IN-DEPTH ANALYSIS

Requested by the INTA committee

European Parliament

Geopolitical Aspects of Digital Trade

Policy Department for External Relations
Directorate General for External Policies of the Union
PE 653.616 - November 2020

EN

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES
POLICY DEPARTMENT

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ABSTRACT

This in-depth analysis discusses issues in trade in digitally deliverable services and the geopolitics of digital trade policy. Digitally deliverable services are becoming increasingly important for global value chains, both in terms of final products exported to other countries, and in terms of inputs embedded in manufactured goods. To harness the potential of digital trade in services, both the regulation of the digital means by which a service is traded and the regulation of the services themselves have to be accommodative. Digital trade policy is still in its infancy, and many challenges in terms of policy and measurement remain. Looking at regulation of data flows, the EU's focus on privacy policy is incompatible with the *laissez-faire* approach pursued by the US administration and the political control of the internet by the Chinese government, limiting the potential for trade in digitally deliverable services and plurilateral agreements on digital trade. However, a number of other major economies are following similar approaches to the EU, which creates the potential for cooperation and intensifying trade in digital services. The EU should also increase its competitiveness in this strategically important services sector by completing the single market with respect to services and capital, and by strengthening research and development in digital technologies.

EP/EXPO/INTA/FWC/2019-01/LOT5/1/C/05
November 2020 - PE 653.616

EN

This paper was requested by the European Parliament's Committee on International Trade.

English-language manuscript was completed on 11 November 2020.

Printed in Belgium.

Authors: Niclas Frederic POITIERS, Research Fellow, Bruegel, Belgium; Dennis GÖRLICH, Head of Global Challenges Center, Kiel Institute for the World Economy, Germany

Officials Responsible: Mario DAMEN, Wolfgang IGLER

Editorial Assistant: Balázs REISS

Feedback of all kind is welcome. Please write to: wolfgang.igler@europarl.europa.eu.

To obtain copies, please send a request to: poldep-expo@europarl.europa.eu

This paper will be published on the European Parliament's online database, 'Think tank'.

ISBN: 978-92-846-7439-8 (pdf)

doi: 10.2861/98661 (pdf)

Catalogue number: QA-02-20-909-EN-N

ISBN: 978-92-846-7440-4 (paper)

doi: 10.2861/318312 (paper)

Catalogue number: QA-02-20-909-EN-C (paper)

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1 Introduction[1]

The COVID-19 epidemic has led to a rapid increase in the adoption of digital tools and services. Video calls have replaced physical meetings and conferences, teleworking has replaced commutes to the office. In the services sector in particular, digital technologies have been adopted rapidly to manage pandemic-induced lockdowns and social distancing requirements. Jobs that previously required physical presence in an office are now often performed remotely. This shows the potential for international trade in services through digital delivery. As the physical location of white-collar workers becomes less important, the potential gains from trading services internationally increases. This could allow businesses and consumers to buy services from the best providers in the world at the cheapest price. This has the potential to increase the variety of services available to consumers, and the incorporation of foreign service providers into European value chains could increase their global competitiveness. However, as we explore in this paper, the rules governing digital trade internationally are still in their infancy, and major geopolitical challenges arise, especially from the flow of personal data between different territories and jurisdictions.

Trade in goods has dropped sharply during the pandemic, but indicators point to a relatively quick rebound[2]. While goods are not a disease vector, international travellers are. International travel has collapsed: in August 2020 the number of commercial flights was down by 28.6 % compared to 2019, a recovery from its initial decline of 75 %[3]. Actual numbers of international passengers are likely to be even lower than the total number of flights would indicate, as travel bans are still in place all over the world. Unlike the goods trade, international travel might not rebound until a vaccine is readily available. While travel, tourism, cultural and recreation services have contracted rapidly, digitally delivered services have grown – through videoconferencing and media streaming, for example. This is also the case for digitally-enabled trade (e-commerce), with the retail sector seeing a steep decline during lockdowns and e-commerce and delivery seeing strong increases.

However, for the potential digital trade gains to be realised, the regulation of data flows and the regulation of the services that are traded digitally have to be compatible. As the largest economies have developed different approaches in particular to the treatment of personal data, there is incompatibility and the potential for conflict. This in-depth report discusses the geopolitical implications for the EU of digital trade and digital trade policies. We provide an overview of digital trade in services and digital policies. We focus on digital services as we believe that the role played by data in the services trade is essential for understanding the geopolitics of digital trade. We first provide some key figures on the state of the digital services trade and how it has developed within global value chains, focusing on the EU's main trading partners. Then, we discuss the philosophies and digital strategies of important trading partners, and conclude with a geopolitical assessment of the future of digital trade.

