



## Creating value in the data economy: The role of competition, trade, and tax policy

### Main messages

- 1 The expanding role of data in ubiquitous platform business models is reshaping competition, trade, and taxation in the real economy, posing important risks for low- and middle-income countries.
- 2 The way countries design safeguards and enablers for data will have knock-on effects for the real economy. For example, enabling data sharing among market players can play a valuable role in promoting competition. At the same time, the stringency of data safeguards will shape cross-border trading patterns for data-enabled services. Meanwhile, the intangible nature of digital value chains is posing major challenges for tax revenue mobilization.
- 3 Low- and middle-income countries too often lack the institutional capacity to manage the economic policy challenges posed by the data-driven economy. These challenges call for agile competition policies and modern trade and tax administrations. Complicating matters, policies on competition, trade, and taxation are significantly intertwined.
- 4 Internationally coordinated action—on antitrust enforcement, regulation of platform firms, data standards, trade agreements, and tax policy—is critical to ensuring efficient, equitable policies for the data economy that respond to countries' needs and interests.

## Shaping data regulation to support competition, trade, and taxation

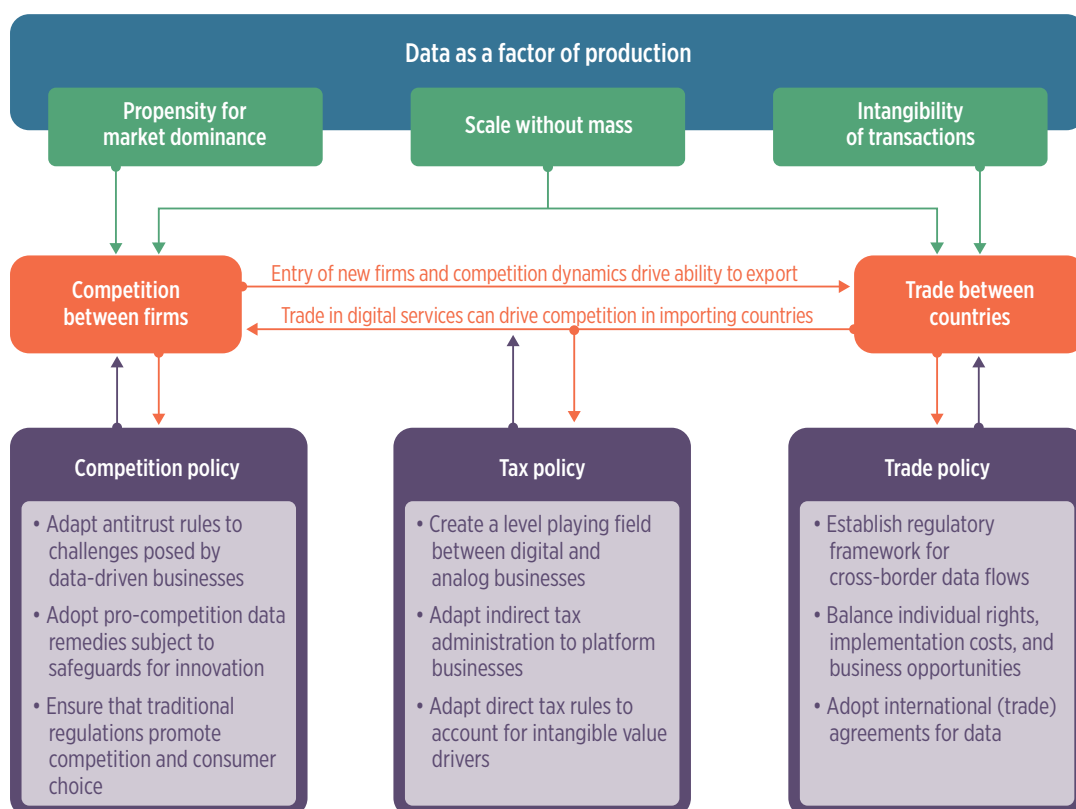
Rapid technological innovation and the associated explosive production of data are reshaping the business landscape (see chapter 3). New data-driven businesses—with their intangible assets such as data and algorithms—are rapidly gaining ground in markets worldwide. These include the global players that often make headlines, such as Alibaba, Amazon, Facebook, and Alphabet (Google), as well as more local platform businesses in lower-income countries, such as the Nigerian agricultural platform Hello Tractor, which matches smallholder farmers with underutilized tractors, and the Egyptian educational platform Tutorama, which matches students to high-quality tutors.

Data-driven businesses exhibit idiosyncrasies that distinguish them from more traditional firms—notably, their greater propensity for market dominance in some cases, their ability to achieve scale without

mass, and the intangibility of their transactions (figure 7.1). Each of these characteristics poses important challenges for economic outcomes in competition, trade, and taxation, potentially offsetting some of their positive effects.

Using data as an input to the production process can give businesses a competitive advantage, which, because of economies of scale and scope associated with data and the strong network effects arising from platforms, enables them to entrench their market position and potentially exercise market power. Data-driven markets tend to exhibit economies of scale because of the large upfront fixed cost of technical infrastructure and the advantage large datasets offer for learning. By accumulating tremendous amounts of data through transactions and applying algorithms, businesses are able to provide their clients with customized services and products. For example, e-commerce platforms tailor product suggestions to their clients' shopping history, thereby enforcing the tendency of customers to stick with such platforms because they “understand” their customers better.

**Figure 7.1** The unusual characteristics of data-driven businesses pose complex challenges for policy makers in the areas of competition, trade, and taxation



Source: WDR 2021 team.

Positive network effects further strengthen market positions because third-party suppliers prefer to display their products on more highly frequented platforms where the odds are higher they will make a sale. Customers, in turn, are more likely to visit such platforms because of the wider choice of third-party suppliers.

Because data-driven businesses rely on value drivers such as data and algorithms that can be infinitely replicated and instantly distributed around the world, they are able to achieve scale without mass. They can, then, be a major player in a market without having any brick-and-mortar facilities, local employees, or even domestic business registration. For example, Facebook has more than 2.6 billion active visitors each month spread over nearly every country in the world, but it maintains office locations in just 35 countries.<sup>1</sup> Similarly, AliExpress, a Chinese-based e-commerce platform launched in 2010, now has users in more than 230 countries and regions.<sup>2</sup> It, too, relies on data and algorithms rather than offline retail stores. Meanwhile, the cross-border trade in digital services is climbing. These services, largely intangible, include social media, big data analytics, cloud computing, and online services.

The changing nature of data-driven businesses challenges traditional economic policies, calling for adaptation and paradigm shifts (figure 7.1). In competition policy, it is important to address the tendency of data-driven businesses to tip toward concentrated market structures and entrenched market power. However, the complex and novel nature of data-driven business models can pose difficulties for traditional antitrust regulation in all countries. At the same time, the rapid growth of international trade in data-driven services is raising tensions between the need for data to flow across borders and the need to ensure that any personal data involved in such trade are adequately protected as they move into other jurisdictions. Taxation authorities are struggling to value, map, and track digital value chains in the data-driven sector. Administration of the value added tax (VAT) is complicated by third-party vendors operating through platform businesses. Meanwhile, the prevalence of scale without mass is challenging the long-standing taxation principle of permanent establishment and physical presence as a basis for establishing corporate tax liability.

Domestic policies relating to competition, trade, and taxation are significantly intertwined, requiring a coordinated approach to policy reform. Effective antitrust policies strengthen competition in the domestic market, thereby enhancing competitiveness

in international trade. Governance frameworks that support trade in data-enabled goods and services may at the same time intensify competitive pressures in the local economy. Nonetheless, for platform businesses, trade openness could lead instead to greater market concentration as the dominance of global firms is further reinforced by access to new markets and associated data. At the same time, the inability to tax platform businesses effectively may undermine competition between local and foreign firms, as well as between digital and analog businesses operating in the same sectors, affecting both competition in domestic markets and competitiveness in global markets.

All three of these policy areas call for internationally coordinated action. Antitrust measures in one country can affect the fortunes of globally active firms, with spillover effects for other jurisdictions. Trade agreements, as well as global harmonization of technical standards for data sharing, play an essential role in promoting international commerce for data-enabled goods and services. International tax policy regimes determine the allocation of taxation rights across countries, while cross-border cooperation on tax administration can help ensure that revenues are fully captured.

This chapter discusses the policy challenges and responses arising from competition, trade, and taxation. A central theme is how these policies interact with the broader legal and regulatory framework on data safeguards and enablers described in chapter 6. Policy makers should heed the two-way linkages between economic outcomes and data regulation and carefully weigh the trade-offs that may arise between safeguarding and enabling data sharing versus advancing wider economic goals such as productivity, competitiveness, and growth.

## Competition policy

The rise of data-driven businesses can drive pro-development market opportunities, but data can also give firms a competitive advantage that may push markets into entrenched concentration and market power. This advantage increases the risk of excluding smaller firms and entrepreneurs and exploiting individual users of data (chapter 3). The key challenge for policy makers is to preserve the positive externalities that create value in data-driven markets, while ensuring that these externalities can be harnessed by all players in a competitive, vibrant ecosystem without violating the rights of individuals.

This chapter focuses on data-driven platform firms because of their pertinence across economies



at different levels of development. The complex interactions between data protection concerns (outlined in chapter 6) and competition concerns (described in this chapter) are further explored in spotlight 7.1.

Governments have two complementary competition policy tools to safeguard against the risks of excluding smaller firms and exploiting individual users of data. The first tool is *enforcement of antitrust laws*, with adaptations to the context of data-driven businesses. Enforcement involves detecting and punishing anticompetitive practices (in which a firm abuses its dominant position or a group of firms enters into an anticompetitive agreement) or preventing anticompetitive mergers. The second tool is the *design of regulations* to allow data-driven firms to enter markets and compete on a level playing field, while also protecting users. These *ex ante* policies lay down ground rules for the market to promote competition and could include data governance regulations, regulations directed at large data-driven platforms, and traditional sector regulations. Because these two competition policy tools complement one another, they can be applied in parallel, depending on the institutional setting and the issues to be tackled.

### Enforcing antitrust laws

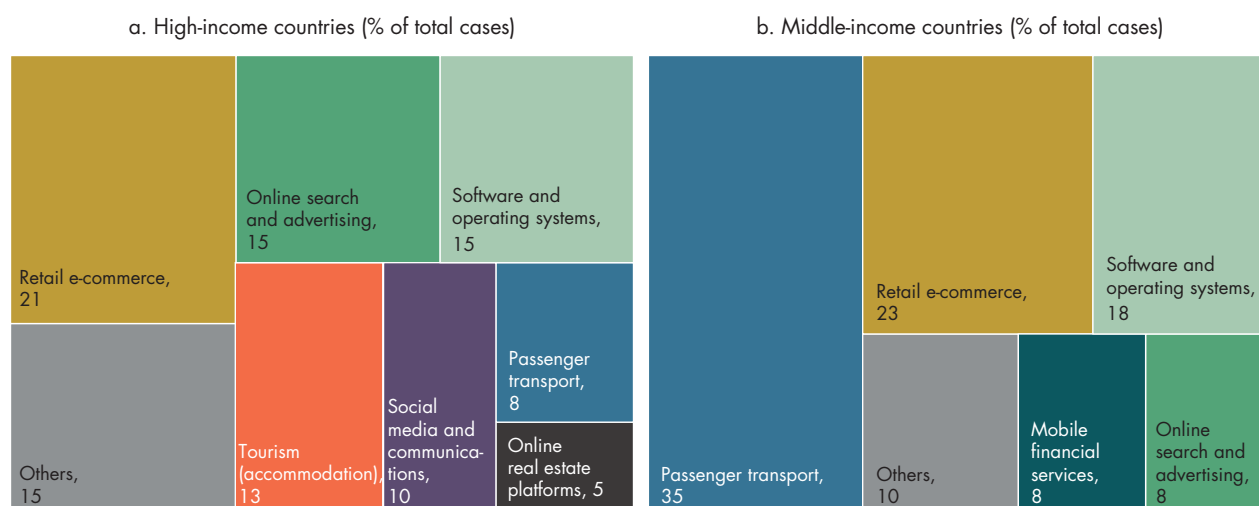
Antitrust investigations in the data economy are not just a developed country phenomenon. Worldwide, as of January 2020 some 102 antitrust cases across 16 different sectors on abuse of dominance,

anticompetitive agreements, and mergers had been finalized.<sup>3</sup> European antitrust authorities have finalized the most cases (33 percent), followed by authorities in East Asia and the Pacific (18 percent) and Latin America (15 percent). The most active lower-middle-income countries included the Arab Republic of Egypt, India, and Kenya, with more cases still under investigation in Indonesia, Nigeria, and Zimbabwe. Low-income jurisdictions had not yet finalized any antitrust cases involving digital platforms, likely reflecting the absence of functional or well-resourced antitrust regimes and lower policy prioritization.<sup>4</sup>

Among landmark cases from the middle-income country group is the 2018 investigation by the Competition Commission of India finding that Google abused its dominant position in web search and advertising. Google favored its own services and partners through manual manipulation of its search algorithm, thereby putting smaller businesses at a disadvantage.<sup>5</sup> In another salient example, Mexico's Federal Economic Competition Commission (COFECE) blocked Walmart's proposed acquisition of the Cornershop app in 2019, because the new company would have access to data on the sales of competing retailers through the Cornershop platform, which was believed to prejudice smaller rivals.<sup>6</sup>

Antitrust cases related to the digital economy in e-commerce, passenger transport, and operating system application development account for more than half of cases globally (figure 7.2). E-commerce

**Figure 7.2** In the digital economy, antitrust cases related to passenger transport are more prevalent in middle-income countries than in high-income countries



Source: Nyman and Barajas, forthcoming. Data at [http://bit.do/WDR2021-Fig-7\\_2](http://bit.do/WDR2021-Fig-7_2).

