



United Nations Conference on Trade and Development

DIGITAL ECONOMY REPORT 2021

Cross-border data flows and development:
For whom the data flow

Annex 1 – Annex to Chapter II

Summary of literature review on cross-border data flows

This annex provides details of some examples considering data and cross-border data flows in the literature. The list does not pretend to be exhaustive and is presented for illustrative purposes only.

This document has not been edited.

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Digital Economy Report 2021

Annex to Chapter II: Summary of literature review on cross-border data flows (CBDF)

Group	Title	Author(s)	Institution	Definition/Explanation CBDF	Statistics	Types of data	Position wrt. CBDF	Kind of analysis	Broad/narrow approach?	Development perspective?	Benefits of considered position	Drawbacks of position	Other major messages	Possible policy implications
Academia	Why the US and EU are failing to set information free	Aaronson (2014)	GWU	None	None	Information, partially trade	Free flow	Call for open data flows, with good governance	Relatively broad: trade, education, security, governance aspects	No	Call for interoperability and One Global Internet	Suggests trade route as best negotiation option		Developing shared policy principles to ensure Internet remains interoperable and whole
Academia	Data Is Different: Why the World Needs a New Approach to Governing Cross-border Data Flows	Aaronson (2018)	GWO/CIGI	"Data flows move across borders when individuals, companies or governments authorize data to be transferred from one country (the source of data) to another country where the data may be processed or used" (intro); good figure on CBDF's differences from other goods/services	None	Personal data; public data; trade data	Free flow, with rules	Relatively balanced argument	Focus on data as an economic resource	Particularly challenging for developing countries as a lot of norms/rules/regulations still missing	5 step plan to help policy makers govern CBDF	Closely focussed on rules linked to trade	Interoperability of data approaches rather than harmonization on the international level	Five Step Plan
Academia	Data Protection and Digital Trade in the Wake of the NSA Revelations	Aaronson & Maxim (2013)	GWU	None	None	Trade data; personal data	Free flow, with rules	Status quo of data protection perspectives in US & EU	Narrow: data protection	Mentions how developing countries fall in line with either EU or US	Clearly shows how EU & US agreeing would "settle" the system, without a voice for other countries		Privacy protection more at the forefront since NSA scandal	
Think tank	Assessing Digitalization and Data Governance Issues in Africa	Ademuyiwa & Adeniran (2020)	CIGI	None	None	Not clearly specified, concerned with personal data, competition, taxation, antitrust, partially trade related; data governance	Free flow with the right regulatory/data governance framework	Shows regulatory gaps in African countries	Narrow: how better data governance could build better digital markets	Data governance issues that need to be addressed to help African countries build their digital sectors, digitalise their economies and become part of the data value chains (antitrust, competition, taxation, data privacy and security, skills)	- Advocates for independent data agencies that have legal, financial and administrative autonomy to safeguard data frameworks	- Unclear how to bridge the capacity gap for data agencies and policy makers		
Civil Society	Against Digital Colonialism	Avila (2020)				Not specified	Cautious towards free flow as long as only a handful of firms in select countries benefit from the data	Analysis of adverse effects of current system where data rules are likely to be made in a trade-context and in favour of a few strong players	Relatively narrow, although touches upon aspects of education, infrastructure, global norms	- Concern around centralised ownership of computing power, infrastructure and software - Donated proprietary software/hardware may limit countries' abilities to develop solutions they need, while firms can use the data to monetise insights from their donations - Call for improved education/ capacity in government; public procurement; digital cooperation	Points out dependencies of developing countries on a few developed-country firms and possibilities to change this	How developing countries could build their capacity and finance own infrastructure remains open		
Academia	Economic impact of data localization in five selected African countries	Badran	Cairo University	None	No	No distinction	Free flow	Estimation of impact of data localization on total factor productivity/macro indicators; presents legal framework in 5 African countries; relatively balanced analysis	Narrow focus: data localisation increases cost/reduces productivity	- Impact of data localisation in the 5 African countries is sizably smaller than for the EU - Likely because of fewer links and commercial relationships to other countries - Adverse effects of localisation in Africa particularly high because unreliable energy supply make data centres there particularly costly	Illustrates adverse impact of data localisation		The estimation approach is based on a lot of assumptions (general equilibrium model, GTAP), putting different weights on various elements of the model which may not be easily generalisable	Need for data protection laws to distinguish between data types
Think tank	The Economic Importance of Getting Data Protection Right: Protecting Privacy, Transmitting Data, Moving Commerce	Bauer et al. (2013)	European Centre for International Political Economy (ECIPE); written for the US Chamber of Commerce	None		No distinction	Free flow	Pro-free flow (written for the US Chamber of Commerce); Simulation of the impact of GDPR on goods & services trade (pre-GDPR introduction); using GTAP 8 a computable general equilibrium model; assess how firm-level cost is impacted by restrictions	Narrow: focus on adverse productivity effects	None	Quantification of GDPR impact, narrow focus on trade	Free-trade focussed; - Does not differentiate based on different types of data in the simulation - Approximate calculation for per European household impact: more relevant might have been the impact on the US as being "locked out" and the impact there		
Think tank	Tracing the Economic Impact of Regulations on the Free Flow of Data and Data Localization	Bauer et al. (2016)	Centre for International Governance Innovation and Chatham House	None	Creates a data regulation index using a sub-indicator of the OECD Product Market Regulation augmented with country specific policies	No distinction	Free flow	Simulation using the regulation index and data-intensive downstream industries on TFP; using GTAP 8 (a computable general equilibrium model)	Broad			Approximative: uses OECD regulation info with US info on data-intensive industries to indicate barriers in other countries		
Private Sector	Grenzüberschreitende Datenflüsse und EU-Handelsabkommen	BDI (2017)	Federation of German Industries/ Bundesverband der deutschen Industrie	None	None	Business/trade data	Free flow, while maintaining the EU's data protection standards	Position paper, no analysis	Narrow focus on business and trade	None - implicitly: exporting GDPR through FTAs	Combines free flow with call for data security	Sees data limited in the trade negotiation realm		