2 What is digital trade?

There is no consensus on the exact definition of digital trade in the literature (see for example Aaronson, 2019), but the key difference compared to traditional trade in goods and services is the prominence of cross-border data flows (Aaronson and LeBlond, 2018). Generally, trade is considered to be digital if parts of the transaction are conducted through digital means. Services and goods can both be traded through

[1] We would like to thank Monika Grzegorczyk, Lionel Jeanrenaud and Raffaella Meninno for their excellent research assistance. We also are grateful for the comments and feedback received by Holger Görg, Jean Pisani-Ferry and Guntram Wolff and for advice from Colin Bradford, J. Scott Marcus and Daniela Stockmann.

[2] According to the World Trade Organisation, we are on path to its *'optimistic'* scenario for 2020 with a decline in trade of 13 %; see WTO press release from 23 June 2020 (PRESS/858): https://www.wto.org/english/news_e/pres20_e/pr858_e.pdf.

[3] Source: flightradar24; https://www.flightradar24.com/blog/commercial-flight-growth-slows-in-august/.

'digital' transactions[4]. Services can be delivered digitally and goods can be ordered online and paid for via digital means[5]. The treatment of 'information' as data or as intellectual property is central to the debate on digital trade. Traditional trade consists of the provision of physical goods against a payment. For services in particular (but also digitally enhanced goods such as internet of things components), data is now an important part of the transaction. On a number of major digital platforms, consumers do not pay directly *in specie*[6]. Service providers rely instead on consumers surrendering private data that is used to sell targeted advertisements to other businesses. Data and data analytics are also behind many new and transformed services. The internet of things has led to the embedment of software in an increasing range of products, which are often sold with a service component attached to them, of which the ongoing exchange of data with the producer is a major part[7].

Data is a very peculiar economic input. It is similar to a public good in the sense that it is not consumed when being used (in economic parlance 'non-rival in consumption'), while it is similar to a resource in that one can control access to it (it is 'excludable'). The economic value of data for a company depends on the company's ability to control access to the data. The disembodied nature of data and digital services also implies that they can be easily copied and moved across borders. This frictionless mobility is the source of the great economic potential of trade in digital services, but also poses challenges for its regulation. Regulatory and tax arbitrage are a concern when companies can easily move their operations between jurisdictions. Easy movement of data also poses challenges in enforcing consumer rights. As a result, a number of laws with extraterritorial scope have been passed, such as the European Union's General Data Protection Regulation (GDPR) and the US CLOUD Act.

We discuss in this in depth analysis the regulatory and geopolitical challenges to EU trade policy from cross-border data flows. These challenges (and opportunities) are much less important for goods ordered by digital means (e-commerce) than for services that are themselves delivered digitally. Therefore, we focus in our analysis on digitally deliverable services. Services trade is regulated by the General Agreement on Trade in Services (GATS), which distinguishes between four modes of services trade:

- Mode 1: services supplied from one country to another (e.g. video conferences);
- Mode 2: consumers or firms making use of a service in another country (e.g. tourism);
- Mode 3: a foreign company setting up a subsidiary or branch to supply a service in another country (e.g. a bank with a foreign branch);
- Mode 4: individuals travelling from their own country to supply services in another country (e.g. consultants working with clients abroad).

Not all services can be traded digitally. For our economic analysis on digital trade in services, we employ the classification of UNCTAD (2015) to determine the services that *potentially* can be delivered digitally[8]. The classification covers:

- Insurance and pension services;
- Financial services;

[4] According to Lopez Gonzalez and Jouanjean (2017), the common understanding emerges that digital trade 'encompasses digitally-enabled transactions in trade in goods and services which can be either digitally or physically delivered and which involve consumers, firms and governments' (p. 4).
[5] It is still debated if digital goods such as digital media should be treated as goods or services.
[6] This also complicates the measurement of digital trade; see Lopez Gonzalez and Jouanjean (2017).
[7] Developments around the internet of things also raise a number of regulatory and security issues that must be addressed at international level (see Twomey, 2018).
8 See website accompanying the database for international trade in digitally-deliverable services: https://unctadstat.unctad.org/wds/TableViewer/summary.aspx?ReportId=158358

- Charges for the use of intellectual property;
- Telecommunications, computer and information services;
- Other business services; and
- Audio-visual and related services.

These service types are disaggregated in the Extended Balance of Payments Services classification (EBOPS) adopted by the UN Statistical Commission in 2010. We use this classification of digitally deliverable services throughout this report and we also make use of an approximation of *sectors* that produce digitally-deliverable services, based on Wettstein *et al* (2019).

