

The Impact of Cross-Border Data Flows on Digital Trade in RCEP Countries and Policy Responses

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Abstract

With the rapid development of the global digital economy, digital trade has become an important component of the world economy. As a core driver of digital trade, cross-border data flows run through every stage of digital transactions and, amid the digital transformation of the global economy, have a significant impact on transaction efficiency and business-model innovation. First, after clarifying the concepts of digital trade and cross-border data flows, this paper describes stylized facts about digital trade using data from the UNCTAD database. Second, given RCEP's important position in the global economy and its substantial potential in digital trade, the paper examines the current state and limitations of data-flow regulation under the existing framework. Finally, it compares the regulatory policies of China, the United States, and the European Union and identifies current regulatory challenges. The findings indicate that cross-border data flows positively affect digital trade among RCEP members, while also raising issues concerning data sovereignty, privacy protection, and development gaps within the region. The paper emphasizes the urgent need for unified rules on cross-border data flows under the RCEP framework to promote the secure and balanced development of regional digital trade. It further recommends that China, as an RCEP member, actively advance data sharing and security cooperation, continuously reduce barriers to digital trade, and address regulatory risks and challenges while realizing economic benefits, thereby contributing a China-based approach to the prosperity of regional digital trade.

Keywords

Digital trade; Cross-border data flows; RCEP

1. Introduction

As digital trade expands rapidly, the global economic landscape is undergoing profound change. Cross-border data flows, a core driver of digital trade, have not only substantially improved the efficiency of global transactions but also fostered innovation in business models. At the same time, however, concerns over privacy protection and data security pose serious challenges to the stable development of

digital trade. The prosperity of digital trade under the Regional Comprehensive Economic Partnership (RCEP) depends heavily on sound data-flow rules and effective regulatory mechanisms. For RCEP members, comprehensively identifying the dual effects of data flows and coordinating the relationship between the free flow of data and privacy protection are essential to ensuring secure and efficient economic cooperation and trade. Achieving this balance has important practical significance for regional economic integration and the sound development of digital trade.

RCEP originated as an initiative of the ten ASEAN member states and gradually expanded to include China, Japan, the Republic of Korea, Australia, and New Zealand. It was formally signed on November 15, 2020, marking the creation of the world's largest free trade area. Its 15 members together account for approximately 30 percent of the world's population, economic output, and total trade, meaning that roughly one-third of the global economy has been brought into an integrated market. RCEP contains market-access commitments covering trade in goods, trade in services, intellectual property, electronic commerce, investment, and other fields. Digital trade is a major feature of the agreement. Its electronic-commerce chapter establishes rules on matters such as facilitating cross-border data flows, protecting consumers and personal information, and strengthening cybersecurity. These provisions reduce barriers to digital trade and create additional opportunities for cooperation in emerging fields such as artificial intelligence and blockchain.

Using literature analysis, comparative research, and case analysis, this paper examines the multidimensional effects of cross-border data flows on digital trade and contributes to coordinated regional regulation of data flows within RCEP. It addresses a gap in research on cross-border data flows under the RCEP framework. Theoretically, the study deepens understanding of the mechanisms through which digital trade develops. Practically, it provides a reference for RCEP members seeking to improve data-flow regulation, promote digital trade within the region, and contribute to the sound development of global digital trade.

2. Literature Review

The relationship between digital trade and economic development in RCEP has been widely discussed. Existing studies generally conclude that digital trade plays an important role in reshaping the region's economic structure and strengthening its competitiveness. Driven by market demand, trade in goods, policy and institutions, technological innovation, infrastructure development, and capital flows, the RCEP region has substantial potential for digital trade (Zhang, 2022). Improvements in the level of the digital economy significantly enhance the competitiveness of member states in trade in services (Yang, 2024). Xie and Luo (2022) further examine how digital trade facilitates trade among RCEP members, reduces trade costs, and promotes industrial upgrading, thereby demonstrating its strategic value.

