

The Driving Forces, Challenges and Countermeasures of China-ASEAN Digital Trade Cooperation Governance under the New Development Pattern

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Abstract: Against the backdrop of the new development pattern, digital trade cooperation between China and ASEAN has demonstrated strong growth momentum. The "Digital Belt and Road Initiative" and the RCEP framework have provided dual support in terms of policies and markets for both sides. New business forms such as digital services, cross-border e-commerce, and digital finance have risen rapidly, forming complementary advantages. However, the cooperation process still faces multiple challenges. The digital infrastructure of ASEAN member states is unbalanced, the data governance system is fragmented, cross-border data flows are restricted, and digital trade barriers remain prominent. To this end, it is necessary to improve the governance system for cross-border data flow between China and ASEAN, innovate the "common supply" model of digital trade rules, create a new pattern of digital trade governance featuring "multi-party co-governance", and implement countermeasures and suggestions for the deep integration of digital governance technology standards and regulatory mechanisms. This will further unleash the potential of digital trade cooperation between China and ASEAN and promote high-quality development of the regional digital economy.

Keywords: New Development Pattern, China-Asean, Digital trade, Cooperative governance.

1. Introduction

Now the world has entered in the digital age. The various behavioral games in the digital field are no longer confined to the competition of economic strength, but have begun to intensify the competition for the right to formulate global digital governance rules. Digital governance is shifting from "governing with numbers" to "governing with numbers". With the rapid development of information technology, digital trade has begun to emerge as a new business form globally. The issue of digital trade governance among countries has become increasingly prominent and has become an important topic among them. Under the background of the new development pattern, the digital economy has become a key engine for promoting high-quality cooperation between China and ASEAN. With the deepening of the Regional Comprehensive Economic Partnership (RCEP) and the Digital Belt and Road Initiative framework, China and ASEAN countries have formed significant complementary advantages in new business forms such as cross-border e-commerce, digital service trade, and digital finance. The scale of digital trade has grown rapidly and now accounts for more than 60% of bilateral service trade. China, with its well-developed digital infrastructure and mature e-commerce ecosystem, offers opportunities for technology spillover and market connection to ASEAN. Meanwhile, the rich natural resources, cultural diversity and increasingly sophisticated digital economy policies of ASEAN countries provide new impetus for Chinese enterprises to expand their regional markets. However, China-Asean digital trade cooperation still faces multiple challenges. There is a significant imbalance in the construction of digital infrastructure, the popularization of broadband and the deployment of 5G, which has restricted the cross-border data flow and logistics efficiency between China and ASEAN countries. The data governance system within the region is fragmented, and there are significant differences

in laws and regulations, cybersecurity standards, and requirements for personal information protection, gradually forming digital trade barriers. Furthermore, the lack of unified standards in technical rules and collaborative supervision has led to an increase in cooperation costs among multinational enterprises. Based on the above-mentioned driving forces and challenges, this article will conduct an analysis around the following three aspects: First, sort out the market opportunities and cooperation driving forces of China-Asean digital trade under the new development pattern; The second is systematic analysis.

2. Motivations for the Governance of China-Asean Digital Trade Cooperation under the New Development Pattern

With the development of the global digital economy, the governance of digital trade cooperation has increasingly become a development theme between China and ASEAN countries. This year, China and ASEAN have proposed to jointly create a new digital industry ecosystem, deepening cooperation between China and ASEAN countries in the field of digital trade. The proposal of the China-Asean Free Trade Area 3.0 has provided a historic opportunity for cooperation between China and ASEAN countries, and the governance of digital trade cooperation is imperative.

2.1. It is an Inevitable Path to Promote the Construction of the Digital Silk Road

The deepening development of the digital economy has driven an increase in cross-border digital trade between China and ASEAN countries. In terms of natural resources, China and ASEAN countries have certain complementarity. In terms of digital technology and artificial intelligence, China has relatively mature experience, such as the existing 5G

