

RESEARCH NOTE

The Evolution of Digital Trade Law: Insights from TAPED

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Abstract

This article discusses and contextualizes the very recent advancements in digital trade regulation based on the insights provided by the Trade Agreement Provisions on Electronic-commerce and Data (TAPED) dataset. Within the time frame of January 2020 to November 2023 that we analyze, digital trade negotiations have increased in preferential trade agreements (PTAs) significantly, and there has been a sharp rise in the negotiation of new types of treaties, known as ‘Digital Economy Agreements’. Beyond the critical advances in substantive rulemaking, we observe non-traditional actors stepping into the gap left by the shifting interest of traditional rulemakers to craft rules that best fit their policy priorities. Additionally, we see a broadening of topics beyond conventional digital trade matters, underscored by commitments of limited legal enforceability. The TAPED dataset has been updated to reflect these recent developments, emphasizing the importance of regular reviews to stay current and accurately inform research and policy-making in the area of digital trade regulation.

Keywords: digital trade; e-commerce; data flows; preferential trade agreements; digital economy agreements; TAPED

1. Introduction

The evolution of the data-driven economy is perhaps the most significant trend of the past decade. Digital trade has proven to really matter for growth and innovation in individual economies and the global economy as a whole.¹ Digital trade regulation has accordingly advanced rapidly in the pursuit of new framework conditions that move away from brick-and-mortar trade law and adequately reflect the practice of data-dependent trade – what we call ‘Trade Law 4.0’.² Since the adoption of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2018, we have witnessed a keen interest shared by governments around the world to regulate digital trade with specifically designed treaty templates. It should be pointed out that discussions and negotiations of digital trade rules have been taking place in various fora. These venues include the Work Programme on Electronic Commerce of the World Trade Organization (WTO) (WTO E-commerce Work Programme)³ and the ongoing E-Commerce Joint Initiative (JI) plurilateral negotiations⁴ at the WTO and the current advanced

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¹For the latest data, see e.g. J.L. González, S. Sorescu, and P. Kaynak (2023) ‘Of Bytes and Trade: Quantifying the Impact of Digitalisation on Trade’, OECD Trade Policy Papers 273; OECD, Key Issues in Digital Trade, OECD Global Forum on Trade 2023.

²See M. Burri (2023) ‘Trade Law 4.0: Are We There Yet?’, *Journal of International Economic Law* 26, 90–100.

³M. Burri and A. Chander (2023) ‘What Are Digital Trade and Digital Trade Law?’, *AJIL Unbound* 117, 99–103.

⁴WTO (2019) ‘Joint Initiative on E-Commerce’, WTO Doc. WT/L/1056 (25 January 2019).

e-commerce/digital trade⁵ negotiations that unfold in preferential trade agreements (PTAs) or stand-alone digital economy agreements (DEAs). This indicates that the impetus propelling the drive to negotiate rules on digital trade is in full throttle. The Trade Agreement Provisions on Electronic-commerce and Data (TAPED) dataset, administered by the University of Lucerne, has traced rulemaking developments in this vibrant field of international economic law since 2000.⁶

TAPED was initially launched in 2017 as part of the research project ‘Governance of Big Data in Trade Agreements’ and received funding from the Swiss National Science Foundation Research Programme (NRP)75: Big Data (2017–2021).⁷ This project was co-led by Mira Burri of the University of Lucerne and Manfred Elsig of the University of Bern. The scope and substance of the dataset were introduced to the research and policy community in 2020.⁸ Since 2021, as part of the European Research Council-funded Consolidator Grant project ‘TRADE LAW 4.0: Trade Law for the Data-Driven Economy’ (2021–2026) led by Mira Burri, TAPED has been regularly updated, expanded, and modified. TAPED provides insights into the significant growth of digital trade provisions in trade agreements globally, as well as into emerging issues of relevance to data governance.

This article seeks to showcase the latest developments in digital trade rulemaking from January 2020 until the latest update of TAPED in November 2023. During this period, an increase in the negotiation of digital trade commitments in PTAs, as well as the emergence of DEAs, was observed. Since January 2020, 49 agreements covering digital trade commitments have been concluded or signed, and more are being negotiated.⁹ While, at the beginning, such commitments were contained in a few provisions scattered throughout the preferential trade treaties, they have now become standard standalone substantive chapters, separate from the services and investment chapters.¹⁰ Moreover, the treaty commitments remain shallow, reflecting a divergence of domestic regulatory approaches.¹¹ However, increasingly clear patterns of broader governance convergence have slowly started to emerge, closing the gap on the erstwhile deep fragmentation that characterized rules in this area.

To keep pace with these important developments, and considering that TAPED has been incrementally used in academic discourse and to inform policymaking,¹² this article updates

⁵We acknowledge that e-commerce and digital trade are different concepts but, unless otherwise specified, we use ‘digital trade’ to refer to both in this article. See Burri and Chander, *supra* n. 3.

⁶M. Burri, M.V. Callo-Müller, and K. Kugler, TAPED: Trade Agreement Provisions on Electronic Commerce and Data, <https://unilu.ch/taped>. All data on PTAs referred to in this article are obtained from TAPED.

⁷Swiss National Science Foundation (2023) ‘The Governance of Big Data in Trade Agreements: Design, Diffusion and Implications’, <https://data.snf.ch/grants/grant/167318> (last accessed 2 November 2023).

⁸M. Burri and R. Polanco (2020) ‘Digital Trade Provisions in Preferential Trade Agreements: Introducing a New Dataset’, *Journal of International Economic Law* 23, 187–220.

⁹We count the number of agreements that were concluded or signed by 1 November 2023. This includes the EU–Kenya EPA, which was concluded but not yet signed (the text is publicly available).

¹⁰The EU has specifically removed digital trade from its services and investment chapters and established a stand-alone digital trade chapter.

¹¹S.J. Evenett and J. Fritz (2022) *Emergent Digital Fragmentation: The Perils of Unilateralism*. Brussels: CEPR Press, at 46.

¹²See e.g. J. Suh and J. Roh (2023) ‘The Effects of Digital Trade Policies on Digital Trade’, *The World Economy*; J. Wu, Z. Luo, and J. Wood (2023) ‘How Do Digital Trade Rules Affect Global Value Chain Trade in Services? Analysis of Preferential Trade Agreements’, *The World Economy*; S. Ma, Y. Shen, and C. Fang (2023) ‘Can Data Flow Provisions Facilitate Trade in Goods and Services? Analysis Based on the TAPED Database’, *The Journal of International Trade and Economic Development*; S. J. Evenett, J. Fritz, and T. Giardini (2023) ‘Deterring Digital Trade Without Discrimination’, *AJIL Unbound* 117, 104–109; B. Agrawal and N. Mishra (2022) ‘Addressing the Global Data Divide Through Digital Trade Law’, *Trade, Law and Development* 14(2), 238–289; O.F. Afori (2023) ‘Proceduralism Is not Fetishism: International Intellectual Property Lawmaking and Global Administrative Law’, in S. Frankel et al. (eds.), *Improving Intellectual Property: A Global Project*. Cheltenham: Edward Elgar, 386–396; APEC Committee on Trade and Investment (2023) ‘Economic Impact of Adopting Digital Trade Rules: Evidence from APEC Member Economies’; R. Tavengerwei, V. Mumbo, and B. Kira (2022) ‘What to Consider Ahead of the AfCFTA Phase II Negotiations: Focus on Digital Trade

and complements the emerging trends in digital trade rulemaking discussed with the first release of TAPED in October 2019.¹³ In addition, this article showcases the evolving nature of the TAPED dataset. In comparison to the 90 different coded items that the dataset initially comprised, the evolution of the provisions in PTAs, as well as the expansion of the issues being covered, warranted the addition of new coded items (in total 34) and the recategorization of old ones into five different areas – i.e., (1) e-commerce; (2) data-dedicated provisions; (3) new data economy issues; (4) cross-cutting issues; and (5) intellectual property (IP). The codebook accompanying the dataset provides more information on each coded item and keywords used to identify the relevant provisions, as well as examples of actual treaty language. In addition to these updates, the methodology guiding the coding of the different items has also been modified. Following the typology developed by Abbott and Snidal for assessing the levels of legal legalization,¹⁴ the coding of provisions is now according to hard and soft commitments, blending the previous categorization of ‘mixed legalization’ into soft obligations.

This paper is divided into five sections. Following this brief introduction, Section 2 offers an overview of the current landscape of global digital trade governance. Against this backdrop, Section 3 discusses the new developments unfolding in PTAs, while Section 4 addresses the emergence and significance of DEAs. In the latter two sections, we highlight the new dynamics of digital trade rulemaking regarding the actors and the substantive issues being negotiated. Thus, in Section 5, we provide an overview of the new data economy issues observed in PTAs and DEAs and conclude in Section 6, by also providing an outlook on future developments in the broadening domain of digital trade governance.

2. The Current Landscape of Digital Trade Regulation

The developments observed in PTAs and DEAs do not occur in a vacuum. They influence and are influenced by the negotiations on digital trade that are taking place in multilateral and regional fora. Within the multilateral context, in November 2023, 90 members are currently negotiating the Joint Initiative on Electronic Commerce¹⁵ (E-commerce JI) with the hope of concluding a plurilateral agreement on electronic commerce/digital trade under the umbrella of the WTO by the end of 2023.¹⁶ The issues that comprise the current E-commerce JI negotiations have been categorized into the following bundles of topics:

- Enabling e-commerce (e-transactions and digital trade facilitation and logistics);
- Openness and e-commerce (custom duties on e-transmission, access to internet and data);
- Trust and e-commerce (consumer protection, privacy, business trust, cybersecurity);
- Cross-cutting issues (flow of information; transparency, domestic regulation and cooperation; capacity building; special and differential treatment);

Policy Issues in Four Sub-Saharan African Countries’, UNECA Policy Report; Z. Yi, L. Wei, and X. Huang (2022) ‘Does Information-and-Communication-Technology Market Openness Promote Digital Service Exports?’, *Sustainability* 14, 4901; J. Ferencz, J. López-González, and I. O. García (2022) ‘Artificial Intelligence and International Trade: Some Preliminary Implications’, OECD Trade Policy Papers 260; J. L. González, F. Casalini, and J. Porras (2022) ‘A Preliminary Mapping of Data Localisation Measures’, OECD Trade Policy Papers 262; M. F. Ferracane (2022) ‘Digital Trade Integration: Global Trends’, Trans European Policy Studies Association, TEPSA Briefs.