Private Sector	Cross-border Data Flows	BSA (2020)	BSA - the Software Alliance	""Cross-border data flows" refer to the movement or transfer of information between servers across country borders. [...] Data moving across borders is critical for the services that sustain global commerce, improve health and safety, promote social good, and enable the technologies of the future." (p.1)	None	Business and research data	Free flow (for business, health and new tech)	No analysis, presentation of brief company examples/case studies	Narrow focus on business	None	Straightforward in motivation by business interests	No analysis	States that 70 % of firms affected by removing the Privacy Shield are small or medium sized enterprises	
Private Sector	The future of transatlantic data flows	BSA (2020)	BSA - the Software Alliance	None	None	Business data	Free flow, while ensuring data privacy and security (left vague)	Explanation document of the Privacy Shield, SCCs, BCRs after the Schrems II Ruling	Narrow focus on business	None				
Private Sector	The ascendancy of international data flows	Bughin & Lund (2017)	McKinsey	None; characterisation of CBDFs (more global/faster; more inclusive; changing global dynamics)	model that finds that data's contribution to global GDP growth btw. 2005-15 nearly	Trade data	Free flow	Pro-business data analysis	Narrow: trade	No		Assumes data flows are more or less always linked to trade in goods and services (e-commerce)		
Academia	The World Trade Organization as an Actor in Global Internet Governance	Burri (2016)	Uni Lucerne	None	No	Digital trade (goods and services)	Towards free flow, but mostly legal analysis	Legal analysis of the role of data governance discussions in trade negotiations	Narrow focus on digital trade aspects	No	Trade negotiations are not the place to settle various data issues; too little interest in the internet as a common good		Where there are specific digital products clauses in preferential trade agreements, they can still be easily overridden by other parts of the agreement (at least in US-led ones)	Data governance is broader than the trade arena
International Organisation	Trade and Cross-Border Data Flows	López González (2019)	OECD	Define data, information, knowledge	None	Trade data; personal data; business data	Free flow	Presentation of regulation landscape; relatively neutral	Narrow: trade-focus	No	Neutral towards different countries' approaches; more of a presentation		Work towards interoperability of different regulation systems; importance of trust in the global system	
Civil Society	Cross-border data flows enable growth in all industries	Castro & McQuinn (2015)	Information Technology and Innovation Foundation	None	Case study focus	Various industries (not just trade-related); personal/government data with respect to existing data localisation rules	Free flow benefits all industries and innovation, not just tech	Industry focus: Case studies (mining, planes, driving, remote diagnosis, research collaboration); literature overview	Narrow	No	Comprehensive perspective on disadvantages of limiting CBDF	Advocates removing barriers to CBDF through US trade agreements - dominant focus on trade perspective	-IOs should track data-restrictions to trade (all of a sudden very trade focussed) & advocate for free data flow -"Geneva Convention on the Status of Data": establish int. legal standards for gov't access to data and settle jurisdiction and transparency questions The more separate the Internet becomes, the more adverse effects on trade and development & more scope to limit human rights and democracy	"censorship + data localization = total control" (abstract)
Academia	Data nationalism	Chander & Lê (2015)	California International Law Center, UC Davis	None	None	Personal data	Free flow	Country case studies of legislation/regulation on data localisation	Narrow	No	Interesting arguments against foreign surveillance as reason for data localisation			
Academia	The Digital Economy for Economic Development: Free Flow of Data and Supporting Policies: A proposal by the T20 Task Force on Trade, Investment and Globalization	Chen et al. (2019)	T20	None	None	Broad	Free flow	Policy brief supporting G20 "data free flow with trust"	Broad	Developing countries participate in communication tech area, so need right policy	Split of 5 regulation areas to discuss implications more precisely (all of them are supposed to address certain market failures)	Little on catching up of developing countries; basic premise: free markets should lead to optimal outcomes		
Think tank	Economic Rents and the Contours of Conflict in the Data-driven Economy	Ciuriak (2020)	CIGI	None; data definition: "It is the essential and definitive capital asset of this age." (p.6)	None	Data as a factor of production	Not explicit - towards free flow	Historical analysis, how data makes rent capture different (importance of IP)	Narrow: data to capture rents	No	Shifting alliances, where US and EU were aligned on IP protection in the "knowledge-economy", they are now rent collector and rent payer --> leading to EU taxation and conflict	Not explicitly about CBDF	Situation is skewed towards those who capture most value (tech industry; data-driven economy; countries where these are located) - conflict potential	
Civil Society	Data in Legal Limbo: Ownership, sovereignty, or a digital public goods regime?	Correa (2020)	South Centre	Def. data: factual material upon which information is built;		Considers various types of data, including commercial, personal, machine-generated data	Not explicit - focus on data, less their transfer	Legal analysis of ownership, sovereignty	Narrow: legal analysis of data characteristics and ownership definitions	Not explicit	Describes legal dimensions of data, how to define rights over them	Describes different approaches, but limited direct policy impact		
Civil Society	Cross-border data flows: Where are the barriers, and what do they cost?	Cory (2017)	Information Technology and Innovation Foundation	None	None (lit. review of impact of data localisation on GDP reduction)	Trade data	Free flow	Literature review of different aspects: reasons for localisation, cost of it (presents several studies there)	Narrow: Trump's trade-policy	No	Idea to build interoperability between privacy systems	US focussed; Wants the US to use trade negotiations to impose free flow of data - on a framework to questionable if there is the expertise for data in those negotiations?	"Geneva convention on the status of data" to establish international legal standards for government access to data, to improve mutual legal-assistance processes, and to decide on a framework to manage questions on data-related jurisdiction issues."	

