

Digital Trade in a Post-Pandemic Data-Driven Economy

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02 June 2020

Abstract: The pandemic is impacting the global economy at a time of major transformational change driven by the digital transformation, a decoupling between the United States and China, and the rise of populism. The massive economic shock of the pandemic is not only accelerating changes that were “in the works,” but is also deflecting the evolution of the economy in new and unexpected directions by changing market evaluations of supply chain risks and raising national concerns about the robustness of domestic capacities for emergency response. Whether V-shaped, W-shaped, or “Nike swoosh”-shaped, the important issue is not so much when (and if) the global economy regains the heights of the pre-pandemic era, but where the recovery takes the global economy in terms of how and where work is done. A substantial part of the fixed capital stock will have to be written down or written off, including the backbone economic infrastructure; comparative advantage of nations will be reshaped by national investment strategies (which may include an accelerated adoption of green economy strategies to address climate change); and business strategies will evolve to take advantage of accelerated technological development and to respond to changing patterns of demand. These developments will naturally have major implications for the direction and structure of trade, as regards both traditional goods and services and the rapidly growing forms of digital and digitally-enabled trade. The accelerated expansion of the latter forms also heightens the need for trade governance reforms.

Keywords: digital trade, digitally-enabled trade, ecommerce, data-driven economy, WTO, G20, DEPA

JEL Codes: F13, F15, F51, F61, F68, K21, K24

Acknowledgements: This note was developed for a presentation to the T20 Trade and Investment Working Group, Riyadh, 21 May 2020.

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There Will Be No Going Back

The year 2020 marks a break point in global economic history, with the punctuation mark being the low probability but high impact Black Swan event of the COVID-19 pandemic. Whether the recovery from the deepest downturn since the 1930s Great Depression is V-shaped, W-shaped, or (most likely) “Nike swoosh”-shaped, there will be no going back to the patterns of production that prevailed pre-pandemic. By the same token, international trade faces a wrenching adjustment.

First, the pandemic comes at a time of accelerated change driven by the digital transformation. The pandemic-induced requirements for immediate social distancing propelled instant adoption of business and social practices that might otherwise have taken a decade to fully take hold in areas ranging from business meetings to legal routines (Helmer, 2020). Face-to-face interaction will gradually resume as the pandemic is suppressed; however, this will likely be where there are the greatest advantages in terms of exchange of tacit information and the capture of social value, while the new pandemic patterns will persist where there are cost and efficiency gains from doing so. Natural experiments of living without globalization are underway (e.g., Australia and New Zealand emerging from lockdown, but with closed borders; Heath, 2020).

Second, the transition to the data-driven economy (DDE) puts the vast rents this economy generates in play, driving a new contest to capture them, with an associated geopolitical/geoeconomic realignment internationally and a realignment of political interests within economies (Ciuriak, 2019).

Third, the business landscape is changing permanently as some companies exit, while others expand through innovative business design (McKinsey, 2020). The pandemic shock is not only accelerating changes that were “in the works,” but it is also deflecting the course of economic evolution by changing market evaluations of supply chain risks and raising national concerns about the robustness of domestic capacities for emergency response. Thus, the retail apocalypse that had been progressing steadily will likely see years of future decline telescoped into a precipitous collapse (Peterson, 2020). But a re-reckoning is taking place across the waterfront of corporate activity: as capital is written down or off, companies will look to the future not the past.