¹³See Burri and Polanco, *supra* n. 8.

¹⁴K. W. Abbott and D. Snidal (2000) ‘Hard and Soft Law in International Governance’, *International Organization* 54, 421–422. According to the scholars, binding commitments (or hard law) refer to legally binding obligations that are precise, whereas non-binding commitments (or soft law) are legal arrangements that are ‘weakened along one or more of the dimensions of obligation, precision, and delegation’.

¹⁵WTO (2019), *supra* n. 4.

¹⁶WTO (2023) ‘E-Commerce Negotiators Advance Work, Discuss Development and Data Issues’, WTO news (30 March 2023), www.wto.org/english/news_e/news23_e/jsec_30mar23_e.htm (last accessed 2 November 2023).

- Telecommunications (updating the WTO Reference Paper on Telecommunications Services);
- Annex (diverse set of provisions ranging from logistic services, temporary entry of e-commerce related business persons, to goods and services market access)
- Scope and General Provisions (including provisions regarding relationship to other agreements, exceptions, indigenous peoples, taxation and dispute settlement).¹⁷

Notably, of the 90 JI participants, the majority of countries are high-income economies while only five are least-developed countries (LDCs). The relatively low rate of participation of low-income countries and nearly all LDCs (particularly from Africa) in the E-commerce JI negotiations has raised concerns over how less-resourced countries can effectively participate in crafting rules that will regulate one of the most important areas of trade policy.¹⁸ This phenomenon could also be attributed to the critical stance they have taken against these negotiations in favour of the potentially less far-reaching WTO E-commerce Work Programme discussions.¹⁹ Moreover, their skepticism in negotiating cutting-edge rules has been justified by their need to *first* understand the phenomenon and implications of digital trade *before* committing to rigid digital trade rules that are broad in scope.

Regional initiatives are also increasingly aiming to set policy frameworks to govern digital trade. Significant examples since January 2020 include the 2021 Mercosur E-Commerce Agreement and the electronic commerce chapter of the Regional Comprehensive Economic Partnership (RCEP). Moreover, the Digital Trade Protocol of the Agreement Establishing the African Continental Free Trade Area (AfCFTA),²⁰ and the forthcoming ASEAN negotiations towards a Digital Economy Framework Agreement (DEFA)²¹ underline that no region wants to be left behind in the domain of digital trade regulation and that digital trade policies play an increasingly important role in regional integration.

Against this background, it is interesting to note that the divergent policy priorities of the traditional digital trade legal demanders (for instance, the United States (US) has shifted its attention to the Indo-Pacific, adjusted its position as to the negotiated digital trade topics,²²

¹⁷See M. Burri (2023) 'A WTO Agreement on Electronic Commerce: An Inquiry into Its Legal Substance and Viability', *Georgetown Journal of International Law* 53, 565–625. For the latest publicly available, albeit, older version, of the E-commerce JI consolidated text, see WTO (2021) 'WTO Electronic Commerce Negotiations', Updated Consolidated Negotiating Text – Revision, INF/ECOM/62/Rev.2 (8 September 2021), www.bilaterals.org/IMG/pdf/wto_plurilateral_commerce_draft_consolidated_text_september_2021.pdf (last accessed 2 November 2023). For an update on the E-commerce JI, see Y. Ismail, 'The Evolving Context and Dynamics of the WTO Joint Initiative on E-commerce: The Fifth-Year Stocktake and Prospects for 2023', International Institute for Sustainable Development and CUTS International (Geneva, 2023), www.iisd.org/system/files/2023-04/wto-joint-initiative-e-commerce-fifth-year-stocktake-en.pdf (last accessed 2 November 2023).

¹⁸M. Haddad (2022) 'In Digital Trade Talks, the Voices of Least Developed Countries are Missing', *The Trade Post*, <https://blogs.worldbank.org/trade/digital-trade-talks-voices-least-developed-countries-are-missing> (last accessed 2 November 2023).

¹⁹WTO (1998) Work Programme on Electronic Commerce, WTO Doc. WT/L/274 (30 September 1998).

²⁰Decision of the Assembly of the Heads of State and Government of the African Union during its 33rd Ordinary Session held in Addis Ababa, Ethiopia from 9 to 10 February 2020 Assembly/AU/Dec.751(XXXIII).

²¹After issuing the ASEAN Leaders' Statement on Advancing Digital Transformation, in October 2021, the 'Bandar Seri Begawan Roadmap (BSBR): An ASEAN Digital Transformation Agenda to Accelerate ASEAN's Economic Recovery and Digital Economy Integration' was officially endorsed by the 20th ASEAN Economic Community Council. One of the key objectives of BSBR, is to set the path forward for regional digital integration, including by negotiating a Digital Economy Framework Agreement (DEFA). See BSBR, https://asean.org/wp-content/uploads/2021/10/Bandar-Seri-Begawan-Roadmap-on-ASEAN-Digital-Transformation-Agenda_Endorsed.pdf (last accessed 2 November 2023). A framework for developing the DEFA was recently adopted in September 2023 at the 43rd ASEAN Summit, with the negotiations towards reaching an agreement expected to be concluded by 2025.

²²On 24 October 2023, the US announced that it had withdrawn its E-commerce JI proposals on data flows, data localization, and source code, while remaining committed to the rest of the negotiating issues. See Inside US Trade, 'US to End Support for WTO E-commerce Proposals, Wants "Policy Space" for Digital Trade Rethink', <https://insidetrade.com/daily-news/us-end-support-wto-e-commerce-proposals-wants-policy-space-digital-trade-rethink> (last accessed 2 November 2023).

and appears less concerned with trade liberalization)²³ have led to non-traditional actors stepping into the gap to craft rules that best fit their policy priorities. The DEAs are a case in point. They are predominantly being developed by dynamic countries seeking to capitalize on the economic potential of the digital economy.²⁴ Countries such as Singapore and Australia, which have not been conspicuous rulemakers, have become leading actors in designing new rules for digital trade. Uncoincidentally, Singapore and Australia, along with Japan, are also the co-convenors of the E-commerce JL.²⁵ Moreover, Japan, which currently acts as the G7 president, is an avid promoter of the concept ‘data free flow with trust’ (DFFT) and has recently endeavoured to operationalize this concept by establishing an international data governance body.²⁶ This complements previous efforts by the G7 to set principles on digital trade.²⁷ These principles tend to be liberal and include the promotion of DFFT; open digital markets; safeguards for workers, consumers, and businesses; digital trading systems; and fair and inclusive digital trade global governance.²⁸

As global digital trade rulemaking continues to evolve, evidence-based research can help policymakers to identify the opportunities between the most advanced international treaty frameworks and their own efforts to adopt digital trade rules and accordingly shape domestic regimes. Moreover, an overview of the evolution of international digital trade rulemaking can illuminate the outlook of norm convergence or further fragmentation.²⁹ TAPED serves as a source of unbiased, comprehensive, and accessible data, and seeks to inform policymaking in this regard.³⁰ The next section discusses the advances in digital trade rulemaking in PTAs.

3. Trends in Digital Trade Provisions in PTAs

The number of digital trade provisions in PTAs has steadily increased over time. Of the 432 PTAs currently comprising TAPED,³¹ which were concluded or signed between January 2000 and November 2023, 214 contain provisions relevant for e-commerce and digital trade, and 122 have dedicated e-commerce or digital trade chapters.³² The significant jump in these commitments came about in the past few years. From January 2020 to November 2023, 49 PTAs were concluded or signed. Of these, 44 (or almost 90%) contain provisions on digital trade or e-commerce, and 26 (or 53%) have separate chapters on the subject, indicating that the majority of PTAs being concluded contain provisions on digital trade and most are found in a dedicated chapter. In contrast with the trends observed from January 2016, the year in which the text of the Trans-Pacific Partnership Agreement (TPP) was concluded and from which the US withdrew

²³See R. Hass (2022) ‘How the United States Can Strengthen its Position in the Indo-Pacific’, Brookings Institution, 2 February 2022, www.brookings.edu/blog/order-from-chaos/2022/02/02/how-the-united-states-can-strengthen-its-position-in-the-indo-pacific/ (last accessed 2 November 2023).

²⁴See S. Tay and J. Wau, ‘Asia and Digital Economy Agreements: Necessity and Uncertainty’, EUI Policy Brief, EU–Asia Project Issue 2022/42, <https://cadmus.eui.eu/bitstream/handle/1814/74766/QM-AX-22-042-EN-N.pdf?sequence=1&isAllowed=y> (last accessed 2 November 2023).

²⁵WTO (2019), *supra* n. 4.

²⁶Ministerial Declaration: The G7 Digital and Tech Ministers’ Meeting’, https://g7digital-tech-2023.go.jp/en/topics/topics_20230430.html (last accessed 2 November 2023).

²⁷G7, G7 Trade Ministers’ Digital Trade Principles, (2021), www.gov.uk/government/news/g7-trade-ministers-digital-trade-principles (last accessed 2 November 2023).