Civil Society	The False Appeal of Data Nationalism: Why the Value of Data Comes From How It's Used, Not Where It's Stored	Cory (2019)	ITIP	None	None	Business data	Free flow	Policy brief on how policy makers can support value capture	Narrow: data innovation	Partially: innovation instead of localisation	Positive approach: rather than limiting CBDF, bridge the divides in infrastructure, value capture abilities	No suggestions on how to deal with a few leading firms harnessing most data and its value	Bridge digital divides: improve skills, improve collected data quality, improve infrastructure to support data innovation, focus on value capture from data rather data localisation
Civil Society	Data Localisation India's Double-Edged Sword?	CUTS International (2020)	CUTS International	None	Simulation of data restriction's impact on GDP/employment...	Digital trade data	Free flow	Estimation of impact if India were to impose data localisation	Narrow: digital exports	Yes: impact on India	Case study of how data localisation can hamper development rather than further it	External validity of the case study re. development perspective: large share of English speaking labour force that made digital exports so viable; Little idea on how to react when localisation imposed in other countries	Free flow of data would contribute to more local data centres as the industry grows - so the more jobs would be created through openness rather than data restrictions
International Organisation	The Regulation of Digital Trade: Key Policies and International Trends	Daza Jaller, Gaillard & Molinuevo (2020)	World Bank	None	None	Digital trade (goods and services)	Free flow, with rules	Relatively balanced: presents beneficial and problematic regulations for digital trade	Narrow: digital trade	No	Acknowledges positive and negative aspects of regulation - Illustrates how comparative advantage still holds for some trade aspects - But also highlights that e.g. cloud services are different, because they pool factors of production across countries to create the optimal product - Points out that for platforms abundant factors of production might matter less than market size (network effects) and timing of entry	Trust building regulation required	
Academia	Comparative Advantage in Digital Trade	Deardorff (2017)	University of Michigan			Digital trade (goods and services)	Not explicit; for free flow to reap gains from trade	Discussion of different types of digital trade and whether Ricardo's concept of comparative advantage holds	Narrow: focus on comparative advantage in digital trade	None			
Academia	Data Governance as the Enabler of the Data Economy	Engels (2019)	German Economic Institute (IW)	None	None	Business data	n/a	Data governance advocacy	Narrow: company-internal data governance	No	How to turn data into an asset	Policy ideas might not work in developing countries: financial incentives for firms to introduce data governance	
Academia	Digital Innovation in East Asia: Do Restrictive Data Policies Matter	Ferracane & van der Marel (2020)	World Bank	None	ECIPE's Digital Trade Estimates database (10 East Asian countries)	Trade	Free flow	Regression using the regulation index and data-intensive downstream industries on firm-level innovation (cross-sectional data for each year btw 2009 & 2018)	Narrow	No	More restrictions lead to less innovation	Limited set of countries to analyse, would be interesting to see updated industry-data intensity (pdated to more recent year) in index given the evolution of data used in industries	
Academia	Do data policy restrictions impact the productivity performance of firms and industries?	Ferracane et al. (2020)	European Centre for International Political Economy (ECIPE)/ Universities (Hamburg, Brussels, Leuven)	None	ECIPE database of data policies	Trade	Free flow	Trade/productivity: Regression using regulation index and data-intensive downstream industries on TFP; using Global Trade Analysis Project (GTAP), a computable general equilibrium model	Narrow	No	More restrictive measures have a neg. impact on productivity	SMEs are driving the result of neg. impact of CBDF restrictions, not big firms (interesting finding: esp. for developing countries where there are more SMEs)	Adverse impact on SMEs of data restrictions
Private Sector	Cross-Border Data Transfers & Data Localization	Global Data Alliance (2020)	Global Data Alliance (Association of businesses, linked to BSA)	None	None	Business data	Free flow, while ensuring data privacy and security (left vague)	Position paper	Narrow focus on business	None	Calls on governments to ensure interoperability of privacy regimes to help CBDFs - Calls for businesses to be involved in designing localisation/restrictions to make it as burdenless as possible/multistakeholder element	Leaves open what they consider the "right amount" of data protection	Call for governments to develop a tool that would bridge differences between countries' privacy frameworks - but leaves open how this could be done
Private Sector	Cross-Border Data Flows: Realising benefits and removing barriers	GSMA (2018)	GSMA	None	None	Mostly business	Free flow, while ensuring security and some regulation	Position paper	Narrow focus on impact on telecom providers	None	- Preference for regional regulation rather than national one (plus interoperability with other regional approaches)		Multi-stakeholder and regional approach to data flow regulation
Private Sector	Regional Privacy Frameworks and Cross-Border Data Flows: How ASEAN and APEC can Protect Data and Drive Innovation	GSMA (2018)	GSMA	None	None	No distinction, but somewhat from mobile industry/business perspective	Free flow supported by privacy frameworks	Position paper/policy paper suggesting steps to take for a privacy framework	Narrow focus on privacy regimes and business	Limited, but takes into account that a roadmap to data protection and privacy regulation depends on countries' level of readiness (status quo analysis, defining goals, execution)	Very pragmatic: suggests specific steps how to align 2 data privacy frameworks in Asia: - technical: introduce APEC CBPR measures into ASEAN's framework OR MoUs for formal equivalence - political: include non-APEC member countries - cross-regional: data authorities to agree on equivalency; introduce BCRs	Builds in part on interviews with policy makers which identify concerns for building privacy regimes: - cost of implementation (e.g. establishing data authority) - cost of skills/expertise - lack of certified accountability agents that APEC CBPR requires	Advocates for multistakeholder discussions before implementation