We consider digital trade to describe the *mode of delivery* of a service (see also Lopez Gonzalez and Jouanjean, 2017). For example, consulting services can be delivered physically or digitally. Therefore, they are *potentially* digitally deliverable. Note that the service as such (consulting) does not change, but the mode of delivery is different (GATS mode 4 vs. mode 1). In one mode, data crosses borders but does not necessarily in the other. Digitalisation has also enabled the creation of new services based directly on data and the movement of data across borders, such as social media platforms or cloud services.

The potential created by new technologies in terms of trading services digitally is constrained by regulation. Digital technologies have created the technical ability to trade such services directly across borders (mode 1) without the need to create a physical presence (mode 3), or for the service provider to travel the country where the service is provided (mode 4). However, this potential is limited by regulatory hurdles in terms of both the digital delivery of the services and restrictions on the trade in services itself. For example, a professional who wants to market their services in a foreign country might be prevented from doing so by laws requiring them to store the data of his customers in the customers' country of residence. He might also be prevented from doing so by laws requiring him to be resident in the country his customers live in, or by country-specific certifications and licenses. This example highlights the need for both the regulation of data flows and the regulation of services itself to be compatible, if the potential of trade in digital services is to be fulfilled.

The problem of how to regulate digital trade in goods and services could be resolved via multilateral or plurilateral agreements. The World Trade Organisation agenda on digital trade dates back to 1998, when the *Work programme on electronic commerce* was adopted. However, *'policymakers are just beginning to figure out how and where to regulate cross-border data flows'* (Aaronson and LeBlond, 2018, p.250). Fundamental questions on the nature of 'electronic transmission' are still unresolved. Are digital 'items' such as software, digital movies or e-books, to be treated as goods (subject to GATT and potentially to tariffs) or services (and thus subject to GATS and service regulation)? In this debate, the United States' position is that electronic transmissions are to be treated as intangible goods, while the EU wants them to be treated as services[9]. A moratorium on tariffs on 'electronic transmissions' was introduced in 1998. However, this moratorium is under pressure from countries that lose out on tariff revenues[10].

3 Digital services in global value chains

When thinking about trade and global value chains, container ships, cranes, assembly factories and warehouses come to mind. However, the face of trade has changed fundamentally over the last few decades. Trade in services is growing more strongly than trade in goods, digitally-deliverable services are on the rise, and, as services are also embodied in manufactures, digital services are also crossing borders

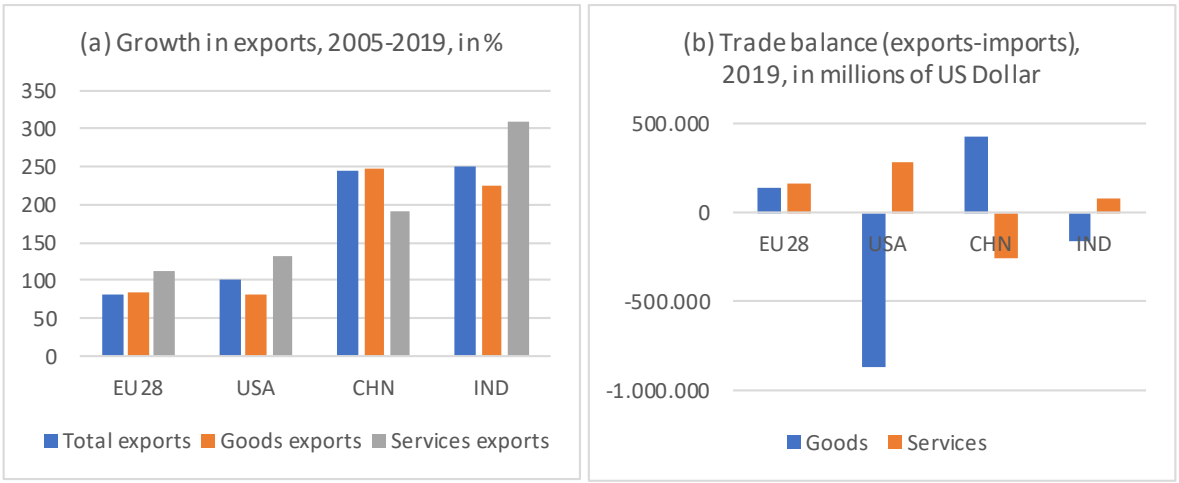
[9] See WTO documents WT/GC/W/497 & WT/GC/W/556. For a discussion, see Banga (2019, page 25-27).
[10] This moratorium has been extended biannually. However last time it was extended only until the WTO ministerial in June 2020 (MC12), which was postponed due to the coronavirus pandemic. See WTO document WT/L/1079.