²⁸*Ibid.*

²⁹See Evenett and Fritz, *supra* n. 11.

³⁰For all data, as well as updates of the TAPED dataset, see *supra* n. 6.

³¹This number includes agreements that have been concluded and never entered into force, as well as agreements that have been subsequently upgraded, terminated, or replaced.

³²Although conceptually different, for the purposes of coding all relevant provisions, digital trade, and e-commerce are used interchangeably in this note and in TAPED. The reason for this is that many provisions addressing both issues overlap and countries are swiftly moving away from negotiating chapters on ‘e-commerce’ in favour of those on ‘digital trade’.

at the start of the Trump administration, up to December 2019, 68 PTAs were concluded or signed. Of these, 55 (or 80%) contained provisions on digital trade and 33 (just above 48%) had dedicated chapters on the subject. The relatively lower number of PTAs concluded or signed during 2020–2023 could be attributed to the Covid-19 pandemic restrictions. Nevertheless, we see a steady increase in the negotiation of PTAs that include provisions or chapters on digital trade.

During the reference period of January 2020 and November 2023, there has also been increased diversity in the parties negotiating these agreements. This is most apparent in RCEP, whose members include developed and developing countries, as well as LDCs.³³ Other less visible PTAs also reflect this tendency. An example is the Comprehensive Economic Partnership Agreement (CEPA) between India and the United Arab Emirates (UAE).

In other important developments, we observe a certain repositioning of traditional actors. As noted elsewhere,³⁴ the European Union (EU) has repositioned itself on cross-border data flows over time starting with clauses in which the Parties commit to ‘reassess’, within three years of the entry into force of the agreement, the need to include provisions on the free flow of data in the treaty – which has been the case in the EU’s deals with Japan and Mexico. The EU’s much clearer position on cross-border data flows was first asserted by the post-Brexit Trade and Cooperation Agreement (TCA) with the United Kingdom (UK) and the follow-up free trade agreements (FTAs) with New Zealand and Chile.³⁵ The EU’s newly found commitments are however linked to the higher standards of personal data protection under its General Data Protection Regulation, essentially creating a conditional data flow regime.³⁶ A similar repositioning is observed in China’s PTAs. So far, China has negotiated an e-commerce chapter (but not digital trade chapters)³⁷ in at least nine of its PTAs.³⁸ China’s willingness to participate in or influence e-commerce rulemaking is evidenced more clearly in RCEP. This agreement creates, among other things, a conditional framework for cross-border data flows with some obligations³⁹ but also important exceptions and carve-outs, so that the RCEP parties reserve their policy space, particularly in the area of national security.⁴⁰ China’s application to join the

³³RCEP LDC Members are Cambodia, Lao PDR and Myanmar. Myanmar and Lao PDR are expected to graduate from the LDC group in the coming years.

³⁴See Burri, supra n. 2.

³⁵Chapter 12, Article 12.4 EU–New Zealand FTA. Hereinafter we will refer to the PTAs with their short names, as coded in TAPED. For the full name of the treaty, please refer to TAPED, supra n. 6.

³⁶See e.g. M. Burri (2021) ‘Interfacing Privacy and Trade’, *Case Western Journal of International Law* 53, 35–88; A. Chander and P. M. Schwartz (2023) ‘Privacy and/or Trade’, *University of Chicago Law Review* 90, 49–135.

³⁷This finding seems to corroborate previous observations by Henry Gao regarding China’s reserved stance to the II negotiations. See H. Gao (2018) ‘Digital or Trade? The Contrasting Approaches of China and US to Digital Trade’, *Journal of International Economic Law* 21, 297–321, 314. According to Henry Gao, China’s narrow approach to discuss ‘only e-commerce’ issues may be influenced by China’s reservation to discuss pure digital services – in reference to China’s previous experience in *China – Publications and Audiovisual Products*. See Appellate Body Report, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/AB/R (adopted 19 January 2010). Regarding the difference between the terms ‘e-commerce’ and ‘digital trade’, the WTO E-Commerce Work Programme defines ‘e-commerce’ as ‘the production, distribution, marketing, sale or delivery of goods and services by electronic means’ (see supra n. 19, at para. 1.3). While there is no single definition, a joint effort by the IMF, OECD, UN, and WTO defines digital trade, for measurement purposes, as ‘all international trade that is digitally ordered and/or digitally delivered’. See IMF, OECD, UN, and WTO Handbook on Measuring Digital Trade, 2nd edn. (July 2023), 5, <https://doi.org/10.1787/ac99e6d3-en> (last accessed 2 November 2023). The latter definition is broader than e-commerce and it is underpinned by the importance of the movement of data. See also Burri and Chander, supra n. 3.

³⁸Chapter 13 China–Korea FTA; Chapter 12 Australia–China FTA, Chapter 11 China–Eurasian Economic Union FTA, Chapter 15 China–Singapore (Upgraded) FTA, Chapter 11 China–Mauritius FTA, Chapter 10 Cambodia–China FTA, Chapter 12 RCEP, Appendix 6 (Chapter 19) China–New Zealand (Upgraded) FTA and Chapter 10 China–Ecuador FTA.

³⁹Article 12.15 RCEP. Only two other Chinese FTAs have data flow commitments (Chapter 19, Article 12.3(b) China–New Zealand (Upgrade) FTA and Article 11.6 (2) China–Eurasian Economic Union FTA).

⁴⁰See Burri, supra n. 17.

CPTPP⁴¹ on 16 September 2021 can be a turning point, as the latter contains less flexible provisions on cross-border data flows and a clear ban on data localization measures, or measures requiring the location of data infrastructure or processing in a certain jurisdiction.⁴² If China's application to accede to the CPTPP is successful, it will mark a radical change in China's PTA policies on data governance and potentially have implications for its involvement in the WTO negotiations. However, it is unlikely that China will be welcomed into the CPTPP because of political frictions with key members⁴³ and the large (and growing) distance between CPTPP's commitments (including beyond digital trade) and China's applied regime and commitments in its current PTAs.⁴⁴

Notwithstanding advances in negotiating rules on e-commerce and digital trade, or even substantive chapters in this area, there remain several contentious issues. We highlight three of them – (1) cross-border data flows; (2) banning or limiting data localization requirements; (3) disclosure or transfer of the source code – and afterwards discuss other observable trends in digital trade rulemaking.

With regard to provisions on cross-border data flows, of all the PTAs coded in TAPED, only 49 (or just above 11% of all PTAs) contain provisions on the free movement of data. Of these, 19 are not legally binding, while 30 are legally binding. This cautious approach to including obligations on cross-border data flows persists in the most recent agreements, although we observe significant improvements. Out of the 49 PTAs concluded or signed since January 2020, 19 (or ca. 38% of the reference period PTAs) contain a provision on the subject of cross-border data flows. Of these, 16 are binding.⁴⁵ These findings are an improvement from the trends observed during the period January 2000 to December 2019. Out of a total of 383 agreements, 30 PTAs contained the relevant provisions and only 14 are binding (for a visualization of this evolution, see [Figure 1](#)). Other relevant provisions include review clauses in which the parties agree to review data flow provisions after a certain amount of time. The EU case is the most prominent example in this regard and such an update has recently been concluded with Japan.⁴⁶

Concerning the banning or limiting of data localization requirements, only 32 PTAs out of a total of 432 contain a provision on the subject. This represents 7% of the total number of PTAs. Of these, 30 are binding. Data from January 2020 until November 2023 indicate that out of the 49

⁴¹Parliament of the Commonwealth of Australia, Joint Standing Committee on Foreign Affairs, Defence and Trade, 'Expanding the Membership of the Comprehensive and Progressive Trans-Pacific Partnership' (February 2022), 49, 64–75, https://parlinfo.aph.gov.au/parlInfo/download/committees/reportjnt/024826/toc_pdf/ExpandingthemembershipoftheComprehensiveandProgressiveTrans-PacificPartnership.pdf;fileType=application%2Fpdf (last accessed 2 November 2023).

⁴²D. Svantesson, 'Data Localisation Trends and Challenges: Considerations for the Review of the Privacy Guidelines', OECD Digital Economy Papers 301, at 8, <http://dx.doi.org/10.1787/7fbaed62-en> (last accessed 2 November 2023).

⁴³L. Craymer and J. Cash (2023), 'Biggest Hurdles to China Entry into Trans-Pacific Trade Pact Are Political', *Reuters*, 31 July 2023, www.reuters.com/world/biggest-hurdles-china-entry-into-trans-pacific-trade-pact-are-political-2023-07-31/ (last accessed 2 November 2023).

⁴⁴M. Solís (2021), 'Commentary: China Moves to Join the CPTPP, but Don't Expect a Fast Pass', Brookings Institution, 23 September 2021, www.brookings.edu/articles/china-moves-to-join-the-cptpp-but-dont-expect-a-fast-pass/ (last accessed 2 November 2023).

⁴⁵Annex A Article 23 Australia–Singapore Digital Economy Agreement (ASDEA); Article 4.3 Chile, New Zealand–Singapore Digital Economy Partnership Agreement (DEPA); Article 10.11.2 Chile–Ecuador PSA; Article 12.15 RCEP; Article 8.84 Japan–UK CEPA; Article 201 EU–UK TCA; Article 7 Mercosur E–commerce Agreement; Article 4.11.1 Iceland, Liechtenstein, Norway–UK FTA; Article 7.11.2 Chile–Paraguay FTA; Article 14.10.2 Australia–UK FTA; Article 13.14.2 Pacific Alliance–Singapore FTA; Article 8.61-F (2) Singapore–UK DEA; Article 15.14.2 New Zealand–UK FTA; Article 14.17.2 Korea–Singapore DEA; Article 12.4.2 EU–New Zealand FTA; and Article 5.11 EFTA–Moldova FTA.