Civil Society	The grand myth of cross-border data flows in trade deals	Gurumurthy et al. (2017)	IT for Change			Personal data (in connection with data localisation), fairly broad	Against free flow as envisioned in WTO negotiations; need for improved data ownership	Analyses concerns over data flow regulation in trade deals from a development perspective	Narrow: data in trade deal context	Yes: current approach is extractive for developing countries, they need adequate policies; past has shown that fostering development often requires some level of protection/protectionist measures for a while; - economic value of data needs to be localised	- Calls for scope for country specific data flow policies - Warns of mission creep or WTO regulation; - Points out concerns for developing countries	Vague on precise actions to take Does not follow up on the thought how data sovereignty in development cooperation should be shaped	Potential need for data localisation to grow domestic industries and harness potential of data
Civil Society	Handelsrecht - freie Fahrt auf der Datenautobahn?	Hilbig (2018)	Brot für die Welt	None	None	Business data	Against free flow as envisioned in WTO negotiations; need for improved data ownership	Position paper Analysis of whether data can be compared to commodities, and analysis of arguments on why data should flow free - finds them not sufficient	Narrow focus on adverse impact of trade negotiations on developing countries	Yes, but assumes developing countries are overall just going to be taken advantage of	Points out that data sovereignty will gain in importance in development cooperation	Relatively high-level; limited immediately implementable ideas to benefit from CBDFs	Calls for policies to ensure open data flows and interoperability, build flexibility into copyright regulations, minimise border frictions
Civil Society	Why should data flow freely?	Hill (2018)	Association for Proper Internet Governance - APIG			Personal, data in context of the WTO	Free data flows likely to increase income inequality; free flow only if there is a proper means of remuneration	Discussion of two main positions in the data debate: free flow and data sovereignty	Narrow: focus on WTO context	Implicit: free flow is likely to increase income inequality and can limit right to privacy	Cautions against regulating data through trade negotiations, limiting countries' scope for national measures		
Think tank	The Data Revolution: Capturing the Digital Trade Opportunity at Home and Abroad	Hinrich Foundation (2019)	Hinrich Foundation			Digital trade (goods and services)	Free flow, rules for interoperability	Country case studies	Narrow: focus on digital trade aspects	Focus on Asia-Pacific and noting heterogeneity in making use digital trade; not too much development perspective	Points out heterogeneity of participation in digital trade across the region	Relatively high-level; limited immediately implementable ideas to benefit from CBDFs	Calls for policies to ensure open data flows and interoperability, build flexibility into copyright regulations, minimise border frictions
Civil Society	We Need to Talk About Data: Framing the Debate Around the Free Flow of Data and Data Sovereignty	I&JPN (2021)	Internet & Jurisdiction Policy Network			Data in general - pointing out the multidimensionality	Not explicit: wants to balance between free flow and data sovereignty camp	Discussion of two main positions in the data debate: free flow and data sovereignty	Relatively broad: points out that different groups need a common vocabulary/definitions to be able to debate issues at stake	Points out that developing countries still lagging behind - Proposed rules at the WTO are too inflexible for developing countries to have policy space to develop their (digital) economy - Calls for stronger rules and policies within countries first to bridge digital divides, infrastructure gaps and legal protection	- Call for defining concepts better to make discussion easier - Call for multistakeholder approach to discuss data governance		