At the same time, global attention to the governance of cross-border data flows has increased. A substantial body of research indicates that sound regulation which facilitates data flows can reduce trade costs, improve consumer welfare, and support sustained economic growth (Aaronson, 2019; Ferracane and van der Marel, 2020; Meltzer, 2019). Freer data flows can also mitigate certain security risks created by mandatory localization and reduce the potential cost of digital innovation (Svantesson, 2020). With respect to domestic regulation, the framework proposed by Casalini and López González (2019) shows that countries adopt diverse regulatory measures in pursuit of privacy protection, industrial development, national security, and other objectives. Nevertheless, regulation of cross-border data flows under RCEP continues to face problems, including insufficient regulatory attention, the absence of detailed provisions governing the cross-border transfer of personal information, and requirements that remain relatively broad and loosely specified.

Imbalances in domestic standards, regulatory rules, and infrastructure for digital industries have widened the digital divide. Developing economies often lack adequate technology and rule-making influence, leaving them at a disadvantage in negotiations over cross-border data-flow rules and frequently requiring them to accept standards led by Europe and the United States. Gao Jiang and Sheng (2024) emphasize that cross-border data flows are essential to digital trade and that countries regulate them differently according to their interests. They argue that China should use free trade zones to improve security-assessment mechanisms for outbound data, expand the opening of service sectors, cultivate cybersecurity enterprises, build digital infrastructure, and participate actively in global governance. Gao Lanying and Deng (2024) analyze shortcomings in RCEP's cross-border data-flow provisions from a legal perspective and recommend that China strengthen data-sovereignty protection, improve classified and tiered regulation, and advance a distinctive Chinese approach to the sound development of data flows. Huang and Kang (2024) contend that RCEP's digital-trade rules are weakly binding in the areas of data flows and personal-information protection. They recommend drawing on high-standard rules from developed economies, improving digital-trade infrastructure, and promoting regional economic integration and digital-economic development. Taken together, these studies examine the evolution of cross-border data-flow rules, differences among countries, and possible future directions from economic, legal, and policy perspectives.

In summary, digital trade creates unprecedented opportunities for economic development in the RCEP region, but the regulation of cross-border data flows remains challenging. Promoting data flows while ensuring data security, privacy protection, and regulatory compliance will be a central issue in the region's future development. RCEP members must therefore deepen cooperation, coordinate policies, and pursue innovation in order to promote a prosperous and sustainable

digital economy.

3. Digital Trade and Cross-Border Data Flows

3.1. Definition and Stylized Facts of Digital Trade

Digital trade can be broadly defined as commercial activity enabled by digital technologies, encompassing transactions conducted through the Internet and other electronic networks. It includes not only conventional electronic commerce but also digital products and services, data flows, digital payments, and digital marketing. Its principal characteristics are platformization, digitalization, and personalization. Platformization means that trade relies on online platforms such as e-commerce websites and applications. Digitalization highlights the central role of data, including product information, transaction records, and customer data. Personalization refers to the ability of digital trade to provide products and services tailored to specific consumer needs.

Over the past nine years, global digital trade has grown markedly. According to the United Nations Conference on Trade and Development (UNCTAD), As Figure 1 show, developing economies made substantial progress in digitally deliverable services between 2015 and 2023. Their exports of digitally deliverable services exceeded USD 1 trillion for the first time in 2023, and such services consistently represented more than 40 percent of their total services exports from 2020 through 2023. These figures suggest that developing economies are gradually narrowing the gap with developed economies in digitally delivered services and demonstrate strong growth potential. Global exports of digitally deliverable services reached USD 4.5 trillion in 2023. In both developing and developed economies, these exports grew faster than exports of other services, illustrating the increasing importance and influence of digital trade in the world economy and its resilience as a new engine of global growth.

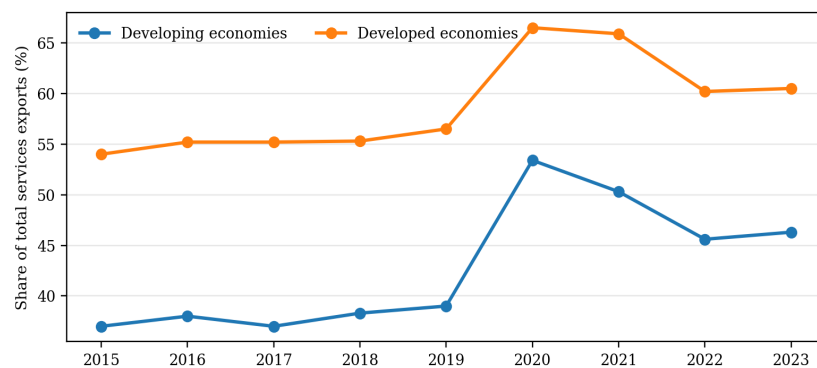


Figure 1. Digitally deliverable services as a share of services exports, 2015–2023. Source: UNCTADstat;