as part of the regular goods trade. This section focuses on the EU, and on the United States, China and India, as the EU's major trading partners and countries of strategic interest. Generally, international trade has increased strongly during recent decades, even though growth has levelled off in the last few years. Much of this growth in trade has been generated by the proliferation of global value chains (GVCs). As they pass along these, goods and services cross borders several times before the final product is consumed or exported. Digital trade has played a role in the proliferation of GVCs by enabling and simplifying exchanges, payments and controls between partners in a value chain.

The measurement of digital trade poses considerable challenges. Since digitally delivered services never pass by a customs agent, and since crucial intangible capital (intellectual property) is easily transferred between jurisdictions, it is difficult to gauge the 'real' local value added embedded in trade in digital services. Tax optimisation schemes that channel profits through jurisdictions like Ireland distort the real flow of trade in services to some extent (Setser, 2020; Lane, 2020).

Figure 1 (a) shows that between 2005 and 2019, the value of services exports from the EU-28, the US and India grew faster than goods exports. Note that as our data cover the pre-Brexit time, the data on EU include the UK. In China, services exports grew somewhat less than goods exports, but still at a high rate. In 2019, services exports accounted for approximately 33 % of the value of all exports from the EU-28 and the US (up from 29 % in 2005). In China, services accounted for 8 % of exports, and in India they accounted for almost 40 % of exports. The trade balance position of the four economies is shown in Figure 1 (b). The United States and India are net importers of goods, but net exporters of services. The opposite is true for China, which is a net exporter of goods and a net importer of services. Only the European Union is a net exporter of both goods and services.

Figure 1: OECD Statistics on International Trade in Services



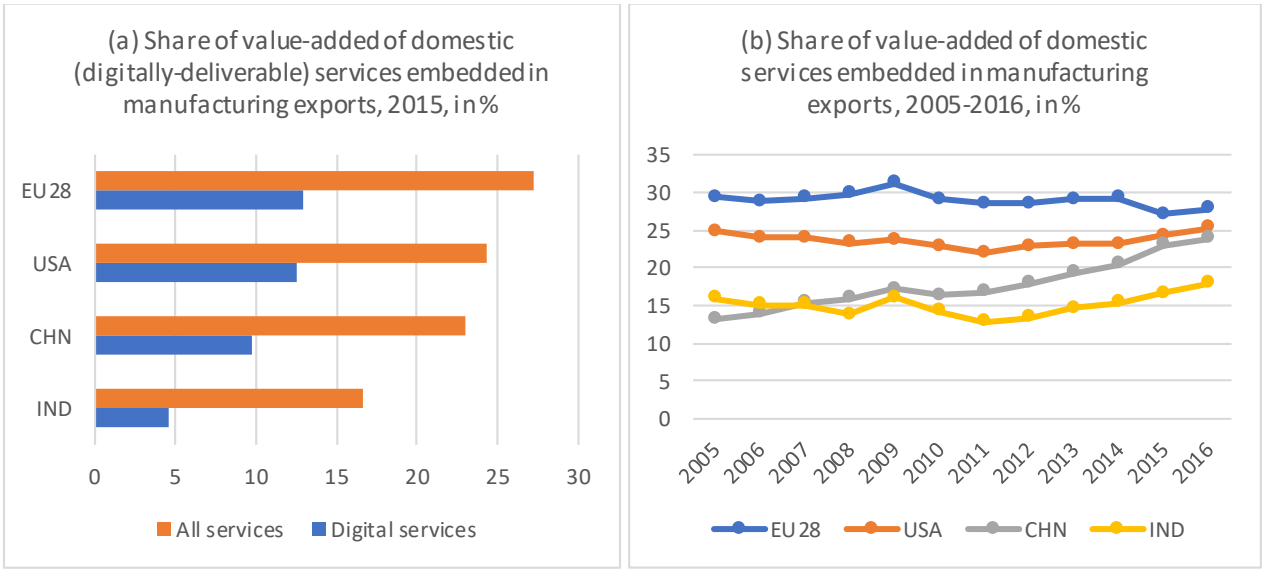
Source: OECD, Balance of Payments.