Civil Society	Digital Trade Rules	James (2020)	Rosa-Luxemburg-Stiftung			Trade related	Critical towards free flow, as long as it cannot be ensured that developing countries benefit from data generated within their countries	Position paper, summary of existing positions	Narrow: focus on trade and the impact of big tech	- Privacy is a privilege that everyone should enjoy; - Without it and no rules on taxation of big tech, privacy and income gaps will grow and developing countries will remain consumers rather than producers	Strongly puts forward the concept of data as a public good that should benefit communities and countries (incl. in improving public services)		
Civil Society	Cross border data flows, privacy, & global inequality	Kilic & Avila (2019?)	Public Citizen			Personal data	Free flow with appropriate privacy protection everywhere	Call for action	Narrow: data privacy	- Without it and no rules on taxation of big tech, privacy and income gaps will grow and developing countries will remain consumers rather than producers	Emphasis on importance of privacy and consumer protection laws		Need for privacy and consumer protection
Academia	Data Governance in der wissenschaftlichen Literatur	Krotova & Eppelsheimer (2019)	Institut der deutschen Wirtschaft	None; define information as refined/processed data; data as characteristics/properties of events and objects	None	Data governance publications		Text mining cluster analysis on data governance themes		No	Cluster graph is interesting (esp. cluster 6)	Source papers not listed	
International Organisation	Regulation of Transborder Data Flows under Data Protection and Privacy Law: Past, Present and Future	Kuner (2011)	OECD			Data in connection with data protection & privacy laws/regulation	Free flow, ideally with a global solution regulating it	Review of existing privacy and data protection laws/regulations	Narrow: focus on privacy aspects	Limited: developing countries are mentioned, but for None is their regulation presented in detail, only tendency clubbed together	- Shows in depth the evolution of the regulation over time and across the world - Presents differences between different approaches	Focus on one type of data concern and its regulation	Favours a global solution to reduce hurdles in data flows as much as possible, although not optimistic that this will happen
Government agency	Data flows – a fifth freedom for the internal market?	Linden & Dahlberg (2016)	Kommerskollegium	implicit: business data transferred between markets		Business data	Free flow, with rules	Premise: free flow of data is good, but weighs well whether it should obtain similar rights to freedom of movement/good/services/capital - how personal freedom is a primary right vs. data regulations secondary	Somewhat broad: business/trade vs personal freedoms	No	Interesting discussion of whether data should be on equal footing with freedom of movement of goods/services/labour/capital Rejects traditional options of (trade) negotiations and regulatory cooperation. Instead suggests international cooperation similar to the Privacy Shield as an option (was written in 2016, before the European Court of Justice invalidated it)	Very specific case/EU-centric From today's perspective: Privacy Shield couldn't be maintained - what are the implications from that? How can these pathways be made legally viable?	Free flow of data is a too "immature freedom" - still needs to settle fundamental issues and better understanding of data flows, rather than moving into a phase of administrating data flows Better understanding of data/data flows/data governance is important
International Organisation; Academia	Resolving the conflict between privacy and digital trade	Mattoo & Meltzer (2018)	World Bank/Brookings	None	Digitally delivered services from developing countries to EU worth 50 billion USD in 2015	Trade/business data	Free flow		Narrow: focus on maintaining digitally delivered business services of developing countries to EU	Yes		Free flow is vital for developing countries' economies	Interoperability should be the goal not harmonisation