Note: Percentages are based on information for all antitrust cases involving digital platforms globally for which information was publicly available as of January 2020. Cases total 62 in high-income countries and 40 in middle-income countries. Panel a: "Others" includes digital music, e-books, educational materials, food delivery, online comparison platforms, dating platforms, and ticketing. Panel b: "Others" includes online delivery services, ticketing, and tourism. No cases were finalized in low-income countries, according to publicly available information.

cases account for about 20 percent of total cases sampled and are equally prevalent in middle- and high-income jurisdictions. Cases related to the passenger transport sector are the most prevalent in middle-income countries, where they make up one-third of all cases, reflecting in part a wave of mergers between ride-hailing firms in middle-income countries in recent years.

Abuse of dominance cases are more prevalent in middle-income countries, while cases on anticompetitive agreements are more common in high-income countries. The type of anticompetitive behavior by data-driven platforms in different sectors may depend on the nature of their business models. In the e-commerce and tourism sectors, cases of vertical restraints (agreements between firms at different levels of the value chain that constrain competition) predominate, potentially reflecting the reliance on small businesses to provide products and capacity in these sectors (figure 7.3). In online search and advertising and software and operating systems, cases of abuse of dominance are more common, likely because of their reliance on self-preferencing algorithms. In passenger transport, collusion cases (agreements to fix market parameters between firms at the same level of the value chain) have been the most frequent, which could stem from the scope for applying pricing algorithms in this sector.<sup>7</sup>

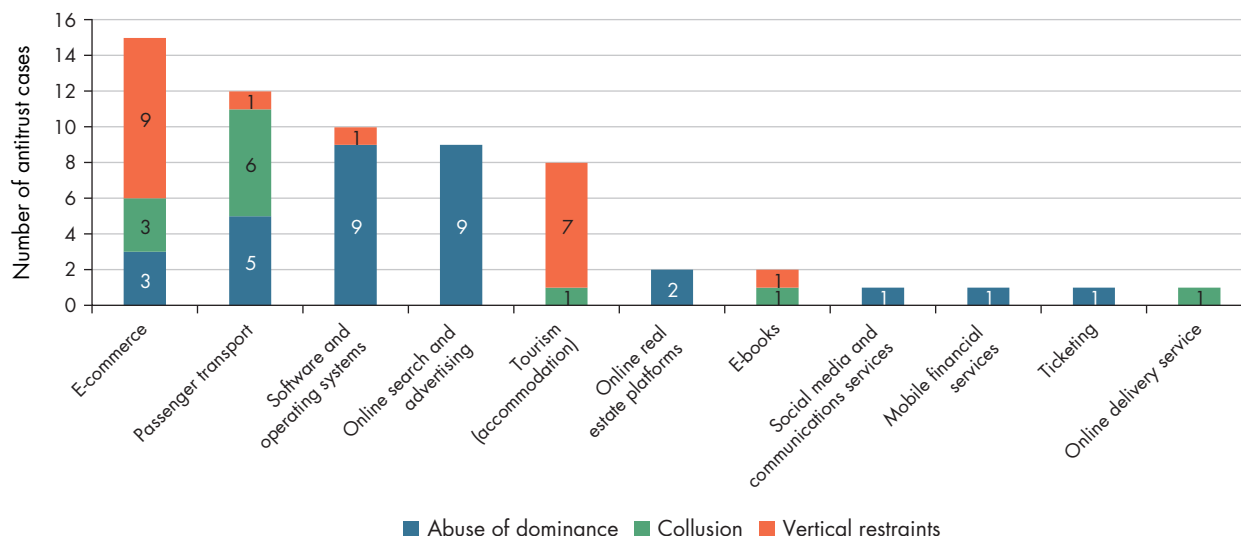
*Adapting antitrust tools.* New market dynamics arising from data-driven markets have spurred

policy makers to rethink their approaches to antitrust enforcement, with jurisdictions around the world devising new strategies and articulating new guidance.<sup>8</sup> Debate and refinement continue, particularly when it comes to issues such as defining “relevant markets” and determining “dominance.” For example, Kenya’s competition authority recently published new Market Definition Guidelines to capture trends in data-driven markets. Such guidelines can be an effective way for authorities to begin to tackle these issues, while providing clarity to firms on the approach that will be taken to regulate their conduct and on the factors that will be assessed in antitrust cases.

The complexity of the data-driven economy for conventional antitrust reflects several departures from traditional markets. Salient challenges include how to assess consumer harm in markets in which goods and services are nominally provided for “free,” how to address collusive algorithms (see chapter 3), and how to account for the nonprice dimensions of competition such as privacy.

The multisided nature of data-driven platforms also means that interactions among groups of users (including advertisers, in some cases) complicate the definition of markets and raises the possibility of cross-subsidization across different sides of the platform. This cross-subsidization includes advertising revenues effectively covering the cost of nominally “free” services provided to platform users. It is precisely the user data collected and processed by these

**Figure 7.3** Among anticompetitive practices, abuse of dominance is more widespread worldwide across multiple sectors of the digital economy



Source: Nyman and Barajas, forthcoming. Data at [http://bit.do/WDR2021-Fig-7\\_3](http://bit.do/WDR2021-Fig-7_3).

Note: Based on information for all antitrust cases involving digital platforms globally for which information was publicly available as of January 2020.



platforms that make advertising on these platforms so valuable because of better targeting (see chapter 3).

The multisided nature of platforms also means that, in addition to selling its own services, a platform acts as a buyer of services or even as a de facto employer of individuals in the gig economy such as drivers, household workers, or professionals who provide services. The potential imbalance in bargaining power between data-driven platform firms and individuals or small suppliers warrants the attention of policy makers. For example, in 2020 South Africa published regulations on protecting against abuse of buyer power that explicitly acknowledged the potential for such situations to arise in e-commerce markets and gig economy services.<sup>9</sup> Some competition authorities have also begun to consider adopting rules against abuse of a superior bargaining position.<sup>10</sup>

Platform firms typically exist in a digital ecosystem, where providers of complementary digital products interconnect and regularly exchange data to provide consumer products (such as the use of Google Maps by digital transport apps). To the extent that these complementor firms may also act as nascent competitors with larger platform firms, the effect of competition restrictions on these complementary products is an important consideration beyond the direct effect on the users of a platform. The potential for platforms to acquire potential competitors in complementary markets before they can become a competitive threat—and either shut them down or prevent further development of their products—has also become a topic of debate.<sup>11</sup> The potential for firms to engage in such “killer” or “zombie” acquisitions may merit consideration in merger reviews. Likewise, authorities should be increasingly alert to the possible harm to competition and innovation from mergers driven by the desire to acquire new data or data-relevant intellectual property such as algorithms.<sup>12</sup>

Under traditional antitrust regimes, mergers involving data-driven firms may be less likely to trigger a review by the antitrust authority because such firms typically do not have sufficient tangible assets or revenues to meet the traditional thresholds for merger notification.<sup>13</sup> Although the urgency of these concerns for developing countries will depend on the start-up environment in a country, thresholds for merger notification could be revamped to allow antitrust authorities to review potentially anticompetitive mergers involving data-driven firms that may appear small but could rapidly become market challengers through exponential growth. This has already occurred in Austria, Germany, and Japan, which have adopted complementary thresholds for

digital markets based on transaction values. Another option for triggering reviews would be requiring notification before mergers of any planned acquisition by dominant firms or shifting presumptions for future mergers so that an acquisition by a dominant platform would be presumed anticompetitive unless the merging parties are able to show otherwise.<sup>14</sup>

*Creating institutional capacity to assess cases in the data economy.* Views vary as to whether specialized digital market authorities should be established to oversee competition in the digital economy (as formally proposed in the United Kingdom<sup>15</sup> and informally discussed in the United States<sup>16</sup>). An increasing number of antitrust authorities in high-income economies have established teams specializing in the digital economy, but authorities in low- and middle-income countries lack the same capacity. A recent World Bank survey of eight competition authorities across developing regions found that none had specialized staff dedicated to cases in the digital economy, and almost all cited limited staffing as a key constraint in their ability to pursue competition issues in digital markets. Moreover, half the authorities surveyed acknowledged their lack of understanding of platform business models.<sup>17</sup> The shortage of capacity and resources among recently formed competition authorities contrasts with the abundant resources of large global digital firms. This imbalance must be taken into account by policy makers when considering the resourcing and institutional setup required to combat competition issues in the data-driven economy. It further strengthens the case for international cooperation as well as for ex ante measures to prevent harm from occurring in the first place (covered later in this section).

As for the substance of investigations, antitrust investigations of platform businesses are increasingly considering features specific to data-driven markets. But the most frequently assessed factors in antitrust cases involving platforms tend to be more traditional: assessment of competition from other platforms and the prices of goods and services. Although these factors often remain relevant, other, more novel issues posed by these markets appeared to be less systematically assessed by agencies. Network effects and multihoming behavior by consumers (use of multiple platforms for the same service) are explicitly mentioned in about 40 percent of cases across all jurisdictions. The issue of whether lack of access to data constitutes a barrier to entry or an essential input is present in 27 percent of all cases, but issues with algorithms are covered in only 13 percent. Data protection and privacy factors were raised as issues in only 6 percent of cases overall. Building capacity

within regulatory authorities would help further address these challenges.

Some antitrust authorities may use data analytics to enhance their capability to detect competition issues in online markets. For example, the Russian Federation's antitrust authority has created an automated system to screen for bid rigging by analyzing data from public tenders to identify signs of collusion. Similarly, Brazil's competition authority has created a cartel screening unit to collect and analyze data, including through web scraping. In the context of COVID-19, competition authorities have encouraged e-commerce platform firms to monitor for excessive pricing practices by their sellers. For example, Amazon suspended thousands of sellers in the United States alone,<sup>18</sup> and Jumia delisted hundreds of products in Nigeria whose prices had been raised in response to the pandemic.<sup>19</sup>

*Remedying harm caused by anticompetitive firm behavior.* A consensus is growing that simply ending such behavior and imposing fines are insufficient. Antitrust authorities are moving toward designing remedies that can help restore competition in the market. Ordering the end of practices such as anticompetitive exclusivity clauses and the anticompetitive tying or bundling of products can, by encouraging multihoming by consumers, facilitate access to data by a broader range of competitors. Elsewhere, further measures specifically targeting data and algorithms may be necessary. But these remedies can be difficult to design and monitor, especially when the algorithms being used by the firm are not discernible.

In the Uber-Careem merger in Egypt, for example, Uber was obliged to grant future competitors access to Careem's "points of interest map data" on a onetime basis; to grant current competitors access to trip data (including rider and driver information), subject to data protection laws; and to give riders access to their own data. Uber also committed to removing exclusivity requirements in contracts with drivers to prevent them from being locked in the merged platform. A different approach was taken in the Uber-Grab merger in Singapore. There, the competition authority considered mandating transferability of driver data between apps before abandoning the idea after a survey of potential entrants suggested this was not an impediment to their entry.<sup>20</sup> This case reinforces the need to design remedies case by case and to link them clearly to a theory of harm in order to safeguard against remedies that are detrimental to innovation without significantly improving competition.

*Cooperating across borders.* Because of the global nature of many platform businesses, antitrust decisions taken in one jurisdiction often have spillover effects in other countries. For example, in Germany, as

part of a remedy to respond to competition concerns from third-party sellers, Amazon agreed to amend its terms of business for sellers on Amazon's online marketplaces across Europe, North America, and Asia. Among the changes was a reduction in Amazon's (previously extensive) rights to use data on the products of third parties.<sup>21</sup> Such cross-country benefits could be further leveraged by promoting international cooperation among antitrust authorities, thereby creating a more predictable regulatory environment for firms.

To date, the European Union (EU) is alone in having a substantial track record in competition enforcement in digital markets at the regional level. However, several regional competition authorities are becoming more active—such as the Competition Commission of the Common Market for Eastern and Southern Africa (COMESA) free trade area—although they have yet to take on a digital markets case. More informal collaboration is also occurring among competition authorities. For example, the BRICS countries (Brazil, Russia, India, China, and South Africa) released a joint report on the digital economy that calls for increased cooperation among the authorities.<sup>22</sup> Antitrust agencies in the Group of Seven (G-7) also released a "common understanding of the challenges posed by the digital economy" in 2019, addressing the need for international cooperation.<sup>23</sup> Emerging free trade agreements—such as the African Continental Free Trade Agreement, which is likely to have a digital focus—could also foster harmonization on competition policy for the data-driven economy through their competition policy protocols.

### **Promoting competition through regulation ex ante**

Ex ante market regulations that promote competition by enabling data use may be just as important as antitrust remedies. Indeed, given the durable nature of market power in data-driven markets and the challenges of designing antitrust remedies, ensuring that markets do not slip into entrenched market power in the first place may be even more important than enforcing antitrust rules ex post. In countries without a developed antitrust regime, including many low-income countries, this is the only line of policy response to foster competitive data-driven markets.

*Adopting mandatory and voluntary schemes to improve access to data.* Governments are considering various regulatory options to ease access to data in digital ecosystems. However, such options remain relatively untested, and evidence on their efficacy is still scarce. Options include facilitating multihoming; extending the right to portability of personal data (in essence, the right to move personal data between different





controllers); facilitating data interoperability (the ability for different systems to share and use data in a coordinated, timely manner); and encouraging data sharing or pooling schemes (when two or more firms agree to merge their data for access by themselves and possibly third parties).

Relatively few jurisdictions have put mandatory portability and interoperability schemes into practice, although a few instructive models are emerging. The European Union has been at the forefront of this push, although an ability to enforce these schemes is not yet clear. The right to portability of personal data is contained in the European Union's General Data Protection Regulation (GDPR), whereas its 2019 regulation on the free flow of nonpersonal data should be important for firms that rely on machine data.<sup>24</sup> Kenya, Mexico, Nigeria, the Philippines, and Thailand are some other jurisdictions that have also put in place rights to portability, although—as with the GDPR—these regimes have yet to be tested.

Measures to mandate interoperability go beyond portability rights; they also aim to ease the sharing of data from a technical perspective. Ease is important where continual access to data is required.<sup>25</sup> An example is the implementation of “open banking” regimes whereby financial service providers are mandated to share data on user accounts to third parties through open application programming interfaces (APIs). Banking data are well suited to data sharing initiatives because they are relatively homogeneous and standardized, and the concept of open banking is now well established in Europe.