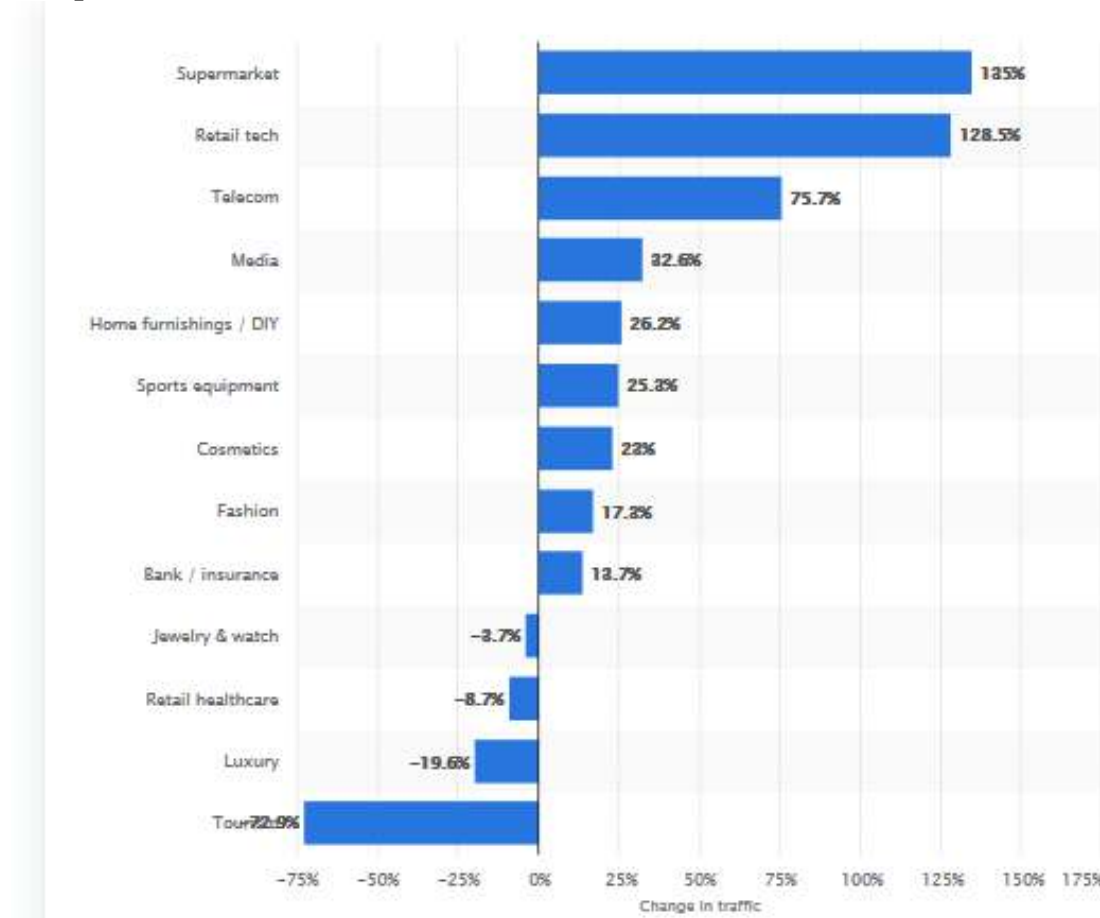
Fourth, we appear to have entered an international institutional inter-regnum. Under the Trump Administration, the United States has effectively walked away from the Americanized system of globalization developed under its hegemonic tutelage, in which it enjoyed great deference and the “exorbitant privilege” of a dollar-based system of commerce. Peak globalization was already a thing of the past, replaced by “slowbalization,” which *The Economist* (2019) argued reflected structural factors, such as the exhaustion of trade-driven cost reductions. However, the US push for decoupling and strategic repositioning vis-à-vis its “near-peer” competitors (China and Russia) push the system over the edge onto a potentially very slippery slope, without any defined landing zone and with only a general notion of national security-based economic nationalism as a compass to guide the slide.

The patterns of trade that emerge in the post-pandemic economy will thus reflect change along multiple vectors: consumer patterns, business strategies, and technology-driven national contests for rent and power, with uncertain constraints from institutional guardrails (Ciuriak, 2020).