Despite the faster growth of the services trade, manufacturing trade is still much larger in terms of scale. Yet services are also an essential element in manufactured goods GVCs, starting with R&D, consulting and market analyses in the upstream sections of GVCs, and ending with customer service and repair services in the downstream sections. For many manufactured goods the embodied services are central to product differentiation. Cernat and Sousa (2015) estimated that manufacturing is responsible for around 60 % of all EU jobs that are linked to exports. However, 40 % of the jobs that are supported by manufacturing exports are in fact service-sector jobs.

Figure 2 (a) compares the value added of domestic services embedded in manufacturing exports in the EU-28 and its partners. The EU's domestic value-added share of services is larger than in all other the economies, amounting to roughly 27 %, and about half of the embedded services can be characterised as

digitally-deliverable services. Figure 2 (b) shows that, in Europe, the share has been roughly constant, while it has increased significantly in China. This indicates substantial value-chain upgrading in China in the past decade.

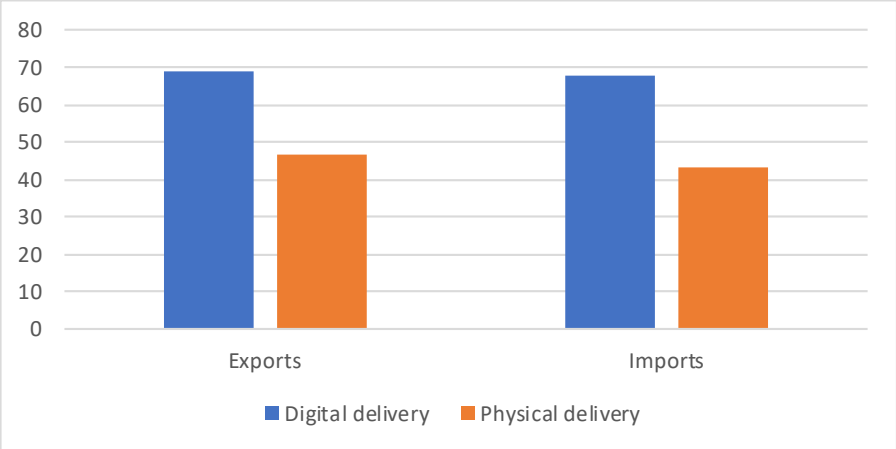
Figure 2: Value added of services embedded in manufacturing exports



Source: OECD (2020) – Trade in Value Added, Principal indicators & origin of value added in gross exports; own calculations; classification of digitally-deliverable services based on UNCTAD (2015) and Wettstein et al. (2019).

However, pure service GVCs are also increasingly spreading across countries. Examples include outsourcing to foreign countries by consulting agencies, or social media platforms or cloud services launched in many countries around the world. These developments are reflected in services trade growth rates. In Figure 3, we compare the growth rates of exports of potentially digitally deliverable services and physically deliverable services in the pre-Brexit EU. In the EU, trade in digitally-deliverable services increased more rapidly between 2010 and 2018 than trade in services that can only be delivered physically. This indicates a structural shift in the services industry. In terms of the GATS modes of services, we suspect that we observe a relative increase in mode 1 trade (which is the major mode of delivery of digital services) relative to the other modes, even though this interpretation cannot be validated with the available data[11].

Figure 3: Growth in services trade by delivery type in the EU28, 2010-2018, in %

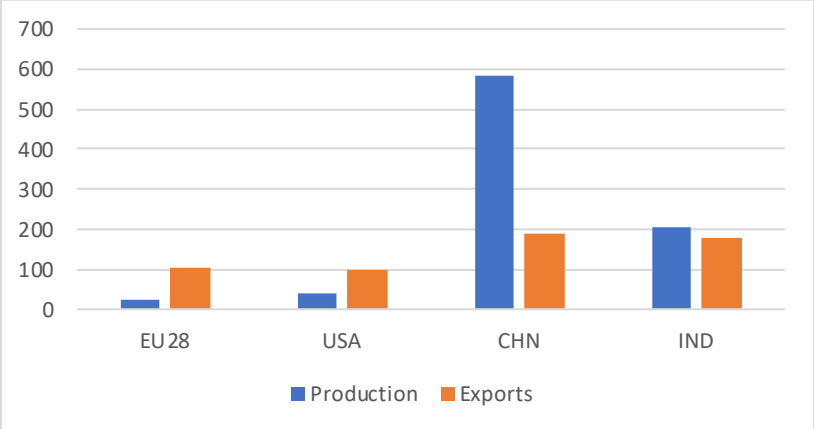


[11] For some statistics on trade in service by mode and a discussion on the difficulties in data availability see Cernat *et al* (2016).

Source: OECD (2019b) - Trade in services - EBOPS 2010, trade in services by partner economