics | Personal data (minus the Sales data) |
| Business operations that support all above stages | Workforce management (i.e. production, logistics, sales, training, recruitment and performance) | Personal data (employee information, financial data linked to employees), and non-personal data (trainings, workforce analytics at aggregate level) |

1. **Key Trade Policy Challenges for Data Flows in Global Supply Chains**

The paper will briefly highlight the key trade policy challenges for data flows in global supply chains:

**Regulatory fragmentation creates supply chain uncertainty**

* No global framework for cross-border data flows; governments take different approaches (unilateral, trade agreements), increasing compliance costs and uncertainty.
* Inconsistent regulations increase compliance costs and disrupt supply chain integration.
* Supply chain operators must maintain different data handling protocols for each market they operate in

**Data Localization as a Barrier to Supply Chain Efficiency**

* Restrictions on where data can be stored/processed slow down logistics, inventory management, and trade finance.
* Prevents centralized supply chain visibility and real-time decision-making across global operations
* Forces companies to fragment their supply chain management systems, creating inefficiencies and blind spots

**Restrictive Data Policies Increase Supply Chain Costs & Complexity**

* Modern supply chains depend on seamless data transfers for tracking shipments, optimizing logistics, and managing supplier relationships.
* Fragmented rules make it harder for businesses to operate across borders, raising costs and reducing efficiency.
* Digital supply chain innovations (IoT tracking, predictive inventory, supply risk analytics) hindered by data flow restrictions

**Lack of Interoperable Standards Limits Supply Chain Digitalization**

* Supply chain partners must navigate conflicting data regulations, making it harder to implement end-to-end digital solutions
* MSMEs in supply networks face particular challenges integrating with global supply chains due to complex compliance requirements
* Inconsistent digital documentation standards create friction points across the supply chain

**Confidential Business Information (CBI) & Compliance Risks**

* Supply chain data (e.g., supplier networks, inventory levels, logistics routing, trade finance records) contains sensitive competitive information
* Forced data sharing in some jurisdictions increases risks of proprietary supply chain information exposure
* Weak data protections in some jurisdictions increase risks of misuse or exposure.

1. **ICC Recommendations to promote the free flow of data in supply chains**

The paper will conclude with the following recommendations:

**Pursue Multilateral Rules at the WTO**

* Pursue multilateral discussions at the WTO, including within the JSI on E-Commerce, to establish clear trade rules on cross-border data flows
* Advocate for risk-based and evidence-based regulatory approaches that avoid unnecessary trade barriers
* Support differentiated obligations for various data types based on actual risk levels

**Ensure Open and Interoperable Cross-Border Data Frameworks**

* Oppose indiscriminate data localization mandates that require all data—regardless of type—to be stored locally, disrupting global trade and supply chains.
* Advocate for flexible and innovation-friendly data governance frameworks in trade negotiations that do not mandate specific technologies or systems
* Prioritize regulatory coherence and mutual recognition of standards
* Promote regulatory frameworks that protect security and privacy without imposing unnecessary restrictions on trade and data-driven business models
* Promote policies in trade agreements that differentiate between personal and non-personal data to enable proportionate, risk-based regulation

**Safeguard Confidential Business Information in Cross-Border Data Regulations**

* Oppose forced data-sharing mandates that require businesses to disclose proprietary supply chain information (e.g., supplier networks, inventory levels, trade finance records) without adequate protections.
* Advocate for strong protections against misuse of commercially sensitive data in trade agreements and regulatory frameworks.
* Support clear, enforceable mechanisms to ensure that trade-related data transfers are subject to privacy, security, and non-discriminatory treatment provisions.

**Support a Digital Trade Enabling Environment**

* Promote harmonized digital trade documentation standards to reduce friction in supply chains
* Encourage the development of data handling certification programs within trusted trader frameworks to enhance supply chain security and efficiency.
* Advocate for supply chain digitalization provisions in trade agreements

**Quotes and other supporting messages**

The paper will also include:

* 1. Quotes from companies in break-out boxes providing real-life reflections on the adverse effects of data flow restrictions (e.g. SMEs in developing countries, multinational).
  2. Breakout box with an overview of the WTO Joint Statement Initiative (JSI) principles on e-commerce.
  3. An additional resource section at the end with links to relevant ICC papers and related statements.

**Estimated timeline**

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| --- | --- | --- |
| **Activities** | | **Deadline/Status** |
| Drafting | Develop outline of paper | 26 March |
| Prepare **(1)** first draft of paper based on feedback received from leaders on outline, and **(2)** supply chain visuals (Design team). | 15 April |
| Review period of first draft by TIC + DEC leaders | 22 April |
| Prepare second draft of paper | 25 April |
| Review period for comments from DEC + TIC Commissions | 25 April-2 May |
| Finalise document | 12 May |
| Design | Design of final brief | 16 May |
| Launch | Official launch date to be agreed | 19 May (TBC) |