Digital Commerce in the Pandemic Economy

The pandemic is triggering economic and social responses in a highly digitally-connected global population. Estimates suggest that 4.57 billion people are connected to the Internet, but also that 5.16 billion or 66% have a cell phone. In terms of shares of the global population aged 14 and over, about 80-90% of the world is networked. Online transactions worldwide have soared compared to a year earlier: in the week ending on April 19, the gain over 2019 was 42.8% (Clement, 2020). However, the impact varies hugely between industry segments, ranging from a 135% increase in online traffic for supermarkets to -72.9% for tourism in that particular week.

Figure 1: Pandemic Impact on Online Traffic; Selected Industries Worldwide; Week Ending 26 April 2020



Source: Statista (2020).

The telecommunications system has managed to handle the surge in usage to date, but bandwidth requirements are likely to expand as, for example, educational institutes expand online enrolment in what might be permanent shifts away from traditional practices.

In terms of economic structure, there is likely to be a substantial degree of reversion to traditional forms, but also a considerable degree of permanent change. Since the digital economy is a symbiont of the physical world, some of the business models that flourished in the pre-pandemic DDE have experienced precipitous decline – for example, the Hertz bankruptcy (Sonnemaker and Frias, 2020); the sharing economy has also been hit very hard (Conger and Griffith, 2020). Meanwhile new winners, such as Zoom and Google Meet, emerge.

The extent of substitution of digital for material forms of commerce and social interaction as a coping mechanism in the connected world emphasizes the huge disadvantage for the unconnected. Digital divide issues promise to make the pandemic economic impact more severe in societies that are less able to make the necessary transitions. This will also likely re-prioritize development plans.

The Impact of the Pandemic on Digital and Digitally-Enabled Trade

Table 1 sets out a taxonomy of the forms of digital and digitally-enabled trade as a basis to parse out these effects, which, of course, apply both within and across borders and which can be used to delve through the impacts.

Table 1: A Taxonomy of the Forms of Digital and Digitally-Enabled Trade

Mode	Type	Examples and Business Models
Mode 1	“Digital to real” transactions, including provision of access to the Internet	Web-search, e-learning, gaming, mobile applications, online gambling, communication services (such as WhatsApp or Skype), information services (such as maps and online encyclopaedias), online advertising, Netflix, etc.
Mode 2	“Real to real” B2H (business to household) and B2B (business to business) transactions with digital intermediation	Amazon and other distributional services; travel services (hotel bookings, flight reservations), purchasing software, etc. provided on a B2H basis; for business services, this captures “trade in tasks” conducted on a B2B basis.
Mode 3	“Real to real” H2H (household to household) transactions with digital intermediation	Peer-to-peer transactions (eBay, Uber, AirBnB) from H2H, digitally mediated.
Mode 4	“Real to real” H2B (household to business) transactions with digital intermediation	Platform-based providers of household services to business (Fiverr, Upwork) – which amounts to GATS Mode 4 trade (movement of persons) conducted through digital enablers; this captures trade in tasks conducted on a H2B basis.
Mode 5	The capitalization of data flows	Personal data (Facebook, Google), data generated over the “Internet of things,” financial and personal data of online consumers (Alipay) with cross-border flows on a “bot-to-bot” basis, with no receipts or payments attached and value captured through secondary processing of accumulated data acting as the capital stock for industrialized learning.

Source: Ciuriak and Ptashkina (2018).

Mode 1 in this taxonomy is comprised of purely digital transactions in which the digital product is sourced from servers that can be located anywhere. We can broadly think of this as the **Internet economy**. Social distancing requirements have generated a steep surge in the use of Internet tools (50-70% spike in Internet hits based on preliminary data; Beech, 2020) and demand for digital products (e.g., streaming services are up 12%; Beech, 2020). Social media use has soared (record

use of Facebook apps like Instagram and Whatsapp; Estes, 2020), although mobility applications were down with less movement of people (Koeze and Popper, 2020). The emergence of new platforms for marketing (Tik Tok) raise new opportunities to sell services although they also raise questions of monetization and likely promote yet another source for the superstar phenomenon.