The United Kingdom's open banking initiative seems to have been particularly successful in spurring market entry and innovation, with 134 third-party providers currently registered and supplying services.<sup>26</sup> At least nine other jurisdictions also have emerging open banking regimes in place.<sup>27</sup> In Brazil, the central bank published a draft regulation on open banking in 2019. In India, although there is no mandatory open banking regime, policy measures to encourage data sharing have been introduced. These include safeguards such as the creation of “account aggregators” to ensure that individuals consent to use of their financial data and that data are not used beyond the agreed terms.<sup>28</sup> Beyond the realm of open banking, in Mexico several revisions of the Fintech Law have been adopted to enable data sharing, including facilitation of access to user data and regulation of the fees banks can charge for sharing user data.<sup>29</sup>

Voluntary industry data access schemes are also operating around the world. The Open Ag Data

Alliance, an industrywide project, aims to standardize the way in which farmers' data are shared with larger firms (such as those developing precision agriculture models).<sup>30</sup> In Kenya, the One Million Farmer Platform connects agtech players across 14 value chains to take advantage of large-scale shared data collection and digitized farmer profiles.<sup>31</sup> In Nigeria, financial industry players have voluntarily formed an alliance to develop open banking APIs.<sup>32</sup> The Solid project, launched in 2018, aims to provide open-source software that allows users to fully own their data and allows developers to create decentralized apps that run on that data. Meanwhile, Apple, Facebook, Microsoft, and Twitter are developing the Data Transfer Project, an open-source initiative to enable portability of some types of user data among participating platforms, although its impact on competition has yet to be seen.

When jurisdictions seek to impose mandatory data sharing regulations, they must design such schemes carefully to avoid distortive effects such as stifling incentives to innovate, facilitating collusion through excessive transparency of firms' strategic variables such as prices, and unduly raising the cost of doing business. The immediate benefits of mandating data sharing need to be balanced with the possibility that it would reduce incentives for those sharing data to invest in data collection and for competitors receiving data to build their own collection capacity.

To safeguard incentives for innovation, it may be useful to examine whether the data to be shared have the features of an “essential facility” (akin to the “essential facilities doctrine” framework used to regulate sharing of infrastructure). Such an examination would require careful economic analysis of whether the data in question are an essential input that competitors cannot replicate or substitute. Because data, unlike physical infrastructure, are nonrivalrous, there should in theory be a stronger argument in favor of granting access requirements. Nonetheless, design of such requirements would still have to carefully consider future market dynamics, including incentives for innovation; whether the remedy should be timebound and limited to markets where a competition issue has been identified; and whether different firms should have different obligations according to their market position. Regulators should also ensure that shared data are kept secure, and that, when personal data are involved, the exchange is carried out in compliance with data protection laws.

*Regulating the structure and behavior of data-driven platform firms.* Calls to regulate large data-driven firms



ex ante are gaining ground and merit consideration. Moves in this direction must be targeted at remedying specific competition bottlenecks and should be grounded in sound economic analysis (for example, remedies around data sharing should be based on a finding that a lack of data is indeed prohibiting firms from competing). The possibility of regulating large platforms as essential facilities (akin to telecom regulation) may be promising. However, it should be conditional on a platform or its data constituting a bottleneck or an unavoidable trading partner for other firms, and on the data in question being an essential, nonreplicable input to potential competitors.

Another area of discussion has been the possibility of breaking up large data-driven platform firms.<sup>33</sup> Because of the highly interventionist nature of this solution, it should be considered only when the firm in question holds market power believed to be entrenched and durable. It is also important to consider that the network effects that initially led to the firm's dominance may persist in each of the individual market segments after the firm is broken up. There is no guarantee that simply separating a firm's segments will overcome these network effects and allow expansion by others.

Nonetheless, structural solutions may be relevant to solve some issues typically seen with platform firms. Preventing firms from operating in multiple markets would mitigate the risk of firms leveraging economies of scope from data insights across multiple markets. It would also address the risk of vertically integrated firms providing preferences for their own products. All this needs to be weighed against the benefits consumers may experience from economies of scale and scope that arise when service providers participate in multiple markets.

Other ex ante regulations could target the “quality” dimensions of services provided by data-driven firms—particularly the protections afforded to individuals on the collection and use of their data (if not already adequately covered by the data protection regime). They could also look at the terms applied to the (often small) suppliers that participate in these platforms. In this vein, regulators could consider providing smaller firms with access to platforms or prominence in their rankings on a fair, consistent, and transparent basis. For example, the European Union enacted a platform-to-business regulation in 2019 that requires a platform to make its terms and conditions easily available to businesses that trade on the platform, including disclosure of conditions under which either party may access data generated

by or provided to the platform, as well as explanations of the ranking algorithms employed.<sup>34</sup>

*Leveraging offline regulation.* For some data-driven businesses, the key to being able to enter and compete does not lie so much in data remedies as in other aspects of regulation, including “offline” regulation. In some countries, new regulations are being imposed to protect traditional or incumbent players. In Morocco and Tunisia, state-owned enterprises are not subject to the same data protection obligations that are binding for the private sector.<sup>35</sup> New e-commerce rules in India that prohibit foreign firms from selling their own products on their platforms are intended to protect domestic retailers against risks of exclusion (reflecting the line of regulatory reasoning on preventing self-preferencing noted earlier). However, the fact that these regulations target only foreign firms and are not predicated on the firm holding a dominant position may mean that such regulations could be creating an unlevel playing field beyond what is needed to prevent adverse outcomes.

Regulations that ban entry of data-driven business models are an obvious example of offline regulatory restrictions. Spurred by protests from incumbent players, Uber was blocked from entering a range of countries, including Bulgaria (for a time), Italy, and Spain.<sup>36</sup> In response, the competition authorities of at least 24 countries have advocated against disproportionate restrictions for transport platforms, including those in Brazil, Colombia, Indonesia, Kenya, Mexico, and Peru. In China, the government helped to resolve uncertainty by legalizing ridesharing apps and establishing procedures to formally license drivers.<sup>37</sup> In Mexico, the competition authority recommended that local governments recognize transportation services provided by platforms, leading to new regulations allowing them to operate fully in Mexico City and other localities.<sup>38</sup>

Still other regulations can raise the costs of data-driven firms to compete. For example, ridesharing regulations in Jordan specify that fares charged by ridesharing companies must be 15 percent higher than those of taxis, and discounts may not go below the tariff stipulated for taxis.<sup>39</sup> In Egypt, drivers and vehicles working with ridesharing platforms are required to pay 25 percent higher registration fees and taxes than traditional taxis.<sup>40</sup>

Fintech is another sector in which the conditions favoring incumbents are gradually being dismantled. Some regulations have focused on unstructured supplementary service data (USSD) channels, which establish a real-time session between a mobile handset



and an application to generate a financial service and are considered an “essential facility” for many fintech providers. Regulators in Bangladesh, Colombia, Kenya, and Peru have promulgated regulations to open up third-party access to mobile network operators’ USSD channels after some providers strategically restricted access to those channels to dampen competition from potential rivals.<sup>41</sup> Banks can also unfairly exclude non-bank rivals from payment settlement infrastructure, which is often owned or controlled by incumbent bank consortiums. In response to this issue, the People’s Bank of China created a separate clearinghouse for nonbank payment providers in 2018, in part to create a more level playing field.

### **Recommended reforms of competition policy**

The recommendations for competition policy that follow are grouped according to a maturity model designed to reflect a country’s stage in the development process.

#### ***Establishing fundamentals***

In low-income countries with limited institutional capacity, a pragmatic approach to competition policy focusing on the essentials is warranted. It should build on related instruments that may already be in place, while developing institutional capacity for the future.

*Create a level playing field for data-driven businesses.* The first priority is to ensure that traditional regulations and policies do not hinder entry by data-driven firms or create an unlevel playing field between firms. This could include harmonizing standards and requirements for entry and operation of data-driven firms with standards and requirements for traditional firms in competing markets (for example, ride-hailing platforms and regular taxis).

*Build on existing sectoral regulations.* In regulated sectors with institutional capacity—such as telecom, energy, and banking—more targeted regulatory approaches to encouraging data access could be considered, building on international experience such as with open banking.

*Develop capacity for dealing with data-driven businesses.* Governments should also invest in building an understanding of data-driven business models and data ecosystems in selected agencies, such as sector regulators, and by industry-related policy makers. As part of sectoral initiatives or industrial policies, policy makers could consult with the private sector—particularly start-ups—to understand data needs and data

bottlenecks for firms and broker industry-led solutions for data sharing.

#### ***Accelerating data flows***

In addition to the preceding recommendations, countries with more capable institutions could encourage or mandate data sharing for markets or circumstances where it would be pro-competitive on balance and in compliance with data protection policies for personal data.

*Develop guidelines for portability and interoperability.* Where portability is possible, consumers should be trained to exercise these rights. Where data sharing may be mandated under existing legal tools (such as the competition law, market regulations, or license terms), policy makers could define an essential facilities-style framework and build the institutional skills needed to assess when data sharing might be appropriate. Policy makers could also work with international bodies to promote harmonization of concepts and standards for interoperability and data sharing between countries.

*Apply ex ante regulations for data-driven markets.* Governments may consider establishing an economy-wide ex ante regulatory regime governing data-driven markets in the longer term. Any regulatory remedies imposed should be based on a case-by-case analysis. They also should be carefully designed to avoid raising firm costs beyond the level necessary to remedy the competition issue; stifling incentives for firms to invest or innovate by mandating them to share proprietary data with competitors; or providing excessive transparency in firms’ strategic variables such as prices, thereby facilitating collusion. These remedies should be limited to data that have been identified as a bottleneck to competition and should ideally be timebound.

*Carefully assess the merits of ex ante regulation of platforms case by case.* Overall, calls to regulate ex ante large data-driven platforms—or the use and sharing of data by these firms—may have merit but require careful targeting where a firm or its data pose a bottleneck to competition. Regulators may also find it helpful to provide smaller firms with access to platforms, or prominence within their display rankings, on a fair, consistent, and transparent basis.

*Consider the impacts of competition when choosing between data protection regimes.* Subject to ensuring the data rights of individuals over their personal data, policy makers could aim to design data protection policies in a way that minimizes potential distortions to competition as much as possible. If no generally

applicable data protection regime is in place, these considerations could be embedded in sectoral approaches.

*Create markets for data intermediaries.* In cases in which personal data may be shared, regulators should ensure that sharing is carried out in compliance with data protection regulations. In the longer term, it may also be valuable to facilitate markets for personal information management systems so that intermediaries can streamline steps to obtain and monitor consent (see chapter 6). Such streamlining would be particularly useful when continual access to data is required. Regulators should ensure that all sharing complies with data protection regulations.

*Establish data repositories.* In some sectors, there may be merit in considering data repositories established by the government or through public-private partnerships. For example, in agriculture centrally curated data on farmers' identities or profiles, locations, and other parameters could aid the entry of players in agtech markets.

### **Optimizing the system**

In addition to the preceding recommendations, in jurisdictions with a functioning antitrust enforcement regime, the following actions would be valuable. Several steps could be taken in the short term to better tailor existing antitrust regimes to data-driven markets.

*Adapt the framework for reviewing antitrust cases involving data-driven firms.* A good first step would be to reevaluate merger review frameworks to account for the characteristics of data-driven businesses. Such a review would include updating thresholds for notification of planned merger activity to enable authorities to review potentially anticompetitive mergers in the digital economy. Competition authorities could also publish guidelines to clarify their assessment approach for both mergers and anticompetitive practices cases, particularly when defining markets and assessing dominance, efficiencies, and theories of harm.

*Publish guidelines for regulatory remedies.* Guidelines for designing regulatory remedies for data-driven markets would also be valuable. In the shorter term, authorities could review the fines imposed on firms to increase their deterrent effect. Over time, competition authorities may work toward lessening their reliance on fines and move toward remedies aimed at restoring competition. Where remedies are imposed, sufficient resources should be available to cover the associated regulatory burden, as well as monitor and

build evidence on the efficacy of remedies to feed back into their design.

*Develop capacity in antitrust agencies.* It is critical to build the capacity of antitrust authorities to understand the economics of data-driven markets. Such economic analysis should be tailored to the context of specific countries. To develop capacity and greater expertise in these areas, larger authorities may consider moving toward specialized staff or dedicated units in the longer term. Newer authorities with less capacity can leverage the analysis of competition issues in data-driven markets in developed jurisdictions, adapting it to their specific context.

*Harness data tools for antitrust regulation.* Better-resourced authorities operating in more advanced online economies may consider building the capacity to web scrape data on online markets and e-procurement bids to help screen for collusion and other competition issues.

*Encourage domestic cooperation among regulators.* Governments should encourage cooperation between competition authorities and data protection authorities, as well as other relevant sector regulators, where these institutions exist.

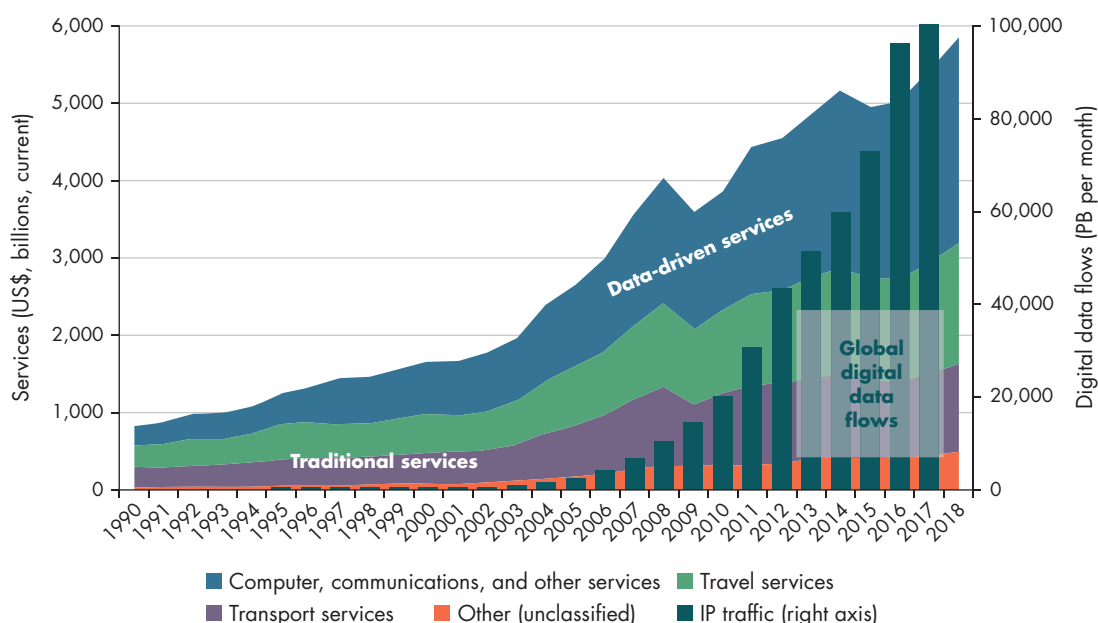
*Promote international cooperation on antitrust.* Governments could also promote international cooperation and exchange of knowledge between antitrust authorities in data-driven markets, including harmonization of the approaches to antitrust regulation and the digital economy.