networks, data centers, and artificial intelligence. In terms of consumer groups and transformational demands, ASEAN countries have huge potential markets. However, ASEAN countries lack certain digital technology settings and hardware conditions, which has led to the stagnation of development in the field of digital trade between China and ASEAN countries. Due to the complementary resources between the two sides, it provides a space for mutual cooperation between China and ASEAN countries (Song Xiaoshu, 2023). The new development pattern of "dual circulation" proposed by China emphasizes promoting the circulation of domestic and foreign markets, with the domestic market circulation as the main battlefield. The deepening development of digital trade governance between China and ASEAN countries has provided more opportunities for promoting the construction of the Digital Silk Road and is an inevitable path to advancing its development. The development of the digital economy is a key engine for achieving high-quality domestic and international economic growth. Digital trade serves as a bridge connecting domestic and international markets and enhancing the resilience of industrial chains (Ma Shuzhong, 2023). Under the background of the new dual circulation pattern, in order to enhance regional competitiveness and the resilience of the industrial chain, and to form a positive interaction in the digital field and data security, it is inevitable to build a cross-border digital trade governance system. By jointly building a digital trade governance system, the influence of other external forces can be offset to a certain extent, forming a virtuous interaction between technology and the market, and consolidating the economic influence of China and ASEAN countries.

2.2. It is the Necessary Path to Building a World Digital Talent Center

Digital talents are a scarce resource for the development of digital trade in all countries. At present, a series of policies have been successively introduced to promote the development of digital trade between China and ASEAN countries. The proposal of the Digital Silk Road has provided a top-level design and construction framework for digital trade exchanges between China and ASEAN countries. The Regional Comprehensive Economic Partnership (RCEP) has offered support and guarantee for the development of digital trade and accelerated the cross-border data flow among member states. At the Chinese level, in order to better promote the development of China's digital trade, a number of documents have been successively issued to facilitate the construction of digital trade and cross-border cooperation with other countries. For instance, documents such as the "14th Five-Year Plan for the Development of the Digital Economy" and the "Guidelines for the Construction of Digital China" have been successively released. The Association of Southeast Asian Nations (ASEAN) is also actively formulating the "Comprehensive Strategy for the Fourth Industrial Revolution", regarding China as a key partner in digital economy cooperation and promoting the initial establishment of a regional governance system. However, the current problems such as insufficient supervision of digital platforms, the security of cross-border data flows, and the insufficient resistance of member states to external competition have become new barriers to digital trade between China and ASEAN countries. To solve this problem, it is necessary to carry out mutual recognition and

intercommunication of cooperation mechanisms and rule systems. The formulation of rules and the improvement of cooperation mechanisms require the participation of high-quality digital talents, and the construction of digital talents also needs a good digital trade governance mechanism. The two complement each other. Mutual influence.

2.3. Promote the Quality Improvement and Development of the China-ASEAN Free Trade Area 3.0 Version

The signing of the China-Asean Free Trade Area 3.0 and the RCEP agreement has provided a solid institutional guarantee for digital trade cooperation between the two sides. The 3.0 version of the free trade zone has for the first time systematically established a full-chain cooperation framework covering digital infrastructure and rule standards. Actively promote mutual recognition and trust between the two sides in the fields of standards and regulations to create favorable conditions for industrial cooperation (Liu Xinwen, 2025; Lu Yige, 2025). With the vigorous development of cutting-edge digital technologies such as the Internet of Things and artificial intelligence, continuous and concealed digital security issues have emerged one after another, and digital trade governance standards have become an important part of maintaining global digital governance. When digital-related technologies are integrated into the international trade sector through cross-border e-commerce platforms and other links, digital technology is not merely a technical issue but also a trade one. Especially after digital-related trade products flow across borders, the China-Asean digital trade cooperation governance that spans multiple fields is an important component and technical support of the global economic governance system. It is also a key trend in current and future development. Enhancing the governance level of cooperation between China and ASEAN countries in the field of digital trade also contributes to consolidating the China-Asean Free Trade Area 3.0 version.

3. Under the New Development Pattern, The Governance of China-ASEAN Digital Trade Cooperation Is Facing Challenges

3.1. The Governance of Cross-Border Data Flows Lags Behind

With the continuous development of China's digital trade, China has begun to pay attention to the security issues of cross-border digital trade exchanges. Therefore, it has continuously strengthened the supervision of enterprises' cross-border data, increasing the legal and regulatory costs for some enterprises in cross-border cooperation. At present, there are no relatively unified governance rules in the field of digital trade governance. When China and ASEAN countries carry out cross-border cooperation, some enterprises are not in line with the current rapid development needs of China's digital trade, which has affected international cooperation channels and business expansion. There is a considerable gap compared with high-standard economic and trade rules such as CPTPP and DEPA. This leads to insufficient coordination between the supervision of cross-border data flow and the development of digital trade (Zhang Xuechun and Yang Qiang, 2022; Dong Anran, 2024). The rules for cross-border data flow between China and ASEAN countries show a