Mode 2 is **traditional e-commerce**. With the pandemic, ecommerce use has surged, especially for grocery shopping. While this is mainly local trade and some of the habits will revert, some of the shifts may have longer-standing impacts. For example, wines produced for restaurants saw a steep decline in demand and even international marketing efforts switched to direct sales to households. The ascendancy of this mode in the pandemic is accelerating the retail apocalypse, which will favour permanent change, and intensifying future governance issues, such as economic concentration and anti-trust (for example, does page 2 of a Google search response matter?).

Mode 3 can be thought of as the **sharing economy**. The sharing economy was initially hammered by the pandemic, but it is rebounding as lockdowns are eased. Markets appear to be optimistic as Uber has seen its market cap recover notwithstanding a precipitous profit/loss margin reported at the height of the lockdown. Enterprises have had to adopt new safety regimens to gain customers' trust – for example, Airbnb has adopted sanitation protocols for hosts while Uber and Lyft have adopted requirements for drivers and passengers to wear masks (Bond, 2020). It remains to be seen, however, whether formal enterprises will recover market share due to having a scale economy edge in meeting regulatory requirements for hygiene and standardized social-distancing policies.

Mode 4 is the **gig economy** at the international level. The widespread move to remote working sets the stage for expansion of this economy. By the same token, borders may become truly irrelevant as remote working becomes more deeply entrenched. Facebook, for example, has announced an intention to have half its workforce working remotely within the next 10 years (Carter, 2020). However, although some see “office centrality” being a thing of the past (e.g., Shopify's CEO Tobi Lutke recently tweeted that his company is “digital by default”), the reality of tacit knowledge spillovers that drive innovation hubs suggests that there will be a rebalancing back towards localization, albeit leaving some activities that generate few such externalities remaining in the digital domain (Levy, 2020).

Mode 5 is “**data as the new oil**.” Data is not, for the most part, traded across borders with invoices and receipts; rather, it is what used to be “data exhaust” – the vast amounts of data associated with market transactions or activity that are now being captured, curated, and capitalized as the essential productive asset of the DDE (Ciuriak, 2018). The value of data is presently only really visible in the market capitalization of the major Internet companies, but less obviously it is driving the valuation of companies cross the industrial spectrum. Protected as a trade secret, data is the new major source of rents; and rents – as always – incite a contest for their capture. Data rent sharing is the big contest of today and it is at the centre of the international conflict over 5G networks, the battle over data in the Sidewalk Toronto initiative, the proliferation of new digital taxes, and the negotiations concerning rules for free flow of data across borders. With the pandemic, the market capitalization of the major data-driven firms has soared, with new impetus being derived (it would appear) from the regulatory opening to capture data for contact tracing.

As a bottom line, digital and digitally-enabled commerce has been given a strong boost by the pandemic. Much of this is local. However, while traditional trade is depressed by the pandemic, digital and digitally-enabled trade are undoubtedly expanding, which will be evident as the statistics start to come in.

A Need for Acceleration of Reforms

Technological change is creating a new set of facts on the ground that mandate change in the nature of governance. This is underscored by the existence of platform firms with more clients than the populations of the United States, China, and the European Union combined, and the ability to operate in an economy without a physical presence, while locating valuable intellectual property in the most convenient tax jurisdictions and booking profits wherever accountants choose. We are only at the beginning of the age of data and it has already signalled its propensity to concentrate income and create new sources of social power and new sources of friction that demand mediation (Ciuriak, 2019a) – including the geo-political tensions arising from the US-China battle for technological supremacy. There are also newfound concerns about supply chains that might motivate what might be essentially protectionist trade measures under the guise of national security concerns.

The new post-pandemic, digitally transformed economy will feature urgent needs for global public goods related to the digital transformation, the pandemic, and climate change. The framework of global institutions established under US hegemony, which provides these public goods, is however being disrupted, as the United States government walks away from one global institution after another. This is particularly troubling.