Digital trade has become an important force driving global trade growth. As Figure 2 show, in 2023, global exports of information and communication technology (ICT)

services reached USD 2,534.417 billion, while total global services exports reached USD 7,913.451 billion. Digital trade thus maintained strong momentum.

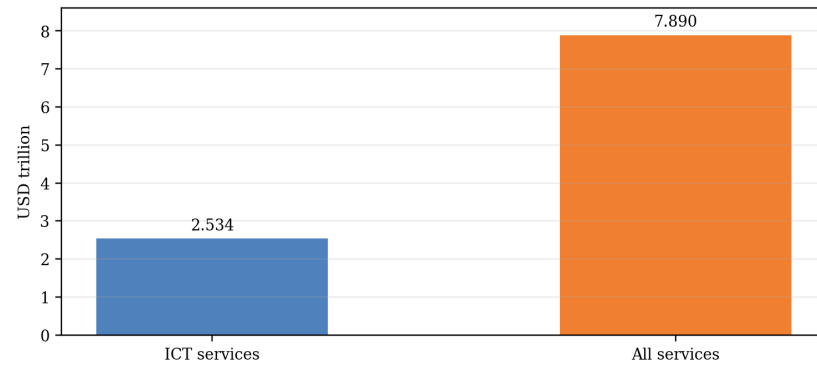


Figure 2. Global ICT-services and total services exports, 2023.

As Figures 3 show, among RCEP members, China, including the mainland, Hong Kong, Macao, and Taiwan, recorded particularly rapid growth: its ICT-services exports rose from USD 695.227 billion in 2010 to USD 1,320.747 billion in 2023, an increase of approximately 90 percent. This growth is reflected not only in trade volume but also in stronger digital-services export capacity and an improved trade structure. digital trade has become an important component of economic growth among RCEP members.

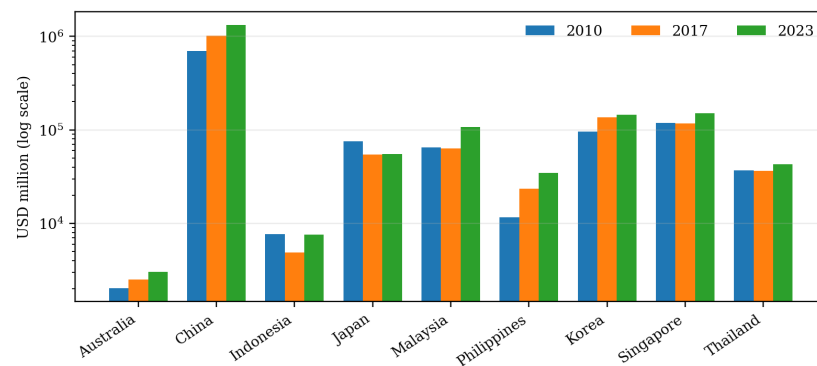


Figure 3. ICT-export values for selected RCEP economies, 2010, 2017, and 2023.

3.2. Definition of Cross-Border Data Flows

Cross-border data flows refer to the transmission, storage, and processing of data across national or regional borders through electronic networks. They encompass personal information, business information, and technical data. By transcending geographical and sovereign boundaries, cross-border data flows are not only a product of advances in digital technology but also a foundation of the global economy's digital transformation and an important engine of cooperation in digital trade.

Cross-border data flows are a core support for the efficient operation of digital trade

and run through every stage, from digital ordering and online payment to digital delivery. At the ordering stage, real-time data transmission matches consumer demand accurately with suppliers' products and ensures that orders are generated correctly. During online payment, data flows support secure global transactions, including the verification of payment information, foreign-exchange conversion, and immediate completion of payments. In digital delivery, cross-border data flows enable the instantaneous transmission of digital content, improve the tracking and distribution of physical goods, and support coordination across global trade networks.