fragmented, multi-polarized and differentiated development trend (Gao, H, 2018; (BANGA R, 2019), the cross-border flow rules are not well connected with the international high-standard rules and the data governance rules of other economies, and the "circle of friends" of cross-border data flow is not large enough, which to some extent affects the digital trade exchanges between China and ASEAN countries. To enhance the security level of digital trade, China has established a regulatory system with the security assessment of data export as the main body. However, the data export security assessment system is characterized by government leadership, individual case assessment, and compulsion. Meanwhile, from the perspective of China's data export assessment practice, it has the features of low threshold, high cost, single compliance channels for data export, and lack of flexibility in regulatory methods (Hu Jian, 2024; Li Jun, 2023). From a practical perspective, security assessment still plays a dominant role, while the application space for personal information protection certification and enterprise standard contracts is relatively small and their development lags behind. This lags far behind the multi-channel data export compliance systems adopted by Western countries such as those in Europe, America, and Japan, including the national sufficiency certification (white list system), enterprise certification, and standard contracts.

3.2. Deficit in Digital Trade Governance Rules

The rapid development of digital trade has brought about a series of rule issues. On the whole, the development of digital trade is not only manifested in the lag and inconsistency of rule formulation, but also in the existence of institutional gaps. These deficits restrict the free flow and fair competition of digital trade, and it is urgent to fill the rule gaps through multilateral consultation and regional cooperation. The existing traditional international trade rules are no longer effective in responding to the changes brought about by digital trade, resulting in a significant deficit in rule supply. It is necessary to quickly establish a unified, transparent and enforceable governance framework for digital trade. In terms of the governance system for digital trade, the traditional multilateral trade framework shows a fragmented and monotonous situation, lacking unified institutional arrangements. The main manifestations are the differences in positions among economies on key issues such as privacy protection, digital taxation, and cross-border data flow, which have led to fragmented rules and even the emergence of new technical barriers and localized requirements, further increasing the cost of cross-border digital trade cooperation between China and ASEAN countries. In addition, there is an imbalance between supply and demand in the governance of digital trade between China and ASEAN - the lack of standards and insufficient rule supply have led to the absence of an operational rule system in areas such as cross-border data flow and access to digital services, which has become a pain point restricting the development of digital trade. Under the constraints of both the lack of systematic norms and the failure to effectively balance the interests of various countries, the process of formulating governance rules for digital trade cooperation shows fragmented and highly competitive characteristics (Wei Hao, 2024).

3.3. The Governance Subjects of Digital Trade Are Fragmented

The fragmentation of governance subjects in digital trade

refers to the situation where, against the backdrop of the rapid development of the digital economy, multiple governance subjects involved in rule-making, enforcement and supervision are scattered, overlapping and lack unified coordination. Due to the inconsistency of governance subjects, the rules are not uniform. China and ASEAN countries still face the problem of fragmented governance subjects in promoting the governance of digital trade cooperation. This has further weakened the efficiency and fairness of digital trade and hindered the coordinated development of digital trade between China and ASEAN countries. For instance, although the traditional multilateral platform, the World Trade Organization (WTO), has reached initial consensus on issues such as e-commerce declarations, it still lacks systematic rules on core topics like cross-border data flows and access to digital services, leading countries to fill in the gaps on their own. Transnational Internet platforms, industry associations and non-governmental organizations also play significant roles in standard setting, technical norms and self-regulatory governance, forming a multi-governance network at three levels: government, enterprises and the public. However, the integrity of the governance subjects is not strong and they are relatively scattered. The major economies, with data localization and security review at their core, have launched different digital trade templates and implemented various governance templates based on their own technological advantages and industrial policies, all of which are highly individualized. The number of regional trade agreements (RTA) and bilateral digital trade agreements (DTA) has soared, but these agreements have inconsistent or even conflicting rules in areas such as data governance, cross-border data flow, and platform responsibility, further exacerbating the fragmentation of digital trade governance subjects (Li Jiahui, 2025; Li Hongying, 2024).