However, necessity is the mother of invention and there are a number of irons in the fire to remedy the situation:

- The ecommerce negotiations at the World Trade Organization (WTO) provide a venue to move forward on the issues raised by the digital transformation. These negotiations do, however, need to be generalized to prepare the way for a WTO 2.0 that is fit for purpose for the digital age (Ciuriak, 2019b).
- An attempt to construct what might be the template for WTO 2.0 is under way through the recent discussions between Chile, New Zealand, and Singapore towards a Digital Economic Partnership Agreement (DEPA), in which these economies hope to reprise their success in starting the ball rolling toward the Trans-Pacific Partnership.
- The G20 is engaged with its proposal for a “free flow with trust” model for reinvigorated multilateralism, as developed during Japan’s year as chair in 2019.

Measures governing digital trade in trade agreements can have repercussions well beyond trade. For example, such trade agreements as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the United States-Canada-Mexico Agreement (USCMA) have run ahead of society’s understanding of how to handle the myriad complex issues raised by the digital transformation and may ultimately limit our ability to deal with the domestic policies related to competition, privacy, industrial policy, cultural policy, and so on. The need to integrate the

multiple aspects of digital governance might require something beyond the WTO to address these complex issues with solutions that can then be fed into the trade arena. One such idea is a Digital Stability Board (Fay, 2019), loosely modelled on the Financial Stability Board established following the Global Financial Crisis.

While formal institutional developments have lagged because of the disruptions caused by the pandemic, a very hopeful sign is the role of international digitally-enabled networks in supporting professional collaboration in addressing the pandemic, which has run ahead of often rancorous and counterproductive politics and seemingly below the political radar. New professional stars have been born and a fully independent investigation into the coronavirus, its origins and its pathology is underway in parallel around the globe in thousands of labs. This points in very promising directions as regards making supply chains more robust through improved networking as opposed to pulling back from globalization, as further discussed below.

As trade shifts increasingly into digital and digitally-enabled modes, the legacy infrastructure from the industrial age will often prove to be misaligned with the needs of the post-pandemic digital economy, meaning that some existing infrastructure will be written off on an accelerated basis, while major new investments are mobilized. 5G networks will not only power the next phase of the digital transformation, but will also be central in reconfiguring the economy to address climate change imperatives and the changes in the patterns of consumption and production that emerge in response to the pandemic. This means that public policy and investment will be driven in new directions. Here as well, frictions that require mediation are flaring, particularly as regards capturing the rents implicit in the development of the new operating systems.

Another post-pandemic feature will be supply chain restructuring. While much of the discussion is based on repatriation of supply chains, such a move would likely result in highly inefficient approaches to risk management – redundancy rather than repatriation is required, since networks with distributable surge capacity are much more capable of meeting spikes in global demand for particular goods. Countries that invest in nationalism rather than restoring a trust-based trade system will predictably be uncompetitive and the total surge capacity of the world as a whole will be substantially greater than actually required, even as other needs are left unaddressed by the misdirection of investment. This area again requires the establishment of new international norms after the many mis-steps taken by the international community in terms of hoarding in the early months of the pandemic.

Conclusions

While traditional trade has suffered a massive negative shock due to the economic disruption caused by the pandemic, digital and digitally-enabled commerce has surged not only locally, but also across borders. As we move into a post-pandemic, digitally-transformed economy, many of the business reforms prompted by the crisis will persist. This will change the revealed comparative advantage of nations. Comparative advantage will further be reshaped by national investment strategies to address the risks made prominent during the pandemic and to take advantage of the write-down of legacy infrastructure to accelerate adoption of green economy strategies to address climate change. These developments will naturally have major implications for the direction and

structure of trade, both as regards traditional goods and services and as regards the rapidly growing forms of digital and digitally-enabled trade.

The accelerated expansion of digital and digitally-enabled trade also heightens the needs for trade governance reforms. While near-term prospects for the multilateral governance reform needed to mediate international commerce in this coming era are bleak, there are numerous irons in the fire and now is not the time to slow down work on these reforms, but indeed to accelerate this work. The G20 has a role to play here and has a body of work already in hand on which to build.