International Organisation	Development strategies for middle-income countries in a digital world – impacts from trade costs, data and innovation policies	Mayer (2020)	UNCTAD			Data on consumer preferences; data in GVC context; data in manufacturing	Free-flow for data identifying bottlenecks in manufacturing and similar; in favour of data localisation for data on consumer preferences to support local industrial policy using data for innovation and serving new market segments	Extension of economic model		Data localisation of data on consumer preferences can have economic and development rationale for developing countries: using data insights they can implement a data-driven industrial policy which allows for manufacturing to develop new products that serve new internal market segments, e.g. middle class	Presents coherent argument of how data localisation measures and data analysis capabilities could help countries broaden their industrial base and develop, relying less on export-oriented approaches	Data processing capabilities need to be extended, does not address how	Fostering data-driven industrial policy requires capacity building for data governance and skills development
Private Sector	Global flows in a digital age: How trade, finance, people, and data connect the world economy	McKinsey (2014)	McKinsey	Yes, but looks at "cross-border data and communication flows" mostly (synonymous with online bandwidth, Internet penetration, calls and in some sections patents and academic co-authorship)	Cross-border Internet grew 18-times between 2005-2012	Consider data/communications and financial flows two separate things; plus "emerging digital flows" (e-commerce, online work platforms, remittances and payments, and other microdata)	Free flow	Driven by "free flows are good" idea	Somewhat narrow: trade-related	Not really, mentions emerging countries and their potential but somewhat abstract	Attempt of quantifying cross-border flows and their value	Data sources for data amounts proprietary, so not easily reproducible	
Civil Society	The Case for a Mostly Open Internet	McLaughlin & Castro (2019)	Information Technology and Innovation Foundation	None	No	Not clearly specified, broad discussion of Internet openness	Free flow, but with common technical standards	In line with the title - driven by the "mostly openness" idea	Broad: looks at technical, commercial, government threats to openness; value of openness: GDP, trade in services, productivity, employment, innovation; cost of reducing openness	Not specifically, mentions developing countries where there is data or interesting case studies	Policy making should stop at nation's border, not impact other countries	How does the idea of legislating only within boundaries work in practice?	Interoperability of standards
Academia	The Court of Justice of the European Union in Schrems II: The impact of GDPR on data flows and national security	Meltzer (2020)	Brookings	None	No	Personal data	Free flow - or questioning adequacy requirements	Driven by free flow idea; Reaction to scrapping of the EU-US Privacy Shield	Narrow: GDPR's impact on US in particular	No	Points out different standards of "adequacy reasoning" of the EU Commission and the Court of Justice and tensions arising there: Commission's view more holistic of also considering impact of immediate stop of data flows - Court only looks at national security agency accessing personal data	Adverse impact of privacy shield failure and adequacy requirements that are too taxing on SMEs	
Private Sector	Cross-border data flows - Policy recommendations	Microsoft (2017)	Microsoft	None	None	Primarily business data	Free flow	Policy recommendations	Narrow: focus on supporting cloud infrastructure	Implicit: restrictions on CBDFs create relatively large compliance costs for small businesses - hinder innovation	Advocates for avoiding excessive barriers and interoperability of rules	Focused very much on trade policies (WTO, encouraging e-commerce)	
Private Sector	A Cloud for Global Good: A policy road map for a trusted, responsible and inclusive cloud - The 2018 Update	Microsoft (2018)	Microsoft	None	None	Primarily business data	Free flow	Policy recommendations	Narrow: focus on cloud computing	Implicit: want to help address the challenges the world faces currently (inequality, poverty, security threats...)	- Advocates for multi-stakeholder approach for policy development (gov't, business, citizens) - Interoperability between national regulations - Geneva Digital Convention to ensure cybersecurity, international peace and economic prosperity	Putting it all into practice would require a lot of capacity in government	
Academia	Regulating Cross-Border Data Flows in a Data-Driven World: How WTO Law Can Contribute	Mitchell and Mishra (2019)	Monash University/National University of Singapore			Trade-related data	Free flow, with rules on consumer rights, trust, cybercrime and privacy	Legal analysis of status quo (predominantly WTO law) and proposes a new framework	Narrow: trade-related aspects and WTO	- Proposes new WTO framework with rules that allow for staggered implementation such that developing countries can develop capacity before being bound by new obligations - Considers "digital industrial policy" argument: is not in favour of data restrictions to build local digital development as they might rather widen divide	- Builds on existing rules and laws and offers suggestions on how to bring them up-to-date, especially suggests WTO should embrace interactions with international and multistakeholder institutions - Oblige developed countries to provide technical assistance to build capacity on regulation in developing countries	Moves topics of cybersecurity and data privacy/protection strongly into the trade realm	
International Organisation	Measuring the economic value of data and cross-border data flows	Nguyen and Paczos (2020)	OECD	CBDF definition: "ability to transfer data internationally" (p.24) data definition: "unordered and unprocessed representation of any types of observations that are quantified and stored in symbols" (p. 12)	None	Business data	Free flow - otherwise no value can be created from collected data	Descriptive analysis of measuring CBDFs (to infer value) and the challenges	Narrow focus on business data	None		Discussion not specifically aimed at CBDF	