## **Trade policy**

Cross-border data flows are becoming one of the hallmarks of international trade in the twenty-first century. Although trade in goods has remained relatively stable over the last decade, the global trade in data-driven services has grown exponentially. Global data flows multiplied more than twentyfold between 2007 and 2017 (figure 7.4). They are expected to nearly quadruple from 2017 levels by 2022.<sup>42</sup> Such data flows were valued at US\$7.8 trillion in 2014.<sup>43</sup> By contrast, global merchandise exports fluctuated at around US\$20 trillion between 2007 and 2019.

By facilitating intangible transactions, new technologies have expanded global trade in services from its traditional focus on transport and travel services to modern, data-driven services such as telecommunications, finance, and a myriad of other business and professional activities. Trade in all kinds of services has grown sixfold over the past two decades, doubling its share of the global gross

**Figure 7.4** Since 1990, the global trade in data-driven services has grown exponentially and now constitutes half of trade in services



Source: WDR team calculations, based on World Bank, WITS (World Integrated Trade Solution) database, <http://wits.worldbank.org/WITS/>. Data at [http://bit.do/WDR2021-Fig-7\\_4](http://bit.do/WDR2021-Fig-7_4).

Note: IP = Internet Protocol; PB = petabyte.

domestic product (GDP). Data-driven services have increased from about one-quarter to almost half of total service exports (figure 7.4).

### Regulating data flows for digital trade

Digital trade—and in particular the regulation of cross-border data flows—has risen rapidly on the global governance agenda. Accordingly, it has been taken up in a variety of multilateral, regional, and bilateral forums—notably, the Group of Twenty (G-20) Osaka principles on “Data Free Flow with Trust”<sup>44</sup> and the World Trade Organization’s Joint Statement on Electronic Commerce.<sup>45</sup> In light of these developments, countries should carefully design regulatory frameworks for cross-border data transfers that enable trade in digital goods and services while adequately addressing data protection and security concerns. The wide range of approaches across the globe highlights the various policy priorities as well as the perceptions of opportunities and risks.

Regulation of data flows, especially of personal data, lies at the heart of ongoing discussions of international trade governance. Domestic data regulation can either enable or hinder cross-border digital trade. A strong regulatory framework for privacy, security, and consumer protection is critical to supporting digital transactions.<sup>46</sup> At the same time, burdensome

regulations on the cross-border transfer and use of data can impose substantial costs on businesses, especially micro, small, and medium enterprises (MSMEs), deterring international exchanges. More than 40 percent of US firms surveyed by the US International Trade Commission (USITC) consider data localization requirements and market access regulations to be obstacles to trade, particularly larger firms and those in the digital communications, content, and retail services sectors.<sup>47</sup> Data localization means that at least one copy of the data is stored locally or the data are kept in domestic servers during processing.

Restrictions on global data flows can also burden the production of goods and the productivity of local companies using digital technologies, particularly in the context of global value chains.<sup>48</sup> Swedish manufacturing firms recently reported that data localization requirements and restrictions on cross-border data flows, including for outward transfers, adversely affect the setup and operation of their global production networks.<sup>49</sup>

The challenge for policy makers is promoting the sharing and transfer of data in a manner that supports the economic benefits of digital trade, while ensuring that sensitive information remains secure and the relevant regulations on personal data protection are respected. Data governance regimes for cross-border

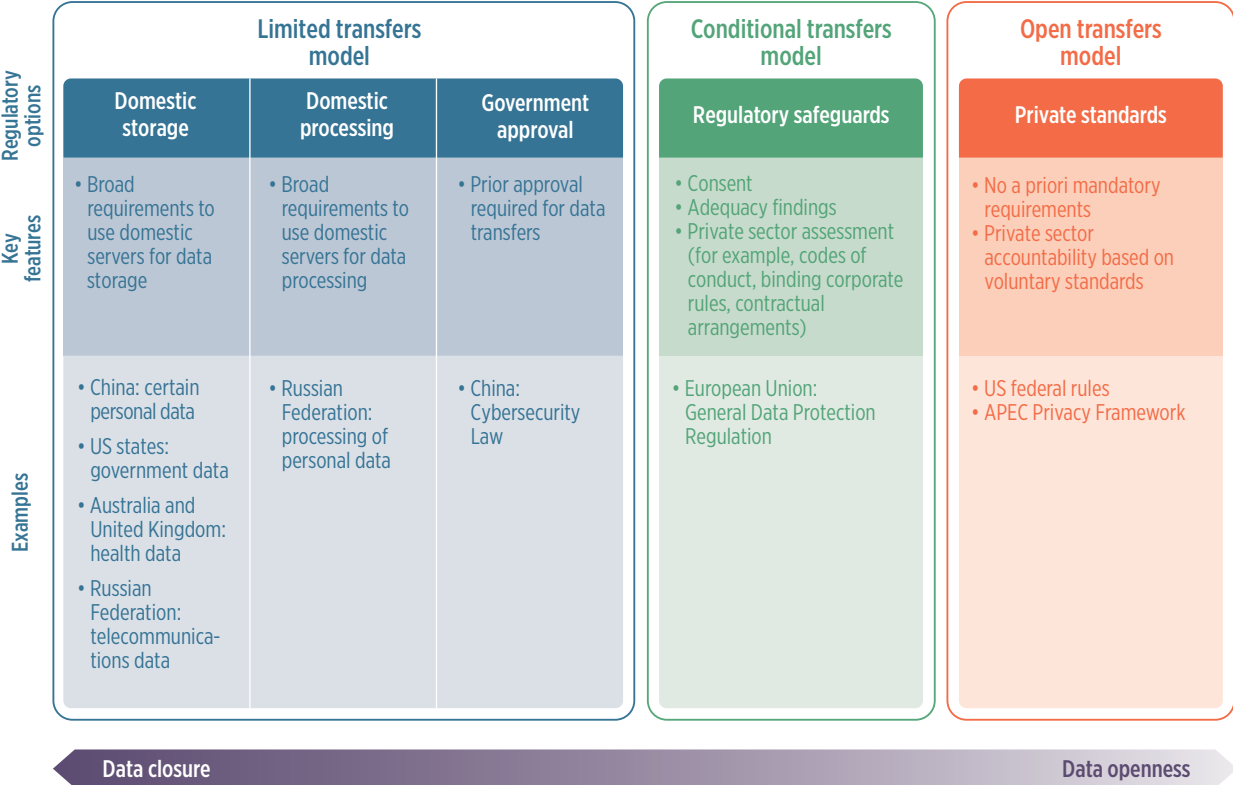
data flows are seldom fully open or closed, but they can be placed on a spectrum of three broad models (figure 7.5). These range from an open transfers approach allowing free movement of data based on private standards, to a conditional transfers approach based on conformity with established regulatory safeguards, to a limited transfers approach entailing government approval for cross-border movements as well as compliance with localization requirements for local storage or processing of data. In addition, the way in which the rules are implemented may make any one of these stylized models more or less open than the letter of the regulation may suggest.

*“Open transfers” model.* This model is defined by the general absence of government restrictions on cross-border transfers of personal data and reliance on voluntary private sector standards and practices, as opposed to statutory requirements set out in laws or regulations. The government’s role is exercising ex post accountability by launching enforcement actions, such as fines, for misleading data subjects in the treatment of their data or for failing to abide by

the voluntary standards the firm itself has adopted. This approach ensures the greatest flexibility in the movement of data because it does not impose any mandatory requirements or conditions for data transfers. The Cross-Border Privacy Rules adopted by the Asia-Pacific Economic Cooperation (APEC) provide for self-certification by organizations or audit by third-party accountability agents rather than requiring the prior approval of a data protection authority. A general concern about approaches based on voluntary private norms without overarching regulatory guidance from government or international agreements is the risk of proliferation of standards across firms and jurisdictions, raising costs for data sharing as well as regulatory oversight, without guaranteeing any minimum standard for personal data protection.

The “open transfers” model adopted by the United States features no general comprehensive framework for data protection at the national level, and it provides data subjects with only limited statutory rights. It relies instead on the US Federal Trade Commission to monitor the compliance of private companies with

**Figure 7.5** Three distinct approaches to handling cross-border data flows



Sources: WDR 2021 team, based on Casalini and López González (2019); Cory (2017).

Note: APEC = Asia-Pacific Economic Cooperation.



their own data protection practices. Under this overarching framework, stricter data protection rules can nonetheless be incorporated in sectoral regulations, as indeed happens in highly regulated industries such as finance and health, or in a particular subnational jurisdiction, such as the state of California.<sup>50</sup>

*“Conditional transfers” model.* This model seeks to strike a balance between imperatives to protect data and the need for openness of data transfers. It sets out a series of mandatory regulatory safeguards that, once met, allow for the free flow of cross-border data. Such safeguards can restrict data sharing to jurisdictions that meet certain adequacy standards for data protection or to firms that have adopted mandatory data protection protocols, such as binding corporate rules or contractual terms.

The European Union’s 1995 Data Protection Directive, and subsequent General Data Protection Regulation, pioneered this kind of model. A similar approach has since been adopted by many countries, including Argentina, Colombia, Estonia, Malaysia, the Republic of Korea, Senegal, and South Africa. The European Union limits the transfer of personal data to only those jurisdictions that have enacted “adequate” data protection rules in line with EU standards, which must be confirmed in advance by a national regulatory authority. This process can take a long time, creating bottlenecks in cross-border trade.<sup>51</sup> Alternatively, firms or institutions may be bound to comply with such standards through contractual clauses or binding corporate policies, including self-certification schemes such as the EU-US Privacy Shield.<sup>52</sup>

*“Limited transfers” model.* A more restrictive approach to cross-border data flows entails explicit regulatory approval for international data transfers and may sometimes also require data localization. Under this model, governments apply stringent regulatory requirements over personal data, including government access to data to protect national security and public order. Although such regulatory approvals do not formally preclude cross-border data flows, much depends on how a system of this kind is implemented. A broad strict approval regime that conditions data transfers on prior regulatory approval is likely to greatly limit cross-border data sharing and heavily restrict digital trade flows, akin to formal localization requirements.

As noted, data localization entails storing at least one copy of the data locally or keeping the data in domestic servers during processing. Mandatory storage entails placing the servers where the data are stored within the jurisdiction, and processing requirements obligate use of local entities. Mandatory

localization can be even more stringent by requiring that both the main servers and the backup (or “recovery”) servers be located within the jurisdiction. Localization requirements may technically allow for cross-border transfers as long as the data are stored or processed or backed up in the original jurisdiction, but at the risk of adding significant costs to management of the data, thereby disrupting cross-border businesses models.<sup>53</sup>

Countries fully adopting this model have enacted broad mandatory localization requirements.<sup>54</sup> Yet because of the burdensome nature of these measures, mandatory localization requirements are more commonly limited to certain specific and sensitive types of data, such as those related to finance and health care.<sup>55</sup> Australia, for example, prohibits the transfer of health data overseas in certain circumstances.<sup>56</sup> Korea restricts transfers related to financial data.

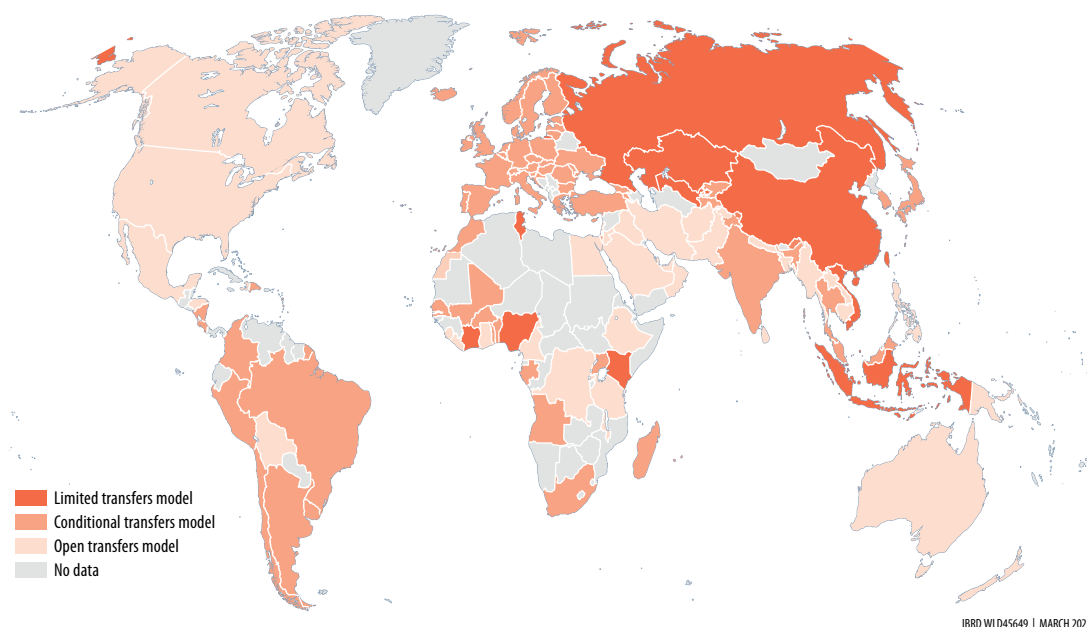
In China, mandatory localization requirements affect certain types of data considered “critical information infrastructure,” including financial information, personal data, health and medical data, mapping services, online publishing, and telecom. Operators of such critical information infrastructure are required to store certain personal and business information in China,<sup>57</sup> and foreign companies may have to apply for permission before transferring data out of China. In Russia, the Personal Data Law mandates that all personal data about Russian citizens must be stored and processed using databases physically located in Russia, while allowing for cross-border transfer once this requirement is met.<sup>58</sup> In Nigeria, government data must be hosted within the country’s borders.<sup>59</sup> In Vietnam, private sector internet service providers must retain a copy of their data in Vietnam for possible government inspection.<sup>60</sup>

Government control over data flows is sometimes confused and conflated with the broader concept of *data sovereignty*. From a narrow perspective, this can mean merely that data in a country are subject to the laws of that country. Increasingly, however, this concept is understood to refer to efforts by a country to exert national control over data as well as digital infrastructure and service providers in response to the perceived imbalances in the global data economy.