References

- Beech, Mark. 2020. "COVID-19 Pushes Up Internet Use 70% And Streaming More Than 12%, First Figures Reveal," *Forbes*, 18 March.
- Bond, Shannon. 2020. "Who Dares To Rent A Dress Now? Coronavirus Upends The Sharing Economy." *NPR*, 1 June.
- Carter, Eliza. 2020. "Facebook Joins Accelerating Trend Toward Permanent Remote Work." *Morning Brew*, 21 May.
- Ciuriak Dan. 2018. "The Economics of Data: Implications for the Data-Driven Economy." In *Data Governance in the Digital Age*, edited by Centre for International Governance Innovation. Waterloo: CIGI. <https://papers.ssrn.com/abstract=3118022>
- Ciuriak, Dan. 2019a. "Economic Rents and the Contours of Conflict in the Data-Driven Economy." Presented at the inaugural conference of the Raoul-Dandurand Chair's Center on *Multidimensional Conflicts on Cybersecurity, political interference and information manipulations: challenges for Canada*, University of Quebec at Montreal (UQAM), 29 November. <https://papers.ssrn.com/abstract=3496025>
- Ciuriak, Dan. 2019b. "World Trade Organization 2.0: Reforming Multilateral Trade Rules for the Digital Age." *CIGI Policy Brief* 152. <https://papers.ssrn.com/abstract=3415973>
- Ciuriak, Dan. 2020. "Into the Post-Pandemic." Working Paper, 3 May. <https://papers.ssrn.com/abstract=3591792>.
- Ciuriak, Dan and Maria Ptashkina. 2018. "The Digital Transformation and the Transformation of International Trade." *RTA Exchange*. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and the Inter-American Development Bank (IDB). <https://papers.ssrn.com/abstract=3107811>
- Clement, Jessica. 2020. "Coronavirus global online traffic impact as of April 2020." *Statista*, 29 April.
- Conger, Kate and Erin Griffith. 2020. "The Results Are In for the Sharing Economy. They Are Ugly." *The New York Times*, 7 May.
- Estes, Adam Clark. 2020. "Why the internet (probably) won't break during the coronavirus pandemic," *Vox*, 25 March.

- Fay, Robert. 2019. "Digital Platforms Require a Global Governance Framework." Centre for International Governance Innovation, 28 October. <<https://www.cigionline.org/articles/digital-platforms-require-global-governance-framework>>.
- Heath, Michael. 2020. "Australia Goes Back to the 1980s With Its Economy Closed to World." *Bloomberg*, 19 May.
- Helmer, Aedan. 2020. "'There is no going back': How COVID-19 forced courts into the digital age." *Ottawa Citizen*, 17 May.
- Koeze, Ella and Nathaniel Popper. 2020. "The Virus Changed the Way We Internet," | The New York Times, April 7.
- Levy, Steven. 2020. "Remote-First Companies Are Another Covid-19 Calamity." *Wired*, 22 May.
- McKinsey. 2020. "COVID-19: Briefing Materials." McKinsey & Company, 6 May.
- Peterson, Hayley. 2020. "More than 3,000 stores are closing in 2020 as the retail apocalypse drags on. Here's the full list." *Business Insider*, 11 May.
- Sonnemaker, Tyler and Lauren Frias. 2020. "Hertz files for bankruptcy as the coronavirus pandemic crushes the car-rental industry." *Business Insider*, 22 May. <<https://www.businessinsider.com/hertz-filing-for-bankruptcy-as-early-as-this-weekend-report-2020-5>>.
- Statista. 2020. "Coronavirus impact on online traffic of selected industries worldwide in week ending April 26, 2020." *Reach & Traffic*. <<https://www.statista.com/statistics/1105486/coronavirus-traffic-impact-industry/>>.
- The Economist. 2019. "Slowbalisation: The steam has gone out of globalisation. A new pattern of world commerce is becoming clearer—as are its costs." *The Economist*, 24 January.