3.4. The Technical Supervision and Collaboration in Cooperative Governance Are Disconnected

Under the new development pattern, the deepening cooperation in digital trade between China and ASEAN relies heavily on the cross-border integration and application of cutting-edge technologies such as artificial intelligence, blockchain and cloud computing. However, at the level of technological supervision and collaboration, both sides are confronted with increasingly prominent governance challenges, which directly affect the efficiency of technological mutual trust and collaborative innovation. China and ASEAN countries have not yet established unified technical regulations in areas such as artificial intelligence and data processing. For instance, Singapore has released a relatively forward-looking AI governance testing framework, encouraging cross-border enterprises to conduct self-assessments. In contrast, countries like Indonesia may pay more attention to the impact of AI on local employment and the market. At present, China and ASEAN countries are at different stages of exploration and legislation in the technical supervision of cooperative governance. Due to the inconsistent pace of supervision, governance rules show a fragmented synergy. This has led to entry barriers for China's launch of digital trade products targeting the ASEAN market (Liang Guoyong, 2023; Xiao Yu, 2023). The smooth flow of digital trade requires the establishment of a cross-border mutual recognition system for digital identities. On the trust foundation of digital trade such as digital identities and

electronic signatures, the lack of mutual recognition of technical standards constitutes a direct obstacle. For instance, China's citizen network electronic identity system and Malaysia's digital identity program are both highly advanced in technology. However, if the two sides fail to reach a mutual recognition agreement on encryption algorithms, security levels and authentication processes, then the digital certificates and electronic signatures of one country will not have the same legal effect in the other. The absence of a cross-border collaboration mechanism for digital trade has increased the compliance costs and market access time for enterprises. Many digital products and services need to undergo strict security certifications and compliance reviews before engaging in cross-border digital trade, which also indirectly constitutes an implicit trade technical barrier.

4. Governance Strategies for China-Asean Digital Trade Cooperation under the New Development Pattern

4.1. Improve the Governance System for Cross-Border Data Flows Between China and ASEAN

The supervision of cross-border data urgently requires the establishment of a unified regulatory body (BURRIM.R, 2020). At the legislative level, we can refer to the European Union to establish a data protection committee to coordinate cross-border data security matters, set up a dedicated, independent and separate administrative body for data supervision in cross-border data, with China-Asean as the main body of the institution, and form a unified functional framework for the supervision of cross-border data flows. Be responsible for promoting the specific implementation of data norms, risk assessment of data security, and governance of cross-border data flows, etc. We will further advance the negotiations and consultations among CPTPP and DEPA members on the construction of a governance system for cross-border data flows, promote China and ASEAN countries to accelerate their integration into the global digital trade rule-building trend, and actively advance the process of cooperative governance procedures for cross-border data flows. Promote the implementation of the Data Security Initiative, utilize regional multilateral channels, continuously expand the scope of digital trade cooperation, and facilitate the in-depth participation of ASEAN countries in international data governance and the construction of international regulations. Establish institutional arrangements for cross-border data flows, take the lead in signing bilateral special agreements on digital trade and cross-border data flows in Belt and Road countries (regions), carry out pilot projects for cross-border data flow supervision in specific regions, explore the establishment of special regulatory policies for cross-border data flows, explore the establishment of a white list mechanism for cross-border data flows, and establish country-specific institutional arrangements for cross-border data flows. Establish cross-border offshore data centers to achieve free and convenient flow with overseas regions, better serve cross-border economic and trade cooperation, and break through the institutional barriers to cross-border data flow.