A review of the distribution of these regulatory models globally suggests growing adoption of the conditional transfers model for cross-border data flows (map 7.1). Of the 116 countries surveyed for this Report worldwide (including all EU members individually), about 57 percent have adopted this approach—often reflecting the EU’s data protection framework.<sup>61</sup> Thirty-four percent feature an open



**Map 7.1 Uptake of regulatory models to cross-border data flows**



IBRD WLD45649 | MARCH 2021

Source: WDR 2021 team, based on World Bank, Global Data Regulation Survey, <https://microdata.worldbank.org/index.php/catalog/3866>. Data at [http://bit.do/WDR2021-Map-7\\_1](http://bit.do/WDR2021-Map-7_1).

transfers model, many of them simply because they have not yet adopted any data protection regime. More than half of low-income countries do not have any restrictions on cross-border transfers of personal data. The remaining 9 percent operate regulatory arrangements similar to the limited transfers model, such as China and Russia, as well as several large middle-income countries, including Indonesia, Nigeria, and Vietnam.<sup>62</sup>

### Understanding the economic effects of data protection regimes

The treatment of cross-border flows of personal data stands out as a core difference in the data protection regimes of countries, reflecting the differences in importance given to various wider public policy goals (table 7.1).<sup>63</sup> As data flows become an increasingly important component of international trade, the

choice of one data protection regime over another raises significant economic considerations and poses challenges in striking the right balance between promoting economic development and providing adequate data safeguards. The open transfers model minimizes the regulatory burden on service providers at both ends of a data transfer, maximizing the freedom businesses can enjoy in their data partnerships as well as their own business models, but providing few safeguards to boost trust in such data transfers. The limited transfers model is directed at the security of the domestic digital market, restricting its links with foreign suppliers and consumers. The conditional transfers model is a halfway house of sorts, allowing international transfers while requiring additional guarantees for the protection of personal data in destination markets, thereby adding somewhat to trading costs.

**Table 7.1 Policy bases for regulating cross-border personal data**

Model	Policy goal	Regulatory costs	Digital trade flows
Limited transfers	Cybersecurity and other security concerns	Higher	Limited by transfer approval or data localization requirements
Conditional transfers	Protection of personal data	Medium	Subject to regulatory conditions
Open transfers	Business freedom	Lower	Largely open

Source: WDR 2021 team.





Stronger restrictions on cross-border data flows, such as those found in the limited transfers model, can be particularly detrimental to international trade. Because trade in services relies on the global movement of data, including personal data, regulations that require the maintenance or processing of data within a country or a particular region can be a costly impediment. Restrictive data policies—especially mandatory localization requirements—reduce imports of data-intensive services in the countries imposing them, which, in turn, limits cross-border digital trade flows.<sup>64</sup> Depending on how the restrictions are cast, mandatory localization requirements can result in discrimination against firms without a physical presence in a country or even in abuses of human rights or the rule of law.<sup>65</sup> The burden associated with mandatory localization requirements is greater for small and developing economies because the cost of the infrastructure investment weighs more heavily. At the same time, the opportunity cost of restricting trade in services may be higher in countries that do not have a large domestic market of their own. By contrast, in larger countries with significant domestic markets, localization policies may be adopted to protect domestic infant industries from globally dominant competitors.

Although limitations on cross-border data flows are often justified on several policy grounds—notably, data protection, national security, economic development, or law enforcement—their effectiveness on each of these counts has been debated.<sup>66</sup>

National security is often invoked to justify restricting data flows. Under its Cybersecurity Law, China requires a security assessment for data transfers related to critical infrastructure. In the United States, domestic storage requirements are imposed for cloud computing services procured by the Department of Defense. Yet security experts argue that data localization may render information less, not more, secure by concentrating all such data for the country in one place.<sup>67</sup>

In developing countries, policy makers frequently cite economic considerations—technology transfers and job creation—as a reason for introducing data localization requirements. Nigeria's guidelines for information and communication technology (ICT) companies require them to host all consumer and government data locally within the country to fight a “negative trade balance” in the ICT sector.<sup>68</sup> Yet data storage requirements per se offer little in terms of jobs or innovation. Data centers do not rely on large numbers of staff to operate, and they can even be monitored and maintained remotely, whereas data

storage requirements can hamper the digital trade and reduce overall competitiveness.

Some policy makers worry that access to data for law enforcement purposes may be hampered when the data are not stored domestically. Although tech firms largely cooperate with courts everywhere in their requests for data, there have indeed been cases that confirm this concern. They highlight the need for greater international cooperation for sharing digital data in the context of law enforcement, possibly updating and elaborating on the existing network of mutual legal assistance treaties (see chapter 6). In addition, governments may require firms offering online services to comply with court orders even if not established locally, as pioneered in the US CLOUD Act.<sup>69</sup>

Low- and middle-income countries have much to lose from data restrictions. Flexible regimes for cross-border data flows allow businesses from these countries not only to benefit from the services offered on the global market, but also to provide data-intensive services in return. For example, the Bangladeshi firm Augmedix offers remote assistance to medical doctors in the United States. The doctors wear smart glasses that allow their Bangladesh-based assistants to “witness” patient consultations and create associated medical records. This two-way exchange of data, and the high value-added services that they entail, is possible only because both countries—the United States and Bangladesh—allow for such sensitive data to move across borders. Restrictions on cross-border data flows are especially damaging to small economies that are likely to lack the domestic market size to justify the costs of developing the necessary determinants for a modern digital market, including skills and infrastructure such as data centers.<sup>70</sup>

Data rules incorporating strong data protection, complemented by a flexible regime for cross-border data flows, can help boost digital trade. New analysis conducted for this Report reveals how trade flows of digital services (such as telecommunications, computer, and information services) in 116 countries vary based on the data policy models adopted—limited transfers, conditional transfers, and open transfers—for both cross-border and associated domestic data regimes.<sup>71</sup> When it comes to cross-border regulations, the research finds that country pairs that adopt an open transfers model achieve higher volumes of trade in digital services than those operating under the conditional transfers or limited transfers models. However, domestic data regulations are also found to have a significant effect on trade in digital services. In this case, having a strong domestic data protection regime

for personal data is positively associated with trade flows in digital services, compared with regimes that exercise little government regulation over personal data protection and those that apply tight government controls on domestic use of personal data.<sup>72</sup>

Although personal data protection regimes can help digital trade, they can also be costly, both for the government agencies tasked with their enforcement and for private operators that must comply with those regulations. For example, monitoring and enforcing the US Health Insurance Portability and Accountability Act (HIPAA) regulation that governs personal data sharing, among other things, require an annual budget of more than US\$50 million for an agency employing roughly 150 employees. In a survey of relatively large firms, compliance with the EU's GDPR has been estimated to cost from US\$250,000 to almost US\$2 million a year.<sup>73</sup> Policy makers should avoid replicating foreign regulations that may prove costly for the domestic public administration or private sector. Instead, they should strive to protect data using solutions tailored to their own context.

Regulatory concerns about cross-border flows of personal data do not carry over to nonpersonal data (see chapter 6). Data that cannot be linked to an identified or identifiable person are an essential and significant component of international trade and are expected to grow dramatically with the advent of data from the Internet of Things. Free flows should be the general guiding principle for trade in nonpersonal data, subject to adequate cybersecurity safeguards. Although national security issues may arise in some cases—such as data related to national defense or critical infrastructure—the bulk of nonpersonal information may be treated with a higher degree of deference to data producers because it more rarely relates to the public interest. For example, the EU Non-Personal Data Regulation (NPDR) strengthens the principle of free circulation of nonpersonal data by banning data localization among EU members, unless such restrictions are justified on grounds of national security.<sup>74</sup>

### **Incorporating data regulation in international trade agreements**

Trade agreements, which have been at the forefront of international data governance, have incorporated the first binding international rules on data flows. The General Agreement on Trade in Services (GATS), concluded in 1995 under the framework of the World Trade Organization (WTO), applies to 164 countries, including 36 least-developed countries.<sup>75</sup> GATS governs any type of government measure affecting trade in services, including measures related to cross-

border data transfers. GATS does not prohibit restrictions on cross-border data flows per se. However, subject to the sectoral commitments adopted by each WTO member, mandatory localization and other limitations on cross-border data flows could be considered violations of the agreement's "non-discrimination" disciplines.<sup>76</sup> In addition to rules on cross-border services, WTO members have provisionally agreed not to impose customs duties on digital products (see section on tax policy at the end of this chapter).

Countries have built on such disciplines in a growing number of bilateral and regional preferential trade agreements (PTAs). At latest count, at least 89 countries are members of trade agreements that feature either a stand-alone chapter or specific provisions covering aspects of digital trade.<sup>77</sup>

Some of the latest generation of PTAs feature substantial disciplines supporting cross-border data flows. This is notably the case for the 2018 Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) among 11 countries bordering on the Pacific Ocean.<sup>78</sup> It seeks to guarantee cross-border data flows, prohibiting mandatory localization measures as a precondition for conducting business in the territories of the parties.<sup>79</sup>

Agreements focusing exclusively on digital trade are a new trend in regulation of data flows. The Digital Trade Agreement (DTA)<sup>80</sup> between Japan and the United States, concluded in 2019, parallels the United States–Mexico–Canada Agreement (USMCA)<sup>81</sup> in its rules and obligations. Among its features, the DTA includes prohibition of customs duties on digital products, prohibition of data localization measures, nondiscriminatory treatment of digital products, and electronic authentication and signatures, as well as protection of consumers' and businesses' confidential information. Chile, New Zealand, and Singapore signed (electronically) their Digital Economy Partnership Agreement (DEPA) in June 2020, featuring rules similar to those of the CPTPP (table 7.2).

Agreements at the regional level have also become increasingly popular. The ASEAN (Association of Southeast Asian Nations) Agreement on Electronic Commerce, adopted in 2019, is the only digital trade agreement to count low-income countries among its signatories. It addresses matters similar to those addressed by the CPTPP, though mostly in nonbinding language. Other regional groups have adopted instruments that, though not focused on trade, are meant to facilitate data flows. In 2014 the African Union adopted the Convention on Cyber Security and Personal Data Protection (Malabo Convention),

**Table 7.2** Key provisions on digital trade in recent trade agreements

Provision	US–Singapore FTA (2004)	Canada–EU CETA (2014)	ChAFTA (2015)	CPTPP (2018)	ASEAN (2019)	USMCA (2020)	DEPA (2020)	RCEP (2020)
Nondiscrimination of digital products								
E-documents and e-signatures								
Paperless trading								
Online consumer protection								
Privacy protection								
Cybersecurity								
Unrestricted cross-border data flows								
Prohibition of data localization								
Customs duties								

Source: WDR 2021 team.

Note: ■ indicates a binding provision; ■ indicates a soft law provision; empty cell indicates no provision. ASEAN = Association of Southeast Asian Nations; CETA = Comprehensive Economic and Trade Agreement; ChAFTA = China–Australia Free Trade Agreement; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; DEPA = Digital Economy Partnership Agreement; EU = European Union; FTA = Free Trade Agreement; RCEP = Regional Comprehensive Economic Partnership; US = United States; USMCA = United States–Mexico–Canada Agreement.

an international treaty seeking to protect data across Africa, but it has yet to enter into force.<sup>82</sup> APEC promulgated the APEC Privacy Framework for the Asia-Pacific region,<sup>83</sup> directed at facilitating information flows within the APEC community, while ensuring basic principles of data protection and providing ample flexibility to its member economies on the regulatory approach they follow. The recent Regional Comprehensive Economic Partnership (RCEP) among 15 nations in the Asia-Pacific region features rules on cross-border data flows and against data localization requirements, subject to a broad exception for national security. Notwithstanding, these arrangements, with their disparate objectives and instrumentalities, betray a hodgepodge approach that could result in the emergence of regional data silos, each with its own set of rules.

Despite these somewhat exceptional initiatives, the future of global trade rules on data flows remains uncertain, particularly at the global level. Most trade agreements addressing cross-border data flows, including some recent ones, simply feature soft law provisions that lack enforcement power or are aimed at promoting regulatory cooperation on this issue (table 7.2).<sup>84</sup> Discussions on digital trade are under way among a group of 85 WTO members, which account for nearly 90 percent of digital trade under the Joint Statement on Electronic Commerce.<sup>85</sup>

Possible disciplines on cross-border data flows are among the most contentious issues, and it is still unclear whether standard provisions will emerge for worldwide use, or whether such provisions will remain a distinctive feature of selected agreements.<sup>86</sup> An ambitious proposal to establish a data governance framework under the aegis of the WTO was proposed by Japan during its presidency of the G-20 in 2019. Yet data rules continue to be debated in trade circles.