⁴⁶See Article 201(2) EU–UK TCA and Article 12.4 (4) EU–New Zealand FTA.

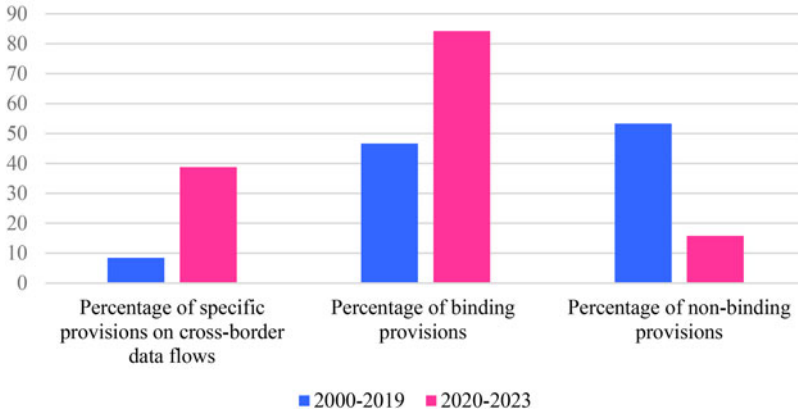


Figure 1. Provisions on cross-border data flows
 Source: The authors based on TAPED.⁴⁷

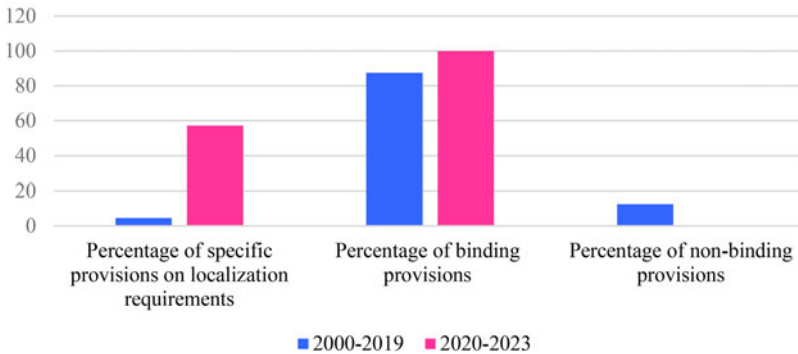


Figure 2. Provisions banning or limiting data localization requirements
 Source: The authors based on TAPED.⁴⁸

PTAs concluded or signed, only 16 PTAs⁴⁹ contain a provision banning or limiting data localization requirements (for a visualization of this evolution, see Figure 2). All of these are binding, indicating a consistency to agree on prohibitions of data localization and a more differential approach to data flows, which is interesting to observe, as there is an interlinkage between these provisions and the commitments made under them.

Another important provision in the context of digital governance relates to the commitments on the disclosure or transfer of the source code. So far, only 23 PTAs of the 432 PTAs contain a provision on the subject. Of these, 22 are binding. From January 2000 to December 2019, 11

⁴⁷The percentage of binding and non-binding provisions was calculated over the number of PTAs containing specific provisions on cross-border data flows during the referenced period.

⁴⁸The percentage of binding and non-binding provisions was calculated over the number of PTAs containing specific provisions on banning or limiting of data localization requirements during the referenced period.

⁴⁹Annex A, Article 24 (general) and Article 25 (for financial services) Australia–Singapore DEA; Article 4.4 DEPA, Article 12.14 RCEP; Article 10.12.2 Chile–Ecuador PSA; Article 201 EU–UK TCA; Article 8.2 Mercosur E-Commerce Agreement; Article 4.11.1 (a) (b) (c) Iceland, Liechtenstein, Norway–UK FTA; Article 7.12.2 Chile–Paraguay FTA; Article 14.11.2 Australia–UK FTA; Article 8.61-G(2) Singapore–UK DEA; Article 15.15.2 New Zealand–UK FTA; Article 12.4.2 EU–New Zealand FTA; Article 14.15.2 Korea–Singapore DEA; Article 5.11.1 EFTA–Moldova FTA; and Chapter 10 Article 17.2 AANZFTA Second Protocol.

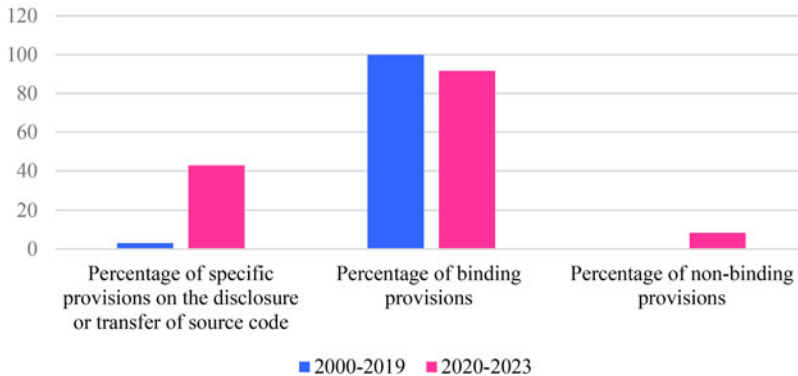


Figure 3. Provisions on the disclosure or transfer of source code

Source: The authors based on TAPED.⁵⁰

PTAs prohibit requirements on the transfer of, or access to, the source code of software owned by a person, as a condition for the import, distribution, sale or use of such software. All of these are binding. Moreover, since January 2020, a further 12 PTAs contain a provision on the subject and there has been some convergence between the US-led and the EU model in this regard, although the EU still inserts several exceptions.⁵¹ Of these, 11 are binding obligations⁵² (for a visualization of this evolution, see Figure 3). On a much newer issue, at least six PTAs in the dataset make a separate reference to the transfer of, or access to, an algorithm, which expands the scope of the ban on forced technological transfer of source code.⁵³

Less contentious is the inclusion of provisions on data protection, where we can observe an upward trend. Since January 2020, 32 out of the 49 coded PTAs have included a relevant provision. Yet only 16 of these provisions are binding obligations.⁵⁴ This contrasts with previous observations for the period from January 2000 to December 2019, where out of the 113 PTAs containing provisions on the subject, 25 were binding (for a visualization of this evolution, see Figure 4). Notably, there is some convergence in the way provisions on data protection are being included in the latest PTAs, particularly in DEAs. A common reference is to ‘international standards, principles, and guidelines’. In the reference period, 18 PTAs mention these aspects. Of

⁵⁰The percentage of binding and non-binding provisions was calculated over the number of PTAs containing specific provisions on disclosure or transfer of source code during the referenced period.

⁵¹See e.g. Article 207 EU–UK TCA.

⁵²Article 28, Annex 8 Australia–Singapore DEA; Article 8.73 Japan–UK CETA; Article 207 EU–UK TCA; Article 4.10 Iceland, Liechtenstein, Norway–UK FTA; Article 7.16 Chile–Paraguay FTA; Article 14.18 (1) Australia–UK FTA; Article 13.18 (1) Pacific Alliance Singapore–FTA; Article 8.61-K(1) Singapore–UK DEA; Article X.11(2), Chapter 12 EU–New Zealand FTA; Article 14.19 (1) Korea–Singapore DEA; and Article 5.14 (1) of the EFTA–Moldova FTA.

⁵³Article 4.17 Iceland, Liechtenstein, Norway–UK FTA; Article 8-61-K (1) Singapore–UK DEA; Article 15.12.1(a) New Zealand–UK FTA; Article 19.19 USMCA; Article 14.19 (1) of the Korea–Singapore DEA; and Article 17 US–Japan DTA.

⁵⁴Article 10.8 Chile–Ecuador PSA; Article 10.6 China–Cambodia FTA; Joint Declaration on the Protection of Data Egypt–UK Association Agreement; Article 51 Mexico–UK Trade Continuity Agreement; Article 202 EU–UK TCA; Article 9 of the Chapter 19 China–New Zealand Upgraded FTA; Article 79 Albania–UK FTA; Article 6.2 Mercosur E-Commerce Agreement; Article 7.8.2 Chile–Paraguay FTA; Article 14.12.2 Australia–UK FTA; Article 13.11 (2) Pacific Alliance–Singapore FTA; Article 8.61-E (2) Singapore–UK DEA; Article 15.13.2 New Zealand–UK FTA; Article 14.17.2 Korea–Singapore DEA; Article 5.13 (2) EFTA–Moldova FTA; and Article 10 of Chapter 10 of the Second Protocol of the AANZFTA.

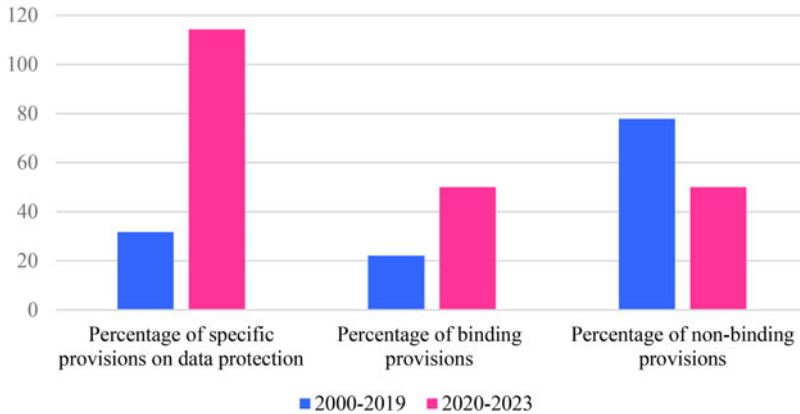


Figure 4. Provisions on data protection
 Source: The authors based on TAPED.⁵⁵

the 13 agreements referring to international principles, six⁵⁶ include binding commitments, and of those referring to international standards, all but two (in other words, 11)⁵⁷ have binding provisions. In addition, we observe increased reference to ‘compatibility’ and ‘interoperability’ of data protection laws. These aspects are of increased importance in global initiatives, such as the G7 work on DFFT.