Cross-border data flows improve transaction efficiency and reduce operating costs through real-time information exchange. E-commerce platforms depend on data flows to update inventory and logistics information promptly, thereby avoiding stockouts and delivery delays caused by stale information. Data flows also support the development of digitally intensive industries, particularly ICT, by facilitating the global expansion of services and enabling innovation. They have also contributed to the emergence of business models such as the sharing economy and the on-demand economy, allowing firms to understand market demand through big-data analysis and rapidly refine products and services. Overall, cross-border data flows accelerate the development of digital infrastructure and promote the integration and growth of the global digital economy.

3.3. Current Regulation and Limitations of Data Flows under RCEP

Article 12.15 of RCEP's Electronic Commerce chapter provides that a party shall not prevent the cross-border transfer of information by electronic means when the activity is for the conduct of a covered person's business, while allowing measures necessary to achieve legitimate public-policy objectives and protect essential security interests. Although this provision supplies a general framework for cross-border data flows, the lack of detailed implementation rules produces substantial variation among members. In particular, RCEP does not clearly distinguish how different categories of data should flow or identify which data should be restricted. Consequently, members differ considerably in their regulation of data flows and protection of privacy.

Significant differences among members' approaches to data-flow regulation reflect their distinct priorities and strategic interests in digital trade (Table 1). Singapore, the Republic of Korea, and Japan generally support the liberalization of cross-border data flows, viewing freer flows as a means to improve industrial efficiency, stimulate innovation, and advance global economic integration. China, by contrast, gives greater weight to data sovereignty and national security and imposes stricter protection and localization requirements for specified categories of data. China's Cybersecurity Law and Data Security Law establish domestic-storage and security-management requirements for certain sensitive, important, or critical data,

while outbound transfers may be subject to security assessment or other compliance procedures. Although such policies strengthen regulatory control, they can also create obstacles to cross-border data flows and affect the smooth operation of regional digital trade. These differences generate friction in RCEP implementation and weaken the agreement's potential to advance digital-economic integration.

Table 1. Digital-Trade Policies of Selected RCEP Members

Country	Digital-Trade Policies
China	Issued policy instruments including the Opinions on Accelerating the Development of New Forms and Models of Foreign Trade.
Japan	Launched its digital-policy strategy, including accelerated deployment of beyond-5G technologies to maintain international competitiveness.
Republic of Korea	Committed approximately KRW 76 trillion to digital-economy support, including big-data platforms, fifth-generation mobile communications (5G), artificial intelligence, and other digital infrastructure.
Australia	Published Australia's Tech Future: Delivering a Strong, Safe and Inclusive Digital Economy, enabling businesses to seize opportunities in the rapidly growing modern economy and compete globally.
Ten ASEAN Member States	Adopted the ASEAN Digital Masterplan 2025, which seeks to make ASEAN a leading digital community and economic bloc powered by secure and transformative digital services, technologies, and ecosystems.

3.4. Comparative Analysis of Existing Cross-Border Data-Flow Policies

Regulation of cross-border data flows varies globally, as seen in the distinct models of the US, EU, and China, each prioritizing different policy objectives. These approaches offer useful lessons for RCEP members, suggesting a need for flexibility in data-flow rule-making.

The United States has traditionally favored a market-oriented approach to cross-border data flows and has advocated reducing unnecessary restrictions on the grounds that freer data flows promote innovation and economic growth. Rather than relying on a single comprehensive federal data-protection statute, the United States uses a combination of sector-specific laws, state laws, regulatory enforcement, and voluntary or contractual mechanisms. Earlier transatlantic arrangements such as the EU-U.S. Privacy Shield were invalidated in 2020 and have since been replaced by the EU-U.S. Data Privacy Framework. The U.S. model emphasizes the convenience and efficiency of data flows, but its fragmented structure can create uneven privacy protection and compliance complexity.