Low-income countries remain underrepresented in digital trade talks. Only one low-income country, Burkina Faso, has so far joined the Joint Statement discussions on rules for digital trade under the WTO, compared with 52 high-income countries. This uneven representation hampers the inclusiveness of the potential rules under discussion and risks leading to a one-size-fits-all approach on global rules driven by the more advanced players. Although no WTO rules may ultimately be imposed on members without their explicit approval, the lack of voice of low-income countries means that legitimate development concerns may be overlooked. These concerns include both the difficulty in applying rules that require heavy investment in regulatory institutions or are costly for MSMEs and the need for capacity building and technical assistance.

Trade negotiations have traditionally focused on removing restrictions to international trade, but

they are not suitable for addressing issues of regulatory convergence. Progress toward harmonization around the necessary regulatory safeguards for data rights, or common data standards and architectures that enable the exchange of information, could benefit from the more cooperative, and perhaps non-binding, approaches offered by other international instruments. Relevant examples are the modernized Convention 108 of the Council of Europe on data protection and the Budapest Convention on Cybercrime. Because these instruments lack the binding nature (Convention 108) or enforcement mechanisms (Cybercrime Convention) found in the WTO and in PTAs, they may offer a less demanding channel for countries to incorporate key principles on data governance. Model laws, such as those developed by the United Nations Commission on International Trade Law (UNCITRAL) on electronic signatures, can also offer softer approaches that encourage and facilitate regulatory harmonization.

### **Recommended reforms of digital trade policy**

The variety of policy recommendations arising from this discussion can be grouped according to a data maturity model designed to reflect a country's stage in the development process.

#### ***Establishing fundamentals***

*Develop a conducive regulatory framework for digital goods and services.* A modern regulatory framework for digital trade can provide essential guidance for remote transactions—such as electronic documents, electronic signatures, and electronic payments—and set out clear rules for digital businesses. It can also foster trust in digital markets by ensuring that users' data are safe and remain private and by providing consumer protections for online transactions.

*Strengthen the capacity of customs to tackle e-commerce flows.* Some specific facilitation measures can improve the efficiency of e-commerce transactions, such as the use of de minimis thresholds, pre-arrival processing, and online procedures for customs clearance. Similarly, having a simplified declarations regime for low-value shipments can help e-commerce vendors and small traders move goods faster.

#### ***Accelerating data flows***

*Ensure comprehensive protection of personal data, while providing for flexible cross-border data transfers.* A solid framework for data protection and individual rights promotes digital trade by boosting trust in digital markets, including across borders. These necessary

safeguards must also be supplemented with adequate enablers for data sharing, including across borders. Protection of personal data should facilitate cross-border data flows and allow free choice of storage location, while providing strong, clear-cut safeguards for data rights. Mandatory localization requirements should be reserved for exceptional circumstances and limited to specific, and narrow, types of data.

*Ensure the free flow of nonpersonal data.* For nonpersonal data, the principle of free movement should be the rule, subject to suitable, technically sound cybersecurity measures. Justification for any limited exceptions to this rule should be grounded in an objective assessment of risks to national security and other public interests.

*Establish mechanisms for government access to critical data domestically and internationally.* Facilitating safe and equitable cross-border data flows also entails incorporating mechanisms for government access to data, particularly on legitimate policy grounds such as law enforcement, regardless of where the data are physically stored. Similarly, mutual legal assistance treaties or similar instruments should be revamped for the digital world, fast-tracking procedures for cross-border data requests from foreign jurisdictions.

*Improve availability of data on data trade.* The collection of data on fast-growing cross-border services transactions, especially in digital services, is badly lacking and should be remedied. Strengthening data collection for cross-border services in the context of digital trade requires a multipronged approach at both the international and domestic levels. International cooperation should be expanded to set out collective guidelines for data collection on digital services transacted across borders, including shared definitions, standardized typologies, common deidentification and other data protection requirements, and harmonized reporting periods. In addition to strengthening traditional balance of payments data under the aegis of the International Monetary Fund (IMF), complementary approaches can be used that leverage big data from firms engaged in such trade.<sup>87</sup>

#### ***Optimizing the system***

*Advance global rules on digital trade.* Global rules should expand to provide a solid framework for cross-border data flows in both setting principles and promoting standards. Multilateral trade agreements, especially under the umbrella of the WTO, should be at the forefront of rules on digital trade. The current Joint Statement talks on digital trade is a valuable initiative that warrants serious attention from WTO members at all levels of development. Such negotiations should



be based on inclusive representation spanning all regions and income levels. Global trade rules should center on promoting cross-border data flows and free choice of data storage locations, grounded in adequate data protection standards. However, an inclusive agreement must also recognize that policy priorities for data flows may diverge across jurisdictions, and countries may also differ widely in their capability to implement data policies, as well as in their capacity to reap the economic benefits of data trade. To this end, multilateral negotiations should not be limited to replicating existing models or be bound by fictitious deadlines. Instead, they should strive to adopt an innovative, forward-looking framework for global data flows, affording adequate technical assistance and time to those least able to implement the agreed-on rules.

*Promote international standards for cross-border data sharing and digital transactions.* Cross-border data sharing requires cooperation on standard setting and regulatory harmonization that lies beyond the scope of trade agreements. International efforts to promote technical standards for data protection and cybersecurity are essential to ensure interoperability and must align with global trade rules on data flows. Further international instruments should promote common principles and rules for other important key aspects of digital trade, including regulation of online consumer protection, electronic payments, remote contracts, and intermediary liability rules (see chapter 6).

## Tax policy

As data and digitalization change the business landscape, they are creating opportunities and challenges for tax policy and administration.

Data-driven value chains, with their basis in intangible assets, are difficult for tax administrators to map and track, facilitating aggressive tax avoidance by companies. The rules determining taxation rights and profit allocation tend to emphasize the tangible features of businesses, including the location of people and assets. Data service providers, however, are often nonresident, and sometimes virtual—with little or no physical presence in the country in which consumption occurs or value is created.<sup>88</sup>

Although progress has been made in adapting indirect taxation policies for platform businesses, such as those on the value added tax (VAT), lagging administrative capabilities in low- and middle-income countries prevent these approaches from being fully implemented. As for direct taxation of corporate profits, international efforts to coordinate

direct tax policy responses are ongoing, and the outcomes are uncertain.

Addressing such shortfalls in taxation is important to ensure a level playing field for competition between digital and nondigital businesses, as well as foreign and domestic firms. And yet taxation in the data economy is a delicate matter. Poorly designed and misdirected taxes can blunt business growth and revenues, cutting off the potential development benefits of data-driven businesses.<sup>89</sup>

This section focuses on two key tax instruments: the value added tax (or similar consumption taxes) and the corporate income tax. The VAT holds the most immediate promise for mobilizing additional revenues for developing economies. Overall, analysis finds that the revenue potential from extending the VAT to the digital economy will likely be small at first in many of those economies, but that this potential will grow as digitalization expands.

### Capturing value added taxes from data-driven businesses

The VAT is a type of indirect taxation that tends to be particularly important for revenue mobilization in developing economies.<sup>90</sup> Fortunately, there is an international consensus on how to assess the VAT liability and capture tax revenues from data-driven platform businesses.

Taxing rights under a VAT or general sales tax (GST) tend to be allocated to the jurisdiction where the final consumption occurs.<sup>91</sup> More than 80 countries already require nonresident providers of digital services to register and collect the VAT.<sup>92</sup> The *International VAT/GST Guidelines* of the Organisation for Economic Co-operation and Development (OECD) have served as a blueprint for many of these reforms.<sup>93</sup>

Many low- and middle-income economies, however, have not made the administrative adaptations needed to capture the VAT from third-party sellers through platform businesses. To collect the tax, countries must require foreign suppliers to register and account for the tax due on sales to consumers in their territories. They also should introduce a process for simplified registration, filing, and payment, usually through an online interface.<sup>94</sup> To leverage the system, countries will have to invest in an enhanced business registry to cross-check whether transactions taking place are business to business (B2B) or business to consumer (B2C). More than US\$3.3 billion in taxes have been raised in the European Union through general application of these rules.<sup>95</sup> Australia adopted a similar approach in July 2017, requiring foreign suppliers that exceed a turnover threshold above

approximately US\$58,000 to account for the GST on digital and professional services. An online portal was set up to administer this tax.<sup>96</sup>

Effective compliance also requires investments—in particular, in the extensive use of third-party data combined with tax and customs data collected by the government. Third-party data sources might include internet service providers; banks and credit card companies; business registries; and tax treaty partners. To use these data effectively, countries should have technological solutions in place within the tax administration. Common tasks would include collecting, merging, and cross-checking data for compliance management purposes. These tasks should be automated, and safeguards should be in place to ensure data security and privacy.

Resource constraints and the needed upfront investments in information technology (IT) systems are sometimes to blame for the slow pace of adoption of these administrative reforms in low- and middle-income countries. But financing constraints are often less of a challenge than the organizational transformations that revenue authorities must undergo to enable successful implementation. These include streamlining business processes to enable seamless data sharing and appropriate staffing for IT management, analytics, and compliance.

To improve domestic revenue mobilization, tax administrations should collect more information from the digital platforms themselves. Governments could require such marketplaces to provide information about the income of both domestic and foreign vendors and rely on platforms to enforce tax compliance by, for example, verifying VAT registration. When combined with other third-party data, data on digital transactions can shed light on the VAT and wider tax compliance of numerous economic actors. A consistent approach to such reporting obligations across countries should help minimize compliance costs for platform businesses and facilitate cooperation. Model rules recently issued by OECD provide guidance for countries to follow in this area.<sup>97</sup> It recommends that platforms collect financial information on those entities with whom they transact, building on the existing experience of Australia, Denmark, France, and Spain with imposing such obligations.

Croatia's experience is an example of the importance of international cooperation among tax administrations. A compliance management campaign launched in 2018 drew on a comparison of domestic tax returns with third-country platform data on hotel and lodging accommodations sold on behalf of Croatian suppliers. Croatia accessed information

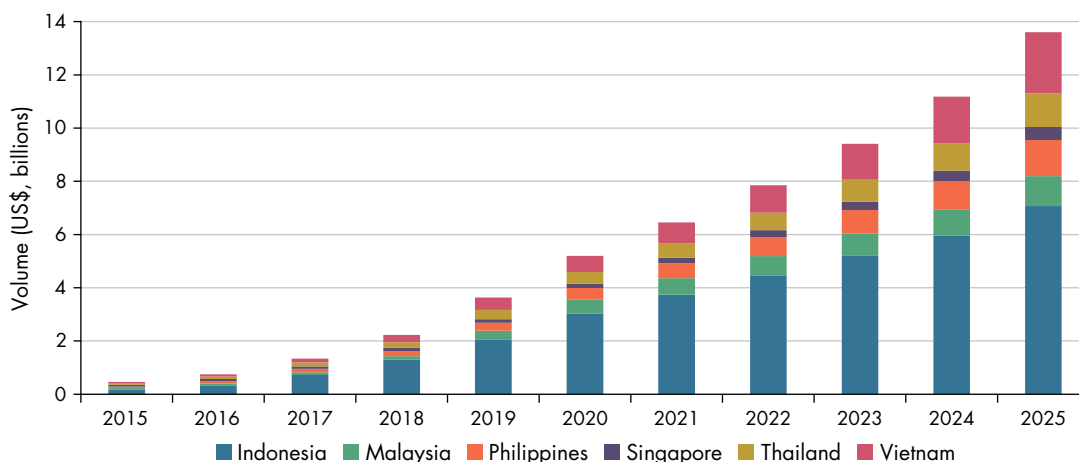
from countries where platforms are resident for tax purposes, following a multilateral effort encompassing seven other economies with strong tourism sectors. Almost 40 percent of Croatian vendors that operated through the platform were not registered for the VAT in Croatia. When the administration asked Croatian vendors to explain nonregistration or major discrepancies in the income obtained from platform transactions and the income declared for tax purposes, 85 percent changed their tax return “voluntarily.”<sup>98</sup>

For many developing countries, the revenue at stake from administrative failures to apply the current VAT rules is not insignificant even in the short term. Moreover, it could become substantial because of the rapid expansion of data-driven platforms, especially following the shift in demand toward platform businesses during the COVID-19 crisis. Evidence from East Asia indicates that the rapid growth of B2C e-commerce has resulted in equally significant growth in the tax potential of the sector, with the indirect tax potential growing some eightfold, rising from US\$0.46 billion in 2015 to US\$3.7 billion in 2019 (figure 7.6).<sup>99</sup> Other aspects of the digital economy, including online media and food delivery, have seen similar rapid growth in sales and indirect tax potential, whereas online travel has suffered because of the COVID-19 pandemic but is expected to recover over the medium term. In Indonesia, the gross VAT revenue potential of the B2C digital economy is estimated to be about 0.39 percent of GDP in 2021, and it is projected to grow to around 0.65 percent of GDP in 2025.<sup>100</sup> Assuming only half the amount of this estimated potential is collected (allowing for policy and administrative gaps),<sup>101</sup> this would still translate into gross VAT revenues of some US\$2.3 billion in 2021, increasing to US\$4.6 billion by 2025.<sup>102</sup>

The tax potential of the digital economy may also be constrained by antiquated tax rules. One example is the VAT registration threshold, which is designed to balance having a broad tax base to maximize revenue mobilization, while keeping administrative and compliance costs reasonable. In an increasingly digitalized world, the lower transaction costs associated with paperless tax collection may make it more feasible to include smaller actors. Tax rules on imports should be revised as well, particularly those for low-value shipments. The digital economy has enabled a huge increase in the volume of such shipments, turning simplification and trade facilitation via de minimis thresholds for VAT into a problematic source of base erosion for import duties, the VAT, and other taxes.<sup>103</sup> Following the example of EU member



**Figure 7.6** East Asian countries are losing a substantial volume of tax revenue by failing to apply current VAT rules to digital services



Source: Al-Rikabi and Loeprick, forthcoming. Data at [http://bit.do/WDR2021-Fig-7\\_6](http://bit.do/WDR2021-Fig-7_6).

Note: Figure shows the indirect tax potential of business-to-consumer e-commerce. VAT = value added tax.

states, many countries have thus begun to reduce or remove de minimis thresholds to ensure that duties are paid on most purchases. They are also exploring the role platforms can play in directly facilitating compliance with the rules governing the cross-border trade of tangible goods.