Provisions on the facilitation of digital trade are also a rising trend, reflecting the parallel developments occurring in the context of the WTO JI E-commerce negotiations, where the participating members reached some agreement on certain issues, such as online consumer protection; electronic signatures and authentication; unsolicited commercial electronic messages; electronic contracts; transparency; paperless trading; and open internet access.⁵⁸ Nonetheless, while PTAs also include these aspects, the nature of these provisions remains, largely, non-binding. For instance, out of all coded PTAs, 107 PTAs include a provision on paperless trading, but only 19 of these are binding.⁵⁹ Similar metrics are reflected in provisions on customs procedures automatization or custom data exchange systems. In these cases, 106 PTAs contain provisions

⁵⁵The percentage of binding and non-binding provisions was calculated over the number of PTAs containing specific provisions on data protection during the referenced period.

⁵⁶Article 9.2 China–New Zealand Upgraded FTA; Article 13.7 Israel–Korea FTA; Article 8.61-E (3) Singapore–UK DEA; Article 14.17.3 Korea–Singapore DEA; Article 10.8.2 Chile–Ecuador PSA; and Article 63 of the Cameroon–UK EPA.

⁵⁷Annex A, Article 17.2 Australia–Singapore DEA (ASDEA); Article 131.2 Ukraine–UK FTA; Article 12.8.2 RCEP; Article 8.57.4 Singapore–UK FTA; Article 51 of the Mexico–UK Trade Continuity Agreement; Article 226.2 Moldova–UK SPA; Article 19, Chapter 19 China–New Zealand (Upgraded) FTA; Article 13.7 Israel–Korea FTA; Article 8.61-E(2) and Article 8.61-E(3) Singapore–UK DEA; Article 14.17(2)(3) Korea–Singapore DEA; and Article 10, Chapter 10 AANZFTA Second Protocol.

⁵⁸WTO (2021) Joint Statement Initiative on E-commerce Statement by Ministers of Australia, Japan and Singapore, December 2021, https://www.wto.org/english/news_e/news21_e/ji_ecom_minister_statement_e.pdf (last accessed 2 November 2023).

⁵⁹Article 4 and 10 of Chapter 4 New Zealand–Singapore CETA; Article 8 of Chapter 14 Australia–Singapore FTA; Article 309 of Chapter 3 Australia–Thailand FTA; Article 10.6(1) New Zealand–Thailand FTA; Article 5.12(1)(2) Chile–Viet Nam FTA; Article 15.9 Australia–Malaysia FTA; Article 3.4 Korea–Turkey (Goods) FTA; Article 3 of Chapter 9 New Zealand–Taiwan FTA; para. 60 (Terms and Transitional Provisions) of Annex 3 of the EAEU–Armenia Accession Agreement; Article 4 of Chapter 4 Australia–Singapore Updated FTA; Article 7(b) of Chapter 4 PACER Plus; Article 7(1) ASEAN E-Commerce Agreement; Article 10 of Chapter 19 Chile–New Zealand (Upgraded) FTA; Article 4.6 (3)(c) India–Mauritius CECPA; Articles 3.15(2)(a), 3.16(2), (3)(d), 3.19(1), and 3.25(2) Cambodia–Korea FTA; Article 8.61-B(2) and (3) Singapore–UK DEA; Article 14.12(1)(2)(3) Korea–Singapore DEA.

on these issues, but only 26 of them are binding.⁶⁰ In these and other areas, there is however a concerted effort to achieve interoperability and to comply with existing standards or to participate in international standard-setting activities.⁶¹

Regarding the relationships between the digital trade chapters with other agreements or chapters of the same agreement, some PTAs regulate this relationship in the event of inconsistency. We observe that from January 2020 to November 2023, only six PTAs contain relevant rules.⁶² In the particular case of the relationship between digital trade chapters with IP rules, only three PTAs contain a relevant provision. This is not trivial, as it conditions the normative value of the agreed-upon digital trade provisions; it is also an issue that deserves further scholarly attention, in particular in combination with the carve-outs and exception clauses formulated in the digital trade chapters and other parts of the treaties.⁶³

Concerning the justiciability of these provisions, less than half of the e-commerce and digital trade chapters in PTAs during January 2020 and November 2023 are subject to dispute resolution under the respective treaty. Of the 49 PTAs that have been concluded or signed in this time frame, 28 of these agreements have a dispute settlement chapter that applies to the digital trade chapter.⁶⁴ These observations complement previous studies. Based on data of 275 Regional Trade Agreements notified to the WTO until May 2017, Monteiro and Teh found that out of 76 agreements, 58 of the e-commerce provisions were covered by dispute settlement.⁶⁵ Nine expressly excluded the provisions from dispute settlement, while the other nine excluded some provisions from dispute settlement.⁶⁶ Other studies have also noted that in South–South PTAs, the digital trade provisions tend to fall outside the scope of the dispute settlement mechanism.⁶⁷ Nevertheless, there are some nuances in these observations. For example, the RCEP e-commerce chapter is currently not subject to dispute settlement. However, the dispute settlement chapter will apply to the parties that have agreed to its application after the five-yearly general review.⁶⁸

⁶⁰Articles IX.2.8-9, IX.3, and IX.4.1(vi) Canada–Costa Rica FTA; Protocol N.7 Algeria–EC Euro-Med Association Agreement; Article 5.1.1 Chile–US FTA; Article 29 Chile–China FTA; Article 5.3 Oman–US FTA; Article 5.4 Chile–Colombia FTA; Article 411 Canada–Peru FTA; Articles 28(4)(a) and 8(2) of Protocol I EC–Papua New Guinea and Fiji IPA; Article 5.7 Chile–Hong Kong FTA; Article 4.4 Colombia–Korea FTA; Article 4.3 Colombia–Costa Rica FTA; Article 7 New Zealand–Taiwan FTA; Article 197(d) EC–Moldova Association Agreement; Article 4.17 Canada–Korea FTA; Article 11 of Chapter 6 Singapore–Turkey FTA; Article 9 of Chapter 4 ASEAN–Hong Kong FTA; Article 6.14 China Eurasian Economic Union FTA; Article 7.7 USMCA; Articles 4.4, 4.5, and 16.3 EU–Vietnam FTA; Article 4.8 Cambodia–China FTA; Articles 4.4, 4.5, and 16.3 Vietnam–UK FTA; Amendment to Article 6.13 of Chapter 6 Singapore–UK DEA; Article 4.6(2) (c-d) New Zealand–UK FTA.

⁶¹See e.g. Article 14.8 Korea–Singapore DEA (e-authentication and e-signatures); Article 10 SADEA and Article 2.5 DEPA (e-invoicing); Article 11 SADEA and Article 2.7 DEPA (e-payments); and Article 30 SADEA; Article 8.61-D UK–Singapore DEA, and Article 14.32 Korea–Singapore DEA (specific provisions on standards and conformity assessment procedures).

⁶²Article 2.3 Mercosur E-Commerce Agreement; Article 14.2 Australia–UK FTA; Article 13.2(1) Israel–Korea FTA; Article 723 Chile–Paraguay FTA; Article 9.3(3) India–UAE CEPA; and Article 14.2(3) Korea–Singapore DEA.

⁶³New Zealand's Waitangi Tribunal, Report on the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (Wellington: Waitangi Tribunal, 2021), in particular at 132–142.

⁶⁴DEPA; Ukraine–UK FTA; Japan–UK CEPA; Singapore–UK FTA; Indonesia–Korea CEPA; Moldova–UK SPA; Vietnam–UK FTA; India–Mauritius CECPA; Israel–Korea FTA; Cambodia–Korea FTA; Chile–Paraguay FTA; Australia–UK FTA; Singapore–UK DEA; New Zealand–UK FTA; Australia–India ECTA; EU–New Zealand FTA; Korea–Singapore DEA.

⁶⁵J. A. Monteiro and R. Teh (2017) 'Provisions on Electronic Commerce in Regional Trade Agreements', WTO Working Paper ERSD-2017-11.

⁶⁶Ibid., at 25.

⁶⁷K. Banga, J. Macleod and M. Mendez-Parra (2021) 'Digital trade provisions in the AfCFTA: What can we learn from South–South trade agreements?', Supporting Economic transformation (SET) working paper series, ODI, (April 2021), Chapter 3, <https://repository.uneca.org/bitstream/handle/10855/43949/b11990405.pdf?sequence=1&isAllowed=y> (last accessed 2 November 2023).

⁶⁸Article 12.17(3) RCEP.

Another relevant issue that is becoming increasingly clear as a feature of digital trade rulemaking in PTAs is the inclusion of exceptions and carve-outs. These provisions are relevant as countries seek to retain policy space and define the bounds of their digital sovereignty.⁶⁹ These conditionalities are also a vehicle for making the digital trade commitments politically feasible for the treaty parties.⁷⁰ The critical importance of these exception clauses has merited the re-structuring of the items being coded in the TAPED database. Exceptions typically occur where a prohibition is made – for instance, the parties may not impose requirements on the location of computing facilities (data localization). The general tendency is for parties to add a provision stating that nothing prevents countries from requiring the localization of data to comply with national laws or specific national interest considerations immediately after the provisions. In some PTAs, general exception clauses, such as those found in WTO law under Article XX of the GATT 1994 or Article XIV of the GATS apply *mutatis mutandis* or they are reproduced in the relevant section of the treaty.⁷¹ Sometimes this reproduction is abridged in that elements of the WTO general exception clauses – in particular, the exhaustive listing of the permissible legitimate objectives – are missing.⁷² These are general public policy exceptions, including privacy protection. Countries also add national security exceptions, which at times refer to Article XXI of the GATT 1994 or Article XIV**bis** of the GATS, applying *mutatis mutandis*.⁷³ Furthermore, we observe an emerging pattern in the issues expressly excluded from digital trade chapters. The following are frequently excluded to preserve policy space: government procurement,⁷⁴ information held or processed by or on behalf of a Party, or measures related to such information, including its collection,⁷⁵ internal taxation,⁷⁶ financial services,⁷⁷ and audio-visual services.⁷⁸ The EU tends to include in addition a broadly defined ‘right to regulate’, which can potentially cover all policy areas linked to digital trade and undermine the treaty commitments made. There is in this sense a layering of different exceptions, the ultimate effect of which demands, as earlier noted, a careful analysis of each PTA in order to understand the impact of the treaty and the overall policy space that remains available under PTAs.

Among the other interesting trends to observe and that will merit future updates of TAPED is the inclusion of clauses on Special and Differential Treatment (SDT). Some PTAs, such as the CPTPP and RCEP, include clauses on SDT. This is an aspect worth keeping an eye on, as these provisions could enable LDCs, which have not engaged meaningfully in digital trade rule-making so far, to undertake reduced commitments at the outset and increase them over time or to have longer periods of implementation or support in the implementation process. Previous experiences in negotiating and implementing such types of clauses in the multilateral context could be informative in this regard, showcasing once again the mutually reinforcing relationship between PTAs and multilateral/plurilateral negotiations.

⁶⁹See e.g. J. Pohle and T. Thiel (2020) ‘Digital Sovereignty’, *Internet Policy Review* 9; A. Chander and H. Sun (2023) ‘Sovereignty 2.0’, *Vanderbilt Law Review* 55, 283–324; A. Chander and H. Sun (eds.) (2023) *Data Sovereignty: From the Digital Silk Road to the Return of the State*. Oxford: Oxford University Press.

⁷⁰On the different flexibilities between the CPTPP and DEPA from the perspective of New Zealand, see New Zealand’s Waitangi Tribunal, *supra* n. 63.

⁷¹See e.g. Annex B (2) Korea–Singapore DEA; Article 32.1(1-2) New Zealand–UK FTA; Article 18.1 Chile–Paraguay FTA; Article 21.1(2) Israel–Korea FTA.

⁷²See e.g. USMCA Article 19.11 (a)

⁷³See e.g. Article 11.1 Australia–India ECTA; Article 17.13 RCEP; Article 16.2 India–UAE CEPA.

⁷⁴See e.g. Article 14.2(2)(a) Korea–Singapore DEA; Article 15.3(2)(b) New–Zealand UK FTA; Article 8.58(4)(b) Singapore–UK DEA.

⁷⁵See e.g. Article 12.3(3) RCEP, Article 10.2 4(b) China–Cambodia FTA.

⁷⁶See e.g. Article 12.11(5) RCEP, Article 13.3 Korea–Israel FTA.

⁷⁷See e.g. Article 7.2(2)(d) Chile–Paraguay FTA.

⁷⁸See e.g. Article 15.3(2)(a) New Zealand–UK FTA; Article 8.58(4)(a) Singapore–UK DEA. All EU deals have such an exception.

A final aspect to note concerns the scope of the PTAs in the sense of the expansion of the issues being negotiated, which has warranted the update of TAPED. In addition to those provisions on facilitation of digital trade, data protection, and data flows, as well as provisions with any sort of impact on the conditions for digital trade, such as provisions on IP, non-discrimination, general and specific exceptions, PTAs often include, what we call, ‘new data economy provisions’, discussed later in this article. The next section delves first into exploring the DEAs, considered the most innovative agreements on digital trade.

4. Spotlight on the Digital Economy Agreements

As previously mentioned, a significant development in digital trade regulation is the emergence of the so-called DEAs. Since 2019, the following five DEAs have been signed: (1) US–Japan Digital Trade Agreement (DTA), 2019; (2) Singapore–Australia Digital Economy Agreement, 2020 (SADEA);⁷⁹ (3) Digital Economy Partnership Agreement (DEPA) among Chile, New Zealand and Singapore, 2020; (4) UK–Singapore DEA, 2022;⁸⁰ and (5) Korea–Singapore DEA, 2022.⁸¹ Except for the US–Japan DTA and the DEPA, the other three agreements are part of, and upgrade, an existing FTA.⁸² In other words, the US–Japan DTA and the DEPA are the only true stand-alone DEAs. The conclusion of DEAs raises questions about their compatibility with the multilateral legal framework.⁸³

Under WTO law, advanced free trade agreements (FTAs) covering goods are required to comply with Article XXIV of the GATT 1994 and FTAs covering services must comply with Article V of the GATS. As they do not form part of an FTA, within the meaning of WTO law, the legal status of the US–Japan DTA and the DEPA under WTO law remains unclear. Specifically, there is some doubt whether they would qualify as valid agreements contemplated under Article XXIV of the GATT 1994 or even Article V of the GATS.⁸⁴

WTO law has specific requirements that FTAs must fulfil to be exempt from the most-favoured-nation obligation (in other words, to be considered a valid trade liberalization agreement under WTO law). Article XXIV:8(b) of the GATT 1994 requires ‘duties and other restrictive regulations of commerce’ to be eliminated on ‘substantially all the trade between the constituent territories in products originating in such territories’. In *Turkey–Textiles*, the Appellate Body noted that WTO Members have never reached an agreement on the meaning of the term ‘substantially all the trade’.⁸⁵ However, the Appellate Body considered that it is clear that ‘substantially all the trade’ is not ‘all the trade’ but ‘is something considerably more than merely some of the trade’.⁸⁶ The preamble of the *Understanding on the Interpretation of Article XXIV of the [GATT 1994] (Understanding)* suggests that omitting any major sector of trade would not fulfil the requirement of ‘substantially all the trade’.⁸⁷ Moreover, during

⁷⁹Pursuant to Article 3, this agreement amends and replaces the e-commerce-trade related provisions of the Singapore–Australia FTA. The ‘Digital Economy’ chapter comprises the substantive part of the DEA.

⁸⁰Pursuant to Article 2, this agreement amends and replaces the e-commerce-trade related provisions of the UK–Singapore FTA. It is renamed to ‘Digital Trade and the Digital Economy’.

⁸¹Pursuant to Article 3, this agreement amends and replaces the e-commerce related provisions of the Korea–Singapore FTA. It is renamed to ‘Digital Economy’.

⁸²Although we refer to preferential trade agreements as PTAs in the rest of the paper, Article XXIV of the GATT 1994 specifically refers to free trade agreements (FTAs).

⁸³See Burri (2023), *supra* n. 17.

⁸⁴See M. Soprana (2021) ‘The Digital Economy Partnership Agreement (DEPA): Assessing the Significance of the New Trade Agreement on the Block’, *Trade, Law and Development* 13, 143–169, at 167–168.

⁸⁵See WTO Committee on Regional Trade Agreements (Note by the Secretariat), Synopsis of ‘Systemic’ Issues Related to Regional Trade Agreements, WT/REG/W/37 (2 March 2000), paras. 53–55.

⁸⁶Appellate Body Report, *Turkey – Restrictions on Imports of Textile and Clothing Products*, WTO Doc. WT/DS34/AB/R (adopted 19 November 1999), at para. 48.

⁸⁷See the third recital of the *Understanding*.

negotiations on the meaning of this term, some WTO Members suggested that an FTA that covers 95% of tariff lines at the six-digit level would fulfil the condition under Article XXIV:8 of the GATT 1994.⁸⁸ Digital trade is a large part of trade nowadays but it has not yet reached its full potential. As an illustration, in the US e-commerce sales currently only constitute around 14.5% of all retail sales.⁸⁹ In 2020, the corresponding figure in Australia was 9.4%, 25.9% in the Republic of Korea, 11.7% in Singapore, and 23.3% in the UK.⁹⁰ It is thus questionable whether a stand-alone DEA would fulfil the requirements of being a valid FTA under Article XXIV:8 of the GATT 1994, as it does not encompass ‘substantially all the trade’.

Similarly, an FTA that is considered to be a valid economic integration agreement under Article V:1(a) of the GATS must have substantial sectoral coverage. Footnote 1 explains that ‘[t]his condition is understood in terms of number of sectors, volume of trade affected and modes of supply. In order to meet this condition, agreements should not provide for the a priori exclusion of any mode of supply.’ Trade volumes aside, there is no consensus on whether services provided via digital trade entail both Mode 1 (cross-border supply) and Mode 2 (consumption abroad) or only Mode 1.⁹¹ Nevertheless, even if, hypothetically, digital trade involved both those modes of supply, it necessarily excludes, at least, two modes (Modes 3 and 4, i.e. commercial presence and movement of natural persons). Therefore, an agreement based on (maximum) two modes of supply would ostensibly not fulfil the conditions for a valid services FTA under the GATS. In sum, it appears doubtful that the DEPA and the US–Japan DTA would fulfil the WTO requirements to constitute a valid PTA. Interestingly, neither agreement has been notified to the WTO.⁹² Concerns about the legal status and WTO legal compatibility of previous negotiations have also been made, such as the Trade in Services Agreement TiSA.⁹³ In that case, the means of its incorporation into the WTO legal framework was uncertain.⁹⁴ This issue remains unresolved because the negotiations were discontinued.⁹⁵

That aside, a few trends have emerged in the *parties* and *typical features* of DEAs. Thus far, countries that have signed these agreements are Australia, Chile, Japan, New Zealand, Singapore, Korea, the UK, and the US. Therefore, except for Chile, these agreements are typically concluded between or among high-income countries.⁹⁶ Moreover, Singapore has emerged as the global leader in concluding DEAs. It is involved in each of these agreements except the US–Japan DTA. This indicates Singapore’s strong interest in digital trade and its legal entrepreneurship in this area.

⁸⁸See WTO Committee on Regional Trade Agreements (Communication from Australia), WT/REG/W/22, 30 January 1998, para. 10.

⁸⁹US Department of Commerce (2022) ‘Quarterly Retail E-commerce Sales 3rd Quarter 2022’, US Census Bureau News, 22 November 2022, https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf (last accessed 2 November 2023).

⁹⁰UN (2021) ‘Global E-Commerce Jumps to \$26.7 trillion, Fueled by COVID-19’, UN News, 3 May 2021, <https://news.un.org/en/story/2021/05/1091182> (last accessed 2 November 2023).

⁹¹See M. Burri (2017) ‘The Regulation of Data Flows through Trade Agreements’, *Georgetown Journal of International Law* 48(1), 408–448, at 415. Indeed, *US – Gambling* suggested that online provision of services falls under Mode 1. See Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (US – Gambling)*, WT/DS285/AB/R (adopted 7 April 2005).

⁹²See WTO, Regional Trade Agreements Database, ‘Japan’, <http://rtais.wto.org/UI/PublicSearchByMemberResult.aspx?membercode=392> (last accessed 2 November 2023).

⁹³See, for example, WTO Council for Trade in Services (Note by the Secretariat), Report of the Meeting Held on 20 June 2013, Restricted, S/C/M/114, 26 August 2013, paras. 5.36–5.52.

⁹⁴J. A. Marchetti and M. Roy (2013) ‘The TiSA Initiative: An Overview of Market Access Issues’, World Trade Organization Economic Research and Statistics Division, Staff Working Paper ERSD-2013-11, 27 November 2013, pp. 24–26, wto.org/english/res_e/reser_e/ersd201311_e.pdf (last accessed 2 November 2023).

⁹⁵M. Burri (2021) ‘Towards a New Treaty on Digital Trade’, *Journal of World Trade* 55(1), 77–100 at 97–98.

⁹⁶Chile aside, all the other countries involved in these agreements are advanced economies with GDP per capita from US \$32,254–US\$82,807. See The World Bank, ‘GDP per Capita (current US\$), Australia, Japan, Korea, Rep., New Zealand, Singapore, United Kingdom, United States’, <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=AU-JP-KR-NZ-SG-GB-US&view=chart> (last accessed 2 November 2023).

Common trends have emerged in all the DEAs and specifically in the ones in which Singapore is involved. We first provide an overview of the common features of the main substantive provisions⁹⁷ in all DEAs thus far. We then elaborate on the common features in Singapore's DEAs, which are generally cutting-edge topics, including some of the 'new data economy issues' addressed in the next section.

The following provisions are common to all DEAs:

- They substantially exclude government procurement and government data.⁹⁸
- They have codified the WTO moratorium on customs duties on electronic transmissions, made it permanent, and provide a carve-out for the imposition of internal taxes.⁹⁹
- The Parties have undertaken to adopt the UNCITRAL Model Law on Electronic Commerce 1996 in the provisions on domestic electronic transaction frameworks.¹⁰⁰
- The Parties undertake not to prohibit cross-border data flows. However, the provisions include exceptions for legitimate public policy reasons and adopt the necessity test under Article XX of the GATT 1994 or Article XIV of the GATS.¹⁰¹
- They all prohibit data localization requirements as a condition for market access or for conducting business in the territory of the other party/parties.¹⁰²
- They all require the adoption of laws protecting personal information.¹⁰³
- They all have provisions requiring the adoption of consumer protection laws.¹⁰⁴
- They all require the adoption of measures to control Unsolicited Commercial Electronic Messages (spam).¹⁰⁵
- They all prohibit the disclosure of proprietary information relating to cryptography for ICT as a condition for market access or doing business in the territory of the other party/parties.¹⁰⁶
- They all have cooperation undertakings to address cybersecurity threats.¹⁰⁷
- They all have provisions on open government data, generally requiring that they are anonymized, have descriptive metadata, are machine readable, and are in an open format that allows them to be searched, retrieved, used, reused, and redistributed.¹⁰⁸

⁹⁷For a framework of the main e-commerce/digital trade provisions, see OECD (2021) 'Digital Trade Inventory Rules, Standards and Principles', OECD Trade Policy Papers 251, at 26, <https://www.oecd-ilibrary.org/docserver/9a9821e0-en.pdf?expires=1666751945&id=id&accname=guest&checksum=84BB61E35652569D18EC167F243A8BE2> (last accessed 2 November 2023), referring to the WTO's Joint Initiative on Electronic Commerce.

⁹⁸Article 2 US–Japan DTA; Article 2 SADEA; Article 1.1 DEPA; Article 8.58(4) UK–Singapore DEA; and Article 14.2 Korea–Singapore DEA.

⁹⁹Articles 6 and 7 US–Japan DTA; Article 5 SADEA; Article 3.2 DEPA; Article 8.59 UK–Singapore DEA; and Article 14.5 Korea–Singapore DEA.

¹⁰⁰Article 9 US–Japan DTA; Article 8.2 SADEA; Article 2.3 DEPA; Article 8.60 UK–Singapore DEA; and Article 14.7 Korea–Singapore DEA.

¹⁰¹This means that cross-border data restrictions must not be applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised trade restriction. See Article 11 US–Japan DTA; Article 23 SADEA; Article 4.3 DEPA; Article 8.61-F UK–Singapore DEA; and Article 14.14 Korea–Singapore DEA.

¹⁰²Article 12 US–Japan DTA; Articles 24 and 25 SADEA; Article 4.4 DEPA; Article 8.61-G UK–Singapore DEA; and Article 14.5 Korea–Singapore DEA.

¹⁰³Article 15 US–Japan DTA; Article 17 SADEA; Article 4.2 DEPA; Article 8.61-E UK–Singapore DEA; and Article 14.7 Korea–Singapore DEA.

¹⁰⁴Article 14 US–Japan DTA; Article 15 of SADEA; Article 6.3 of DEPA; Article 8.61-M UK–Singapore DEA; and Article 14.21 Korea–Singapore DEA.

¹⁰⁵Article 16 US–Japan DTA; Article 19 SADEA; Article 6.2 DEPA; Article 8.61-N UK–Singapore DEA; and Article 14.20 Korea–Singapore DEA.

¹⁰⁶Article 21.3 US–Japan DTA; Article 7.3 SADEA; Article 3.4 DEPA; Article 8.61-J UK–Singapore DEA; and Article 14.18 Korea–Singapore DEA.

¹⁰⁷Article 19 US–Japan DTA; Article 34 SADEA; Article 5.1 DEPA; Article 8.61-L UK–Singapore DEA; and Article 14.22 Korea–Singapore DEA.

¹⁰⁸Article 20 US–Japan DTA; Article 27 SADEA; Article 9.5 DEPA; Article 8.61-H UK–Singapore DEA; and Article 14.26 Korea–Singapore DEA.

While the innovations in the DEAs are exciting, it is also interesting to note the two features of the US–Japan DTA that differ from the agreements involving Singapore. First, the former agreement does not have a dispute settlement provision. This is atypical of previous US agreements. For instance, the US–China Economic and Trade Agreement (the Phase I Agreement), which was signed later than the US–Japan DTA and the USMCA, include a dispute settlement chapter.¹⁰⁹ Second, the US–Japan DTA has a provision excluding platform liability for tech companies, which necessarily demands the application of Section 230 Communications Decency Act (CDA).¹¹⁰ Section 230 CDA insulates platforms from liability for the third party but has been recently under attack, even in the US,¹¹¹ and has become constrained through regulation in other jurisdictions.¹¹²

It can also be observed that while the US had the first-mover advantage in that it has concluded agreements in digital trade since 2000,¹¹³ Singapore has certainly taken the baton and ran with it. As previously mentioned, all DEAs but one have Singapore as a party. Of course, the DEAs are not the only agreements that have digital trade chapters. However, the level of ambition and new issues in other contemporaneous agreements do not reach the levels incorporated in the DEAs. For example, during the same period, the UK concluded its post-Brexit PTAs;¹¹⁴ RCEP and the India–UAE CEPA were signed; and the negotiations of the EU–New Zealand FTA were concluded. Even with ostensibly like-minded advanced economies,¹¹⁵ the number of new data economy issues covered in the digital trade chapters of PTAs that are not DEAs is comparatively low. The next section provides an overview of the ‘new data economy issues’ included in FTAs and DEAs.

5. Charting Unknown Waters: The New Data Economy Issues

As digital trade rulemaking in PTAs continues to evolve, so does TAPED. The addition of new data economy issues is an example in this regard. Since January 2020, we observe, more and more, that PTAs, and in particular DEAs and selected UK PTAs, possibly inspired by Singapore, contain provisions on aspects that transcend traditional digital trade rulemaking. These new provisions are for instance on competition policy related to the digital economy; digital identities; digital inclusion; fintech and lawtech cooperation; artificial intelligence; standardization, interoperability, or mutual recognition regarding electronic means. Most of these issues are found in DEAs¹¹⁶ but some of them have also permeated into PTAs’ digital trade

¹⁰⁹See Chapter 7 US–China Phase I Agreement.

¹¹⁰Article 18 US–Japan DTA. See also US Section 230(c)(1) US CDA, which reads: ‘No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider’ and in essence protects online intermediaries that host or republish speech’.

¹¹¹In reference to *Gonzalez v. Google LLC* (2023) and *Twitter Inc. v. Taamneh* (2023), recently decided by the US Supreme Court in favour of keeping Section 230 CDA. See e.g. M. Burri (2023) ‘Digital Trade and Human Rights’, *AJIL Unbound* 117, 110–115; also M. Burri (2022) ‘Fake News in Times of Pandemic and Beyond: Exploring of the Rationales for Regulating Information Platforms’, in K. Mathis and A. Tor (eds.), *Law and Economics of the Coronavirus Crisis*. Berlin: Springer, 31–58.

¹¹²See Burri (2022), above.

¹¹³This US Digital Trade Agenda was propelled by 2002 Bipartisan Trade Promotion Authority Act. See generally: S. Wunsch-Vincent (2006) *The WTO, the Internet and Trade in Digital Products: EC–US Perspectives*. Oxford: Hart. According to data from TAPED, since the year 2000, the US has concluded and signed 13 trade agreements with an e-commerce chapter.

¹¹⁴See the Japan–UK CEPA, and EU–UK TCA, both signed in 2020.

¹¹⁵Like the UK’s agreements with the EU and Japan or the EU–New Zealand FTA.

¹¹⁶See e.g. the relevant provisions on cooperation on competition policy in Article 16 Australia–Singapore DEA; Article 8.4 DEPA, Article 8.61-U UK–Singapore DEA; and Article 14.27 Korea–Singapore DEA. On digital identities, see Article 9.7 India–UAE CEPA and Article 14.36 Korea–Singapore DEA. On digital inclusion, see Article 11.1 DEPA (covering also inclusion of Indigenous populations) and Article 8.61-P UK–Singapore DEA. On fintech, see Article 32 SADEA; Article 8.1 DEPA; and Article 14.29 Korea–Singapore DEA. On artificial intelligence, see Article 31 SADEA; Article 8.2 DEPA;

chapters. For example, the India–UAE CEPA of 2022 includes provisions on digital identities.¹¹⁷ The New Zealand–UK FTA, in addition to the provisions on digital identities, also includes language on artificial intelligence.¹¹⁸ Some of these provisions reflect parallel developments occurring elsewhere. For example, policies to facilitate the integration of micro-, small-, and medium-sized enterprises (MSMEs) in electronic commerce are key to harnessing the benefits of the digital economy and figure prominently in the current plurilateral negotiations at the WTO.¹¹⁹ Relevant provisions in this regard are also increasingly found in most recent PTAs and DEAs.¹²⁰ Moreover, the Korea–Singapore DEA specifically mentions start-ups as companies that should be promoted and supported in the digital economy.¹²¹

Interesting is also the incorporation of provisions on digital inclusion, which explicitly appear in five agreements – DEPA, Chile–Paraguay FTA, India–UAE CEPA, Singapore–UK DEA, and the UK–New Zealand FTA. All but the UK–New Zealand FTA have at least one developing-country party. Digital inclusion provisions initially involved providing economic opportunities for MSMEs. However, they have subsequently expanded to encompass women, rural populations, low socio-economic groups, disabled people, and Indigenous Peoples.¹²² The UK–Singapore DEA is unique in that it specifically targets fair labour conditions, worker protection, and improving digital skills.¹²³ Moreover, its Parties also recognize the digital divide between countries and undertake to promote the participation of *other countries* in digital trade.¹²⁴

We also observe that the UK has progressively included some of the recent innovations found in DEAs and added new issues to its negotiating agenda. The inclusion of lawtech in the UK–Singapore FTA makes it the DEA with the most new data economy topics covered so far. Of all the PTAs with provisions on artificial intelligence, the UK–Singapore DEA is the most comprehensive, seeking cooperation on issues and developments relating to artificial intelligence, including among others, ‘ethical use, human diversity and unintended biases, industry-led technical standards and algorithmic transparency’, ‘joint deployment and test-bedding opportunities’, and ‘opportunities for investment in and commercialisation of AI and emerging technologies’.¹²⁵ Similarly, while all the PTAs with provisions on artificial intelligence seek to promote collaboration for the development and adoption of frameworks that support the trusted, safe and responsible use of these technologies, the New Zealand–UK FTA explicitly makes reference to the ‘principles and guidelines of relevant international bodies, such as the OECD and the Global Partnership on Artificial Intelligence’.¹²⁶ The progressive nature of some of the UK’s recent agreements goes in tandem with the domestic reforms that the UK has undertaken in recent years to position itself as a tech ‘superpower’, which seems to be increasingly reflected in its digital trade policy.¹²⁷ It also signifies a distancing from the EU model, which can be problematic having in

Article 8.61-S UK–Singapore DEA; and Article 14.28 Korea–Singapore DEA. On standards and conformity assessment procedures, see Article 30 SADEA; Article 8.61-D UK–Singapore DEA; and Article 14.32 Korea–Singapore DEA. On lawtech, see Article 8.61-T UK–Singapore DEA.

¹¹⁷See Article 9.7 India–UAE CEPA.

¹¹⁸See Article 15.19(3)(a) New Zealand–UK DEA.

¹¹⁹WTO, Informal Working Group on Micro, Small and Medium-sized Enterprises (MSMEs), https://www.wto.org/english/tratop_e/msmes_e/msmes_e.htm#keyDocs (last accessed 2 November 2023).

¹²⁰Article 36 SADEA; Module 10 DEPA; Article 8.61-Q UK–Singapore DEA; and Article 14.32 Korea–Singapore DEA.

¹²¹Article 14.32 Korea–Singapore DEA.

¹²²See Article 11.1 DEPA, which provides ‘the Parties shall cooperate on matters relating to digital inclusion, including participation of women, rural populations, low socio-economic groups and Indigenous Peoples in the digital economy’.

¹²³Article 8.61-P(1) Singapore–UK DEA.

¹²⁴See Article 8.61-P Singapore–UK DEA.

¹²⁵See Article 8.61-R Singapore–UK DEA.

¹²⁶Article 15.19 New Zealand–UK FTA.

¹²⁷See UK Department for Digital, Culture, Media and Sport (2022) ‘Policy Paper: UK Digital Strategy’, updated 4 October 2022, <https://www.gov.uk/government/publications/uks-digital-strategy/uk-digital-strategy> (last accessed 2 November 2023) and UK Council for Science and Technology (2021) ‘Correspondence: The UK as a Science and Technology Superpower’,

mind the bindingness of the TCA and therewith linked obligations for the UK to provide an essentially equivalent level of personal data protection.¹²⁸

A final remark on artificial intelligence provisions in PTAs is the explicit link that these provisions make to the digital economy, and in some cases, to the promotion of trade and investment flows.¹²⁹ So far, none of the provisions on artificial intelligence in PTAs refers to the human rights implications of these technologies, including possible privacy concerns and issues which have prominently featured in recent discussions on generative artificial intelligence.¹³⁰

6. Concluding Remarks

The recent developments in digital trade rulemaking are exciting and digital trade law has become one of the most active areas of international economic law. We increasingly observe the routine incorporation of digital trade commitments in PTA negotiations, and the inclusion of aspects not observed before – even in ground-breaking agreements, such as the 2018 CPTPP that created a digital trade template that has diffused in a great number of follow-up agreements.¹³¹ We thus see a clear expansion of global digital trade law. The TAPED database has sought to accordingly adapt and cover these new developments.

While, admittedly, the large majority of the most recent provisions encourage cooperation and are non-binding, there is a tendency to be innovative and include new issues that otherwise have not appeared in negotiating agendas. This seems to indicate that while binding rules are difficult to negotiate (or are not desired in some areas), there is a willingness to include new issues as a way to limit regulatory divergence and create a platform for cooperation. Moreover, we are witnessing the legal entrepreneurship of non-traditional actors, such as Singapore, which have become innovators in the digital trade law domain. Finally, as more and more issues might be included in PTAs' and DEAs' negotiating agendas, these types of agreements may increasingly become rule frameworks for all data economy issues, going beyond purely digital trade commitments. The TAPED database is well positioned to keep up-to-date with these developments and to continue providing current and unbiased data to policymakers and other stakeholders to facilitate well-informed decision-making, which may be particularly important for actors with low regulatory capacity, such as developing and least developed countries.

22 July 2021, <https://www.gov.uk/government/publications/the-uk-as-a-science-and-technology-superpower/the-uk-as-a-science-and-technology-superpower-accessible-html-version-of-letter> (last accessed 2 November 2023).

¹²⁸See e.g. K. Irion and M. Burri (2023) 'Digital Trade', in G. Kübek, C. J. Tams, and J. P. Terhechte (eds.), *EU-UK Trade and Cooperation Agreement: A Commentary*. Baden-Baden: Nomos, 255–275.

¹²⁹Article 8.61-R Singapore–UK DEA.

¹³⁰European Data Protection Board (2023) 'EDPB Resolves Dispute on Transfers by Meta and Creates Task Force on Chat GPT', 13 April 2023, https://edpb.europa.eu/news/news/2023/edpb-resolves-dispute-transfers-meta-and-creates-task-force-chat-gpt_en (last accessed 2 November 2023). Generally, on the interface between digital trade and human rights implications, see e.g. Burri (2023), *supra* n. 113.

¹³¹The 2016 Chile–Uruguay FTA, the 2016 updated Singapore–Australia FTA (SAFTA), the 2017 Argentina–Chile FTA, the 2018 Singapore–Sri Lanka FTA, the 2018 Australia–Peru FTA, the 2019 Brazil–Chile FTA, the 2019 Australia–Indonesia FTA, the 2018 USMCA, 2019 Japan–US DTA, and the 2020 DEPA between Chile, New Zealand, and Singapore.