4.2. Innovate the "Common Supply" Model of Digital Trade Rules

Formulate the "High-Standard Rules and Guidelines for Digital Trade" based on the advanced provisions of the DEPA and CPTPP, clearly defining key issues such as cross-border data flows, access to digital services, digital taxation, and platform responsibilities. Incorporate the guidelines into the "Regulations on Promoting and Regulating Cross-border Data Flows" for supporting implementation, forming a two-tier structure of "regulations + guidelines". Establish digital trade rule innovation experimental zones. Set up digital trade rule experimental platforms in the free trade zones of Hangzhou and Shanghai, allowing enterprises to pilot new businesses (such as digital asset trading and cross-border cloud services) in a controlled environment, and collect regulatory feedback in real time. Strengthen multilateral consultation and regional alignment. Proactively propose a unified agenda for digital trade rules in the WTO e-commerce negotiations and strive to reach a global consensus. Establish a working group for aligning digital trade rules with RCEP member states, conduct differences analysis on existing provisions, and promote the unification of standards (such as data classification and cross-border data security assessment). Jointly lead the creation of new rules for digital trade, and in emerging fields such as artificial intelligence governance, digital currency payment, and platform responsibility, jointly study and propose China-Asean solutions on issues such as AI ethical guidelines, digital tax collection principles, and the protection of cross-border e-commerce consumers' rights and interests, seizing the initiative and discourse power in rule-making. To promote the transition from soft laws to hard laws in digital trade, the first step is to encourage enterprises from China and ASEAN countries to voluntarily adopt the standards and best practices jointly formulated (i.e., soft laws). By upgrading the China-Asean Framework Agreement on Comprehensive Economic Cooperation, these can be transformed into hard laws that are binding on the contracting parties, achieving a gradual integration of the rules. Establish a shared knowledge base for digital trade rules, jointly build a multilingual online platform, update, interpret and compare the latest laws and regulations of various countries in areas such as digital market access, data privacy and digital taxation in real time, provide one-stop rule query and consultation services, and effectively address the problem of information asymmetry.

4.3. Create a New Pattern of Digital Trade Governance Featuring "Multi-Party Co-Governance"

Establish a National Coordinating Committee for Digital Trade Governance, and release a "Report on the Progress of Digital Trade Governance" every quarter to assess and disclose the implementation of policies. Promote the "Linked Supervision Platform" to establish a unified data sharing interface and achieve cross-border information exchange (such as data security assessment results and enterprise compliance filing). Clarify the list of main responsibilities and detail the responsibilities of each country in the "Regulations on Digital Trade Governance (Draft)". Strengthen the core hub role of the China-Asean Digital Ministers' Meeting. Upgrade it from a dialogue forum to a standing body with clear decision-making and coordination functions, with multiple specialized committees such as data

flow, digital standards, and cyber security under it, responsible for coordinating governance policies in various fields to avoid multiple sources of policy issuance. Establish a three-in-one consultation mechanism of "government - enterprise - society". Under the official leadership, set up the China-Asean Digital Trade Governance Advisory Committee, and widely attract the participation of leading technology enterprises, representatives of small and medium-sized enterprises, legal and technical experts, and consumer rights protection organizations from both sides. Ensure that the formulation of governance policies can fully reflect the genuine demands of market entities and enhance the feasibility and credibility of the rules. Give full play to the governance functions of platforms such as the China-Asean Expo. During the China-Asean Expo, a digital trade governance forum is regularly set up as a platform for display and negotiation. It also serves as a "soft" governance venue for all parties to declare policies, exchange views and resolve specific frictions, promoting the formation of governance consensus.

4.4. Promote the In-Depth Integration of Digital Governance Technology Standards and Regulatory Mechanisms

The governance standards of digital technology affect the convenience of digital trade between China and ASEAN. To promote the realization of cooperative governance in digital trade, it is necessary to actively promote the deep integration of digital governance technologies and regulatory mechanisms. Give priority to promoting the establishment of an equivalent mutual recognition mechanism between Chinese standards and those of ASEAN countries in areas such as electronic signatures, digital identities, and Internet of Things devices, and advance the one-time certification and regional mutual recognition of key technical standards. To facilitate the smooth flow of digital business, it is possible to promote cross-border mutual recognition of China's network electronic identity identifiers with the digital identities of ASEAN countries. In key technological fields such as artificial intelligence, blockchain and cyber security, both sides will jointly contribute funds, technologies and talents to establish joint laboratories and jointly build China-Asean joint laboratories and certification centers. At the same time, by cultivating a group of regulatory talents with common knowledge backgrounds and cooperative concepts, we will promote the synergy and mutual trust of future regulation from the root. We will implement a joint training program for digital regulatory talents and establish the China-Asean Digital Governance Academy to provide joint training for government regulators and corporate compliance officers from both sides on the latest technological trends, regulatory technologies, and policies of each other's countries. A "China-Asean Joint Certification Center for Digital Product Security" can also be established. Both sides will provide market access convenience. For digital products that pass the testing of this center, the cost of repeated certification for enterprises can be reduced.