A more general question has arisen about customs duties. WTO members have exempted electronic transmissions from import duties since 1998—albeit not on a permanent basis. However, the WTO is under growing pressure to consider the revenue losses for developing economies in view of the rapid growth of digital trade.<sup>104</sup> The annual revenue losses of those economies from a moratorium on import duties on electronic transmissions have been estimated at US\$5 billion–US\$10 billion, and it may be a reason for avoiding a permanent moratorium.<sup>105</sup> However, considering the incidence of tariffs, consumer welfare, implications for export competitiveness, and the option to capture revenues through economically neutral value added taxes, the benefits of the moratorium may well outweigh the costs incurred.<sup>106</sup> Moreover, the application of reciprocal tariffs could make the application of tariffs on electronic transmissions fiscally counterproductive.<sup>107</sup>

### Reforming international agreements on direct taxation rights

Intangible assets, such as user networks, are central to many data-driven business models and are closely linked to firm performance. Value generated

by users and their data are a critical driver of the expansion of many digital service providers. Thus a case can be made for countries to try to capture this value.<sup>108</sup> Intangible assets are difficult to value, however, thereby worsening information asymmetries between taxpayers and administrators and making it more challenging to both collect taxes and design efficient and balanced tax policies. Firm-level analysis suggests that intangible assets are an important driver of corporate profit shifting across entities within a multinational enterprise (MNE).<sup>109</sup> The growth of digital business models therefore exacerbates the risks of the erosion of tax bases and the shifting of business profits to escape taxes,<sup>110</sup> creating an unlevel playing field.<sup>111</sup> It places additional pressure on the existing international tax consensus rules, which are already poorly adapted to developing country needs and priorities.<sup>112</sup>

The de facto standard setting body for international tax issues is the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS).<sup>113</sup> It is currently finalizing a policy proposal aimed at addressing challenges arising from digitalization.<sup>114</sup> This proposal, which consists of two related “Pillars,” embraces new concepts, but it falls short of calls for a fundamental overhaul of the international tax rules.<sup>115</sup>

Proposals for the first pillar were developed with the primary objective of ensuring that countries where users/consumers reside, but where an MNE does not have enough physical presence to become taxable under the current rules, are able to tax a share



of the profits of the company. The BEPS's Unified Approach is a compromise drawing on elements of various proposals made by India and the Group of Twenty-Four (G-24), the United Kingdom, and the United States, among others.<sup>116</sup>

The second pillar is also known as the global anti-base erosion proposal (GLOBE). The current proposal seeks to ensure that the profits of MNEs are subject to a minimum rate of taxation. This arrangement is intended to reduce incentives for profit shifting across MNE entities and to establish a floor for tax competition among jurisdictions.<sup>117</sup>

Preliminary estimates by OECD suggest that global corporate income tax revenues could increase by up to 4 percent, equaling US\$100 billion annually, if the reform proposals under the two pillars are agreed to and adopted.<sup>118</sup> The G-20 timeline initially aimed at reaching agreement by the end of 2020, but it has since been postponed.<sup>119</sup>

Failure to reach a new consensus risks triggering a proliferation of unilateral action, with important potential spillovers on global trade and growth. More than 30 countries, developed and developing, have already unilaterally exercised, or announced their intention to exercise, their right to impose taxation on the digital economy using interim measures.<sup>120</sup> They include Austria, France, Hungary, India, Indonesia, Italy, Kenya, Malaysia, Mexico, Pakistan, Poland, Singapore, Spain, Turkey, the United Kingdom, Uruguay, Vietnam, and Zimbabwe. Such measures are usually justified by citing the uncertainty about possible reforms of the global tax system and a determination to tax digital businesses on the value they derive from users in the country.

Measures tend to target the larger MNEs in the digital economy. When India introduced a 6 percent charge on digital services linked to online advertising in 2016, it branded the instrument an “equalization levy”—that is, a proxy for a corporate income tax on foreign suppliers that did not have a permanent establishment in the country. Several low- and middle-income economies also adopted new rules during the COVID-19 crisis. Kenya's 2020 Finance Bill proposed a 1.5 percent digital services tax, payable on revenue deemed to be derived or accrued in Kenya through a digital marketplace. In Indonesia, the April 2020 package of fiscal responses to the COVID-19 crisis included a commitment to implement an interim measure that would seek to tax the digital economy. In Brazil, a proposed digital services tax was submitted to the House of Representatives in May 2020. All these rules would be implemented either by

extending the scope of existing income taxes or by introducing a new stand-alone tax.

Almost all countries are relying on a simple measure of gross revenue as the tax base, such as the gross revenue arising from the sale of advertising or data or the amounts collected from users for provision of a service.<sup>121</sup> The presumptive nature of these instruments tends to lead to either undertaxation or overtaxation, thereby limiting the effectiveness of the instrument to capture large economic rents<sup>122</sup> and reducing returns to the politically costly adoption of digital service taxes. The United States has reacted strongly to unilateral measures, threatening to subject French exports to tariffs if France proceeds with its digital services tax and announcing a review of similar measures introduced elsewhere.<sup>123</sup> Therefore, a potentially costly trade war over taxing the digital economy looms. Meanwhile, developing economies aiming to capture tax revenue from the sector are left with few palatable short-term choices. Regional coordination of measures, as considered by the African Tax Administration Forum (ATAF),<sup>124</sup> could help minimize administrative and compliance costs, as well as competitive dynamics between countries. Ultimately, however, a global agreement would be the safest route to a sustainable long-term solution.

### **Recommended reforms of tax policy**

In considering proposals to tax the digital economy, policy makers in all countries should seek those that ensure equitable taxation of data-driven businesses, unlocking a potential revenue source for flattening the debt curve after the COVID-19 pandemic. They should also ensure that those sectors that have gained the most from the crisis are contributing their fair share. The recommendations that follow are organized according to a maturity model based on a country's level of development and data governance capacity.

#### ***Establishing fundamentals***

*Strengthen the capacity to collect indirect taxes.* This entails adopting the existing international guidelines for VAT collection and making the necessary investments in administrative capacity to ensure that the VAT is collected on physical goods purchased online and on digital goods and services from both resident and nonresident companies.

*Collect financial information from online marketplaces on the income/sales of sellers on their platforms.* This information should be combined with other third-party data to strengthen the management of tax compliance across the economy.



### Accelerating data flows

*Seek a global agreement on direct taxation.* The existing international tax principles on direct taxation were developed for a predigital age. There is a pressing need for updated principles to be agreed on in the relevant global forums. The best-case scenario is a last-minute global consensus on new rules that align with developing economy priorities and administrative capacity.

*Minimize the impact of ad hoc taxation.* In a second-best world, a trade war must be avoided. Compromise solutions entailing further interim taxation measures seem inevitable. Regional collaboration to build consensus around these solutions, share knowledge, and develop the capacity of low-income countries may help in part to fill the policy vacuum until a global solution can be reached.

### Optimizing the system

*Leverage data-driven tax administration.* Policy makers should adopt the policies and make the investments needed to support data-driven tax administration, leveraging opportunities for improving its efficiency, effectiveness, and transparency. One step in that direction is creation of a data sharing ecosystem that for businesses and individuals minimizes the burden of paying taxes, while enabling compliance management to operate in the background through tax prefilling,<sup>125</sup> automatic checks of errors, and so on. New sources of data would also be required, including platform information on the income of sellers and the consumption of buyers, which would help to bring informal enterprises into the purview of tax authorities.

*Ensure access to international sources of accounting data.* Policy makers should seek to ensure that new international data sources are available to developing countries. One example is aggregate data on the global allocation of income, profit, and taxes paid by the largest MNEs as reported in the Country-by-Country Reports.<sup>126</sup> Such data, in addition to their relevance for domestic tax administration, could help fill the information gaps in international trade statistics (see earlier section on trade policy). In many countries, tax administration data are the most complete information source on private sector activity. Administrators should explore options to make aggregate or reliably anonymized tax data available to the wider public as a source of information on the effects of tax policy, on the performance of revenue administration, and for broader research purposes. As accounting data become accessible, it will be important to ensure that the data are protected (see chapter 6).

## Conclusion

As this chapter has shown, sound competition, trade, and tax policy for the digital economy are essential to ensure that data create value for development. Devising and implementing good policies in each area are complex. Such efforts are even more difficult because all three areas are intertwined and present both domestic and international challenges. And yet meeting this challenge is more urgent than ever against the backdrop of COVID-19, which is further expanding the digital economy. Spotlight 7.2 discusses the role of regional and international cooperation in helping to meet some of these challenges.

## Notes

1. Facebook, “Who We Are” (company information), <https://about.fb.com/company-info/>.
2. Information provided by the Alibaba Group during WDR 2021 private sector consultations. See the AliExpress website, at <https://www.aliexpress.com/>.
3. Several more cases remain under investigation or are being appealed. Of those finalized, contraventions of the law were found in 55 percent of abuse of dominance cases and 77 percent of anticompetitive agreement cases. Ninety-three percent of mergers were approved, about a quarter of which with conditions.
4. Nyman and Barajas (forthcoming).
5. Nyman and Barajas (forthcoming).
6. Nyman and Barajas (forthcoming).
7. For example, the Competition Commission of India investigated Uber for collusive practices facilitated through its pricing algorithm. Ultimately, however, it did not make a finding of collusion. It concluded that the algorithmically determined pricing for each rider and each trip tends to differ due to the interplay of large datasets. A case of collusion through pricing algorithms was also brought against Uber in the United States. Ultimately, Uber won a bid to move the case to arbitration.
8. Reports and papers commissioned by expert groups on addressing competition policy in the digital economy have been released by Australia, the BRICS (Brazil, Russian Federation, India, China, and South Africa), Canada, the European Union, Germany, Japan, Mexico, the Netherlands, Portugal, the United Kingdom, and the United States, among others.
9. See “Competition Act, 1998 (Act no. 89 of 1998): Regulations on Buyer Power Made by the Minister under Competition Act, 1998.” Government Notice 168, *Government Gazette*, February 13, 2020, Government Printing Works, Pretoria, South Africa. [https://www.gov.za/sites/default/files/gcis\\_document/202002/43018gon168.pdf](https://www.gov.za/sites/default/files/gcis_document/202002/43018gon168.pdf).
10. BRICS Competition Centre (2019).
11. Argentesi et al. (2020); Motta and Peitz (2020).
12. Gautier and Lamesch (2020).
13. In some jurisdictions such as the United States, the antitrust authority may have the power to trigger a

- review on its own initiative even when the authority is not automatically notified. Such self-initiated reviews presuppose significant technical capacity on the part of the authority to engage proactively in market monitoring, which is not always present in low-income countries.
14. This approach was recently suggested by the US House Judiciary Committee's Subcommittee on Antitrust, Commercial, and Administrative Law in its report *Investigation of Competition in Digital Markets* (House Committee on the Judiciary 2020).
  15. HM Treasury (2019).
  16. Stigler Center (2019).
  17. Nyman and Carreras (forthcoming). The competition authorities surveyed were in Colombia, Egypt, Indonesia, Kenya, Malaysia, Peru, the Philippines, and Zimbabwe.
  18. Amazon (2020).
  19. Emejo (2020).
  20. Lee (2018). The authority did, however, mandate that Grab should maintain its premerger pricing algorithm and driver commissions to protect riders and drivers. Since the authority's decision, there have been two new entries to the Singaporean market.
  21. Bundeskartellamt (2019).
  22. BRICS Competition Centre (2019).
  23. DOJ (2019).
  24. EU (2016).
  25. Instead of the onetime transfer of data often envisaged under portability schemes.
  26. The number of third-party providers is as of August 2020. See Open Banking (2020).
  27. Gilbert + Tobin (2018).
  28. RBI (2019).
  29. Valdez, Branch, and Gallo Mainero (2020).
  30. See Open Ag Data Alliance (2020).
  31. Kim et al. (2020).
  32. See Open Banking (2020).
  33. This can be accomplished either through structural separation of their existing organization or by prohibiting them from operating in adjacent lines of business. This approach was recently suggested by the US House Judiciary Committee's Subcommittee on Antitrust, Commercial, and Administrative Law in its report *Investigation of Competition in Digital Markets* (House Committee on the Judiciary 2020).
  34. EU (2019).
  35. Examples are taken from World Bank (2020).
  36. Markova (2016); Zampano and Hirst (2017).
  37. Evans (2016).
  38. See International Competition Network and World Bank, "The 2015–2016 Competition Advocacy Contest: How to Build a Culture of Competition for Private Sector Development and Economic Growth," <https://www.worldbank.org/en/events/2015/10/30/the-2015---2016-competition-advocacy-contest-how-to-build-a-culture-of-competition-for-private-sector-development-and-economic-growth#5>.
  39. Article 10 of the Regulations on Transportation Services through the Use of Smartphone Applications. This example was taken from World Bank, Deep Trade Agreements: Data, Tools, and Analysis (dashboard), <https://datatopics.worldbank.org/dta/table.html>.
  40. Articles 3 and 4 of Law 87 of 2018. Examples are taken from World Bank, Deep Trade Agreements: Data, Tools, and Analysis (dashboard), <https://datatopics.worldbank.org/dta/table.html>.
  41. Soursourian and Plaitakis (2019).
  42. Cisco (2018).
  43. Cisco (2018). This figure appears to reflect the value of transactions pertaining directly to data flows, as well as the estimated value of data embedded in transactions of other goods and services.
  44. The G-20 leaders assembled in Osaka in 2019 called for creation of a new international order based on "Data Free Flow with Trust," a collective term for global governance processes needed to unleash the benefits of cross-border data flows. This proposal is taken up in the World Economic Forum's 2020 white paper "Data Free Flow with Trust (DFFT): Paths Towards Free and Trusted Data Flows" (WEF 2020).
  45. WTO (2017).
  46. Daza Jaller, Gaillard, and Molinuevo (2020); OECD (2014).
  47. USITC (2014).
  48. World Bank (2020).
  49. NBT (2015).
  50. See Office of the Attorney General, Department of Justice, State of California, California Consumer Privacy Act (CCPA) (dashboard), <https://oag.ca.gov/privacy/ccpa>.
  51. Cory (2017).
  52. In July 2020, the Court of Justice of the European Union (CJEU) issued a decision in a case now known as *Schrems II* that effectively suspended the EU-US Privacy Shield. The Privacy Shield was an agreement between the European Union and the United States—a kind of negotiated adequacy determination—that enabled personal data to be transferred from the European Union to the United States on the grounds that protections against unauthorized access to personal data (such as by US intelligence agencies) could not be guaranteed by US companies such as Facebook that received the personal data of European citizens. The CJEU's decision cast doubt on whether data could still be transferred under what are known as "standard contractual clauses" (SCCs) without also taking into account the legal environment of the destination country. Maximilian Schrems, an Austrian national, brought the case, saying that Facebook did not have adequate measures in place to ensure that his data, if transferred to the United States, would be afforded treatment similar to that under the GDPR. The Privacy Shield, a post-GDPR solution, followed a previous EU-US agreement, the Safe Harbor, which was also struck down in a case brought by Schrems. The precise impact of the decision in *Schrems II* is at present unknown, as is the reliance on SCCs in the absence of the Privacy Shield agreement as a basis for transatlantic data transfers.
  53. Chander et al. (2021).
  54. All governments, regardless of their policy approach to cross-border data flows, retain some level of access