Government agency	Digital Economy and Cross-Border Trade: The Value of Digitally Deliverable Services	Nicholson & Noonan (2017)	Economics and Statistics Administration, U.S. Department of Commerce	"Data flows can be measured in bytes of digital traffic per second, hour, year, or any other amount of time. Data flows can also be categorized in different ways—for example, by the commercial characteristics of the contents" - "Data cross country borders in a variety of ways. They are constantly flowing from the United States to other countries, and vice versa."	Digitally-enabled trade in services; from federal economic statistics of the Bureau of Economic Analysis (BEA)	Trade in services	Free flow	Estimation of upper limit of digitally-enabled services in US imports and exports	Narrow: focus on trade in services and their monetary value	None	Estimation of the importance of data flows for the US and putting numbers to it	- Upper limit estimation as not all services might actually be digitally-driven - Nevertheless underestimates CBDFs and their value as any flow that does not come with a monetary transaction is not covered here, as it is based on Federal cross-border trade statistics (e.g. data flows to big tech)		
Civil Society	Civil Society Letter Against Digital Trade Rules in the World Trade Organization(WTO)	Our World is not for sale et al. (2019)	Our World is not for sale et al			Personal, social, business data, especially data collected by big tech firms	Against free flow that favours multinationals	Position paper		Proposed WTO rules would limit LDCs' ability to use development approaches others have used previously (e.g. infant industry protection)	- Lists policy areas that support growth and development which WTO rules would side-line; - Cautions implementing binding rules for a sector of the economy that is still evolving; - Call against limiting countries' scope for policy making			
Civil Society	Development and free data flow rules are incompatible	Raghavan (2018)	Third World Network			Not clearly specified, but mentions data privacy and data in the context of the WTO	Echoes other civil society organisations that there need to be rules for all countries to benefit	Summary of different perspectives of a discussion	Narrow	- Suggested rules favour developed countries, disadvantaging MSMEs in developing countries - Need to bridge digital divide, improve taxation and privacy before discussing international trade regimes				
Civil Society	India Should Aim for a Digital Non-Alignment	Singh (2019)	IT for Change			Not explicitly mentioned, business context	Free flow to promote open digital value chains, but also focus on building strong domestic digital industry	Opinion piece	Narrow: focus on industry and GVCs	- India specific: country should avoid becoming just a consumer of digital technologies and use its own data to develop a digital industry	- Combines participation in global system with domestic policies; - Against split of the digital sphere into blocks aligned with either United States or China			
International Organisation	International agreements on cross-border data flows and international trade	Spiezia and Tscheke (2020)	OECD	None, description of their possible impact: "these flows are widely regarded as boosting productivity and growth, fostering trade, innovation and entrepreneurship and providing new and enriched means for social interactions and knowledge diffusion" (executive summary)	Gravity model for country-pairs and exports, no measure of data, just whether country pairs are signatories to the same data privacy agreements	Trade data (value of exports in goods and services); points out measurement issues: 1. know too little about what types of data cross borders; 2. relevant categories of data depends on stakeholders who need it (e.g. differences btw business and policy needs)	Free flow	Econometric analysis and overview of different privacy agreements	Ends up being narrowly focused on trade, but points out that data ≠ only trade	None	Allows for positive and negative impacts of privacy agreements on trade, considers the effects to be a combination of cost of compliance and increases in trust; gravity model estimation (easier to follow than general equilibrium ones)	Gravity model estimation does not allow for identification of clear channels that cause certain effects, so limited use for direct translation into policy	Estimation finds that for the EU-US Safe Harbor agreement the increase in goods trade was around 23% (or 7% in full specification in anticipation of ratification) more than for country pairs that were not signatories to the agreement - differs from many simulations of these agreements	Difficulty of privacy agreements as they can have opposing effects through ensuring interoperability (compliance costs) & better cooperation between agencies that enforce privacy (increased trust); better data required to understand situation better