Acknowledgements

(1) Support by the 2022 university-level research Project of Guangxi University of Finance and Economics (Project Number: 2022XJ06); (2) Support by Guangxi First-class Discipline Applied Economics Construction Project Fund

(Project Number: 2024XKC05)

References

- [1] Song Xiaoshu. The Development and Response Strategies of Digital Trade Rules from the Perspective of DEPA [J]. Commercial Economics Research, 2023, (22):134-137.
- [2] Zhang Xuechun, Yang Qiang. Analysis of the Current Situation of Digital Trade in ASEAN and Prospect of China-Asean Digital Trade Relationship [J]. Regional Finance Research, 2022, (11):5-15.
- [3] Zhu Jing'an, Sang Jiaqi. The Construction Dilemma, Solution and China's Response of Multilateral Digital Trade Rules [J]. Learning and Exploration, 2025, (01):99-108.
- [4] Ma Shuzhong, Li Zhezhou. American "Digital Hegemony": Characteristics, Driving Forces and Impacts [J]. Macroeconomic Research, 2023, (10):106-115.
- [5] Liang Guoyong. New Trends in Global Digital Trade Rule-making and China's Strategic Choices [J]. International Economic Review, 2023, (04):139-155+7.
- [6] Xiao Yu, Liang Wei. Research on the Development of China-Asean Digital Trade under the Framework of the Digital Belt and Road Initiative [J]. Journal of Beijing University of Technology (Social Sciences Edition), 2023, 23(06):58-81.
- [7] Li Jiahui, Tian Rongzhi. The Dilemmas, Trends and Chinese Countermeasures of Global Governance in Digital Trade [J]. North China Economic and Trade, 2022, (11):29-33.
- [8] Liu Xinwen, Zheng Yayuan. Digital Trade Promotes the Development of Cross-border Industrial Chains between China and ASEAN: Practical Difficulties and Breakthrough Paths [J]. Journal of Chongqing University of Technology (Social Sciences), 2020, 39(03):37-48.
- [9] Li Hongying. Challenges and Strategic Choices of China-Asean Joint Construction of the "Digital Silk Road" [J]. Times Economic and Trade, 2024, 21 (10):93-97.
- [10] Lu Yige. Construction of Digital Product Rules for the China-Asean Free Trade Area 3.0: Core Issues, Promotion Plans and China's Responses [J]. Academic Forum, 2020, 48(02):50-65.
- [11] Dong Anran, Zhang Bingbing, Cao Lijuan. New Characteristics, Challenges and Optimization Paths of China's Digital Product Exports to RCEP Partner Countries [J]. International Trade, 2024, (08):76-86.
- [12] Hu Jian. The Connotation, Value Orientation and predicaments of Global Digital governance [J]. Journal of Northwest Normal University (Social Sciences Edition), 2024, 61(01):5-14.
- [13] Li Jun, Zhao Ruojin, Fan Yuqing. The governance achievements, Problems and Improvement Suggestions of Cross-border Data Flow in China [J]. International Business Research, 2023, 44(06):84-95.
- [14] Wei Hao, Ma Maoqing, Yuan Ran. Regional Trade Agreements, Digital Trade Rules and Growth of Digital Trade Exports [J]. Journal of Beijing Normal University (Social Sciences Edition), 2024, (04):134-147.
- [15] Gao, H., Digital or trade? The contrasting approaches of China and US to digital trade. Journal of International Economic Law, Vol.21. No.2, 2018.
- [16] BANGA R. Growing trade in electronic transmissions: implications for the south [R]. Geneva: UNCTAD, 2019:18.
- [17] BURRIM, RODRIGOP. Digital trade provisions in preferential trade agreements: introducing a new dataset [J]. Journal of International Economic Law, 2020, 23(1):187-220.
- [18] The China-ASEAN Initiative on Establishing a Partnership in the Digital Economy [EB/OL]. (2020-22-120 [2022-12-22].

https://www.mfa.gov.cn/web/gjhdq_676201/gjhdqzz_681964/1hg_682518/zywj_68253/202011/t20201112_9386091.shtml.

- [19] ASEAN data management framework [EB/OL]. (2021-08-30) [2022-12-22]. [https://asean.org/wp-](https://asean.org/wp-content/uploads/2021/08/ASEAN-Data-Management-Framework.pdf)

[content/uploads/2021/08/ASEAN-Data-Management-Framework.pdf](https://asean.org/wp-content/uploads/2021/08/ASEAN-Data-Management-Framework.pdf)

- [20] Jones C. I. and Tonetti C., “Nonrivalry and the Economics of Data”, *American Economic Review*, 110 (9): 2819-2858, 2020.