- to personal digital data as part of their security, intelligence, and law enforcement legislation, including without the consent or knowledge of the data processor. The analysis in this chapter, however, focuses on regulation of cross-border data as an economic activity and the conditions that apply to it.
55. Bauer, Ferracane, and van der Marel (2016).
  56. Cory (2017).
  57. Cory (2017).
  58. See “Russia’s ‘Big Brother’ Law Enters into Force,” with reporting by Anton Muratov, *Moscow Times*, July 1, 2018, <https://www.themoscowtimes.com/2018/07/01/russias-big-brother-law-enters-into-force-a62066>. See also the following two laws of the Russian Federation: **Федеральный закон от 06.07.2016 г. № 374-ФЗ** [Federal Law, July 6, 2016, No. 374-FZ] [in Russian], <http://kremlin.ru/acts/bank/41108>; **Федеральный закон от 06.07.2016 г. № 375-ФЗ** [Federal Law, July 6, 2016, No. 375-FZ] [in Russian], <http://kremlin.ru/acts/bank/41113>.
  59. Chander and Lê (2015).
  60. Chander and Lê (2015).
  61. To access the World Bank’s Global Data Regulation Survey and its results, see <https://microdata.worldbank.org/index.php/catalog/3866>.
  62. Ferracane and van der Marel (2019).
  63. Biancotti (2019); Hillman (2018).
  64. Ferracane and van der Marel (2019).
  65. See Article 19 (2020). See also Case of OOO Flavus and Others v. Russia, Application no. 12468/15, Final Judgment (November 16, 2020), Third Section, European Court of Human Rights, Strasbourg, <https://hudoc.echr.coe.int/eng#%7B%22itemid%22:%5B%22001-203178%22%7D>.
  66. Baur-Yazbeck (2018).
  67. Chander and Lê (2015); Spaulding, Falvey, and Merchant (2013).
  68. Chander and Lê (2015).
  69. Liu (2019); Molinuevo and Gaillard (2018).
  70. On a related point, see Deardorff (2017).
  71. To access the World Bank’s Global Data Regulation Survey and its results, see <https://microdata.worldbank.org/index.php/catalog/3866>.
  72. Ferracane and van der Marel (2021).
  73. Chander et al. (2021).
  74. EU (2018).
  75. The WTO had 164 members, including countries and independent custom unions, at the time of writing.
  76. Crosby (2016).
  77. Burri (2017); World Bank, Deep Trade Agreements: Data, Tools, and Analysis (dashboard), <https://data.topics.worldbank.org/dta/table.html>; Wu (2017).
  78. Parties to the agreement are Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. The CPTPP built on the Trans-Pacific Partnership (TPP), which never entered into force because the United States withdrew.
  79. Article 14.11 of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership states: “Each Party shall allow the cross-border transfer of information by electronic means, including personal information, when this activity is for the conduct of the business of a covered person.” See Government of Canada, “Consolidated TPP Text, Chapter 14: Electronic Commerce,” last modified November 30, 2016, <https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/tpp-tpa/text-texte/14.aspx?lang=eng>.
  80. See Office of the United States Trade Representative, U.S.–Japan Digital Trade Agreement Text (dashboard), <https://ustr.gov/countries-regions/japan-korea-apec/japan/us-japan-trade-agreement-negotiations/us-japan-digital-trade-agreement-text>.
  81. The United States–Mexico–Canada Agreement (USMCA) provides that “no Party shall prohibit or restrict the cross-border transfer of information, including personal information, by electronic means if this activity is for the conduct of the business of a covered person” (USTR 2020a, 19–6).
  82. African Union (2014).
  83. APEC (2017).
  84. Wu (2017).
  85. WTO (2017).
  86. Hufbauer and Lu (2019).
  87. Ideally, improved trade policy data should be collected at the transaction level, leveraging information reported by cross-border services providers for fiscal purposes—duly deidentified and aggregated. The result would be much richer than what is typically reported for balance of payment purposes. Such information can be derived from customs declarations or submissions from foreign service providers.
  88. Facebook opened its sole office in Africa in 2015 in Johannesburg, South Africa (BBC 2015). It serves more than 200 million African users (Rukundo 2020).
  89. Digital services taxes are particularly controversial. Part of the challenge is related to their design because they appear to ringfence a small number of companies and are thus subject to the charge that they are discriminatory. Kennedy (2019) and the CCIA (2020) provide such a critique.
  90. World Bank (2019).
  91. OECD (2017).
  92. Ahanchian et al. (2021).
  93. OECD (2017, 2018a).
  94. In the European Union, an online portal allows nonresident suppliers of telecommunications, broadcasting, and electronic services to register, submit quarterly returns, and pay the tax due (EC 2020).
  95. The reported gains were more than €3 billion at a 2017 exchange rate of €1 to US\$1.13, average closing price (OECD 2018b).
  96. Australia’s threshold was set at \$A75,000 at a 2017 exchange rate of \$A1 to US\$0.77, average closing price (ATO 2020). Digital services include streaming or downloading music, movies, applications, games, and e-books. Professional services include architectural and legal services.
  97. OECD (2020a).
  98. Buric (2020).
  99. Al-Rikabi and Loeprick (forthcoming). These preliminary figures are based on gross revenue estimates that were derived in 2019 before the COVID-19 crisis. They refer to estimates of the VAT potential of e-commerce,

online media and advertising, online travel, and the gig economy (food delivery and ride hailing). Estimates are being updated drawing on updated sales data (different sources) and tax data from government sources. To a degree, online and offline purchases are substitutes (for example, an additional TV bought online would be one less TV bought offline), so the growth of online commerce implies slower growth of offline commerce. Accordingly, revenue forecasts should not simply add estimated revenue gain from taxing the digital economy to forecasts of the VAT because that would lead to an overestimate of the growth in the VAT. A comprehensive forecast would disaggregate online and offline consumption so that the bases used in an elasticity-based forecast could vary accordingly.


Revenue authorities have for some time documented the problem of the “missing trader” fraud scheme, whereby business entities minimize their tax liability by establishing multiple companies to issue fictitious invoices. Several factors drive the missing trader scheme, but the rise of e-commerce has certainly been a major one, according to analysis conducted by revenue authorities. See KRA (2020).

100. Al-Rikabi and Loeprick (forthcoming). The estimates for Indonesia are preliminary and were derived before the COVID-19 crisis.
101. The largest policy gaps stem from the high VAT threshold (merchants with annual sales of less than Rp 4.8 billion do not have to charge the VAT), as well as exemptions and other preferential treatment in the VAT system for some sectors and types of economic activity. The administrative gap reflects challenges in compliance, which is generally low in Indonesia. For example, VAT compliance was estimated at 56.6 percent using 2013 data (Sugana and Hidayat 2014). Countries with more efficient revenue authorities and more limited tax thresholds and exemptions will have a narrower gap between tax collection and tax potential. Singapore is a good example.
102. This revenue gain could increase if broader VAT reforms are pursued, including lowering the VAT threshold, reducing exemptions, and implementing administrative measures to improve compliance.
103. The *de minimis* is a valuation ceiling for goods, including documents and trade samples, below which no duty or tax is charged and clearance procedures, including data requirements, are minimal. Apart from customs duties, the customs administration typically collects import VAT (a portion of the VAT tied to imports), excise taxes, and sometimes even withholding taxes on income (a form of advance payment of income taxes linked to imports used by many developing countries in a bid to include the informal sector in the tax base) (Keen 2008). In many jurisdictions, charging these additional taxes is linked to charging import duties, and thus shipments that fall below the *de minimis* often end up avoiding all the other taxes as well.
104. The scope of what is covered by the moratorium is subject to different interpretations by WTO member states. Several emerging market countries have signaled their unwillingness to extend the moratorium

further, feeding into broader tensions related to global taxation of the digital economy. India and Indonesia have openly criticized the moratorium and have signaled that they may opt out of any further extension.

105. Banga (2019).
106. Andrenelli and López González (2019).
107. Makiyama and Narayanan (2019).
108. See Aslam and Shah (2020).
109. Because intangibles can easily be moved, so, too, can the associated returns. This is a contributing factor to profit shifting to low-tax countries or regimes. See Beer and Loeprick (2015).
110. IMF (2019); OECD (2018a).
111. The European Commission suggested that companies with digital business models have, on average, half the effective tax rate of companies with traditional business models (see European Commission, Taxation and Customs Union, Fair Taxation of the Digital Economy [dashboard], [https://ec.europa.eu/taxation\\_customs/business/company-tax/fair-taxation-digital-economy\\_en](https://ec.europa.eu/taxation_customs/business/company-tax/fair-taxation-digital-economy_en)). However, these results have been challenged because they were not derived from industry data. Other studies suggest that digital businesses have similar, or slightly higher, effective tax rates than traditional businesses. See Bauer (2018). From an equity perspective more broadly, the evidence is clear that tax evasion is highly concentrated among the rich. See Alstadsæter, Johannesen, and Zucman (2019).
112. Clavey et al. (2019).
113. BEPS has 130 country members (including all OECD members) and is housed at OECD. International organizations such as the World Bank Group have an observer role.
114. Although harmonization of international taxation practices goes beyond the digital sector, the discussion in this chapter is necessarily limited to digital taxation.
115. Devereux et al. (2021) assess a more radical set of reform options in allocating taxing rights, including a full move to basing taxing rights on destination, or where sales are made, and options for adopting a variant of wide-reaching formulary apportionment for nonroutine profits in the form of residual profit allocation by income. To read BEPS's summary of progress and outline of key proposals it has developed, see OECD (2020b). For a summary of the development of BEPS's proposals and a discussion of an alternative departing from the arm's-length standard by embracing the apportionment of an MNE's taxable income based on its sales to unrelated customers in each country, see Avi-Yonah and Clausing (2019). An alternative view is set out by Romer (2019), who argues that taxation can be used to encourage platform companies to make changes in their business models. Another alternative to BEPS's Unified Approach involves a new tax based on internet bandwidth (Lucas-Mas and Junquera-Varela 2021).
116. The Unified Approach differentiates three elements of the returns on MNE activity within the scope of the measure. First, a portion of the deemed residual profit is to be allocated to all market jurisdictions, irrespective of whether the MNE has a physical presence.





This envisaged formulaic allocation represents a new taxing right. Second, a baseline or routine return will be established for distribution activities and marketing based on fixed ratios in jurisdictions with a physical presence. And, third, the existing transfer pricing methods are used to determine the nonroutine profit not captured under the first step. In addition, a form of mandatory arbitration is envisaged.

117. Four main technical mechanisms would be at work here: an income inclusion rule, an undertaxed payment rule, a switchover rule, and a subject-to-tax test. The idea is to implement residence-based taxation when the source tax is too low and impose source-based taxation when the residence-based taxation is too low.
118. OECD (2020b).
119. In addition to the COVID-19 crisis shifting priorities and attention, important disagreements persist about controversial design features of the proposal, including about the rule order, which will affect the extent to which developing countries can expect to benefit directly from the proposed minimum tax measures. Clavey et al. (2019) provide a summary of these differences. The call by the United States in June 2020 to suspend discussions on the first component stalled progress toward a consensus solution. See Fleming et al. (2020).
120. KPMG (2021).
121. Similarly, a draft provision and commentary prepared following the 20th session of the United Nations Committee of Experts on International Cooperation in Tax Matters, outlined a proposed targeted blueprint focused on taxing the automated digital services of providers either by taxing a share of gross revenue or by a simplified determination of the share of profits that would be subject to regular income taxation. See UN DESA (2020).
122. One alternative proposal is to target global excess profits directly. See Christians and Magalhães (2020).
123. USTR (2020b).
124. ATAF (2020).
125. The revenue authority can use information collected about taxpayers (such as from previously submitted tax forms; electronic invoices submitted; and third-party data from banks, land registries, and other sources) to “prefill” large parts of the tax forms taxpayers are required to submit. In this way, tax form prefilling reduces the time to file and submit taxes, lowering the burden of paying taxes and improving overall tax compliance.
126. Country-by-Country Reports (CbCRs) are part of the OECD’s Base Erosion and Profit Shifting Action Plan 13. MNEs with a combined revenue of €750 million or more are required to provide an annual report—the CbCR—that breaks down key elements of their financial statement by jurisdiction. In this way, local jurisdictions gain greater insight into MNE activities in their jurisdiction, including revenue, income, tax paid and accrued, employment, capital, retained earnings, and tangible assets and activities. See Organisation for Economic Co-operation and Development, Action 13 Country-by-Country Reporting (dashboard), <https://www.oecd.org/tax/beps/beps-actions/action13/>. For an illustration of the process, see PCT (2020). The European Parliament called for public disclosure of Country-by-Country Reports, but a consensus could not be reached in the Council of Ministers. See EC (2016).

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