The EU approach centers on the GDPR, emphasizing privacy rights and data security. It imposes strict conditions on personal data transfers outside the EEA. Lawful transfers require an adequacy decision, safeguards, or statutory derogations. The GDPR sets a high global benchmark, stressing compliance and transparency. While effective for privacy and security, it also raises the complexity and costs of cross-border transfers. China's regulation of data flows emphasizes data sovereignty and uses the Cybersecurity Law, Data Security Law, Personal Information Protection

Law, and supporting measures to govern data localization and outbound transfers. China applies classified and tiered management according to the importance and sensitivity of data. Its approach seeks to protect national data security while supporting international cooperation and legitimate data flows. In developing compliance mechanisms for outbound data, China has continued to clarify security assessments, standard contracts, certification, and exemptions, with the aim of facilitating international digital-economic activity while safeguarding data security.

3.5. Challenges Posed by Cross-Border Data Flows to Digital Trade in RCEP

The regulation of cross-border data flows faces multiple challenges, of which data sovereignty, privacy protection, and uneven regional development are the most prominent. First, competition over data sovereignty makes regulatory coordination more difficult. In sensitive sectors such as finance and health care, governments tend to impose stringent protection measures. Divergent approaches lead to substantial differences in policy implementation among RCEP members and further increase barriers to digital trade. Second, inadequate privacy protection is a major concern. As personal data circulate globally, the risk of leakage increases. Differences in privacy laws, technical safeguards, and enforcement capacity raise the likelihood of misuse or unauthorized disclosure during cross-border transfers, undermining consumer trust and the stable development of the digital economy. Third, gaps in digital infrastructure among RCEP members are especially pronounced in developing economies. Limited network infrastructure and data-processing capacity place these economies at a disadvantage in digital trade and widen the regional digital divide. Such disparities not only restrict the ability of lower-income economies to benefit from cross-border data flows but also make it more difficult for them to implement relevant regulations. Addressing these challenges requires stronger policy coordination among members, with rules calibrated to different levels of development so as to promote shared growth and regional cooperation.

4. Conclusions and Policy Recommendations

This paper systematically analyzes the role of cross-border data flows in digital trade among RCEP members. Changes in the global trade structure and trends in digital trade show that cross-border data flows occupy a central position in digital trade, have become an important dimension of global economic competition, and strongly support regional economic integration. Within the RCEP framework, the paper examines the current state of data flows, development opportunities, and major challenges. It finds that data flows promote digital-economic integration and enterprise competitiveness but also raise problems involving data sovereignty, privacy protection, regulatory coordination, and unequal digital infrastructure.

Although RCEP supports regional data flows, its lack of detailed implementation rules leads to differences in practice, while regulatory mechanisms remain incomplete, particularly in the areas of data sovereignty and privacy protection. The analysis demonstrates the contribution of data flows to regional economic integration. A pressing question is how regional cooperation and policy innovation can maximize the potential of digital trade while protecting data security. It is therefore necessary to deepen research on global governance and cooperation mechanisms, improve policy recommendations, and seek an operational and forward-looking balance among free data flows, privacy protection, and data sovereignty.

First, RCEP should formulate more consistent rules for cross-border data flows as soon as practicable. A coherent and transparent regulatory framework could provide an innovative model for governing global digital trade and help advance regional standards. RCEP should explore a pathway that protects privacy and security while permitting legitimate cross-border data flows, thereby offering practical experience for global digital governance. Second, RCEP should promote more balanced development of digital infrastructure. Many members still invest insufficiently in such infrastructure, which constrains the region's overall digital-economic potential. Technology sharing, resource cooperation, and financial support can help narrow the digital divide, improve the region's overall digital competitiveness, and provide a solid technical foundation for deeper economic integration.

As an RCEP member, China should, first, take concrete measures to promote regional data sharing and data-security cooperation and seek mutually reinforcing outcomes for data flows and privacy protection. By supporting convergence around interoperable data-protection standards, China can help ensure security and privacy while facilitating efficient cross-border data flows. Second, China should increase investment in digital-trade infrastructure. Stronger infrastructure would not only improve China's own technological capacity but also enable it to provide necessary technical support to other members. Third, China should continue to reduce barriers to digital trade and gradually pursue secure openness in cross-border data flows. Subject to effective data-security safeguards, China should promote digital-trade liberalization, create a more convenient environment for cross-border business operations, and contribute to global digital-economic growth.

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