Academia	"Data localization": The internet in the balance	Taylor (2020)	Institute for Information Policy			Not focused on a specific type, personal data, data in trade context and for new technologies	Free flow to enable emerging technologies and in contrast to data localization	Policy analysis highlighting implications of localization measures and political, cultural and legal elements driving them	Relatively broad consideration of aspects of data localization	- Different negotiating power of countries in trade negotiations could lead to outcomes that not all countries favour; - Argues against data localization as an approach to develop local digital businesses (approach ignores important opportunity costs)	Nuanced view on factors around data localization - Discussion around concept of data sovereignty, cross-border data flows and data localization	Fragmenting the Internet can have adverse effects on technologies relying on data; implicitly this could make them more biased if they only have access to limited international data	Assumes that Europe's rules may become the global standard as countries that modify their data approaches to exchange data with this relatively large market might as well harmonize their rule and adopt similar ones	
Academia	Effects of Regulations on Cross-border Data Flows: Evidence from a Survey of Japanese Firms	Tomimura, Ito, Kang (2019)	Research Institute of Economy, Trade and Industry (RIETI)	None	Firm-level survey of Japanese large and medium-sized enterprises on how they are impacted by foreign regulation on CBDF (e.g. GDPR, China's security law and generically Russia/India/Viet Nam	Raw data in a business context	Relatively neutral, towards free flow	Firm-level survey and descriptive analysis of the results	Narrow: data transfers in manufacturing, wholesales and information services	No	Shows that few firms stopped, changed or decreased their business with EU/other countries after regulation imposed (btw 1-5 percent) in contrast to other papers	Survey only assesses negative impacts on data transfers (i.e. those that incur costs, could have asked for increases in data flows due to better harmonisation); But it causes shifts, e.g. more data storage/processing in the regulating jurisdiction (30% of firms that said they were affected by regulation, 5-8% of total sample)	Regulation abroad does not impact too many firms; But it causes shifts, e.g. more data storage/processing in the regulating jurisdiction (30% of firms that said they were affected by regulation, 5-8% of total sample)	
Civil Society	Digital trade (e-commerce)	Trade Justice Movement (2020?)	Trade Justice Movement			Not specified, but personal data plays a role	Free flow with rules and policy space to share wealth created	Position paper	Narrow: focus on risks of proposed digital trade rules	Current rules likely to favour rich countries with threat of growing inequality	Calls for moderated pace in digital policy making to ensure fair distribution of wealth	Calls for 1) exceptions for developing countries, 2) no tariff ban, 3) limiting algorithm secrecy, 4) no outright banning of data localisation, 5) policy space for national governments to regulate digital economy		
Civil Society	A Roadmap for Cross-Border Data Flows: Future-Proofing Readiness and Cooperation in the New Data Economy	WEF (2020)	WEF	CBDF def: "The regular unimpeded movement of data across international borders." (p.44)	None	All, government, business, personal	Free flow, but with sound regulational backing	Policy roadmap	Broad: how to shape a beneficial regulatory environment from a national perspective	Not explicit	Offers a regulatory roadmap for CBDFs: (data protection where necessary, ensuring cybersecurity, good infrastructure, accountability between countries - e.g. adequacy)	- Roadmap is very high-level which might make it difficult to implement for countries; - Assumes all countries want free flow of data	Intellectual property (including algorithms) should be well protected	

Public & private intent
data

Free flow, with rules

CBDf discussion mostly
trade-focussed

Narrow: discussions on
CBDf are concentrated on
trade issues

Data provides potential for developing
countries, especially as suppliers of data
intensive services

Calls for more low-income
countries to be included in
negotiations around digital trade
and that attention must be paid to
not making the regulatory,
financial and capacity burden too
high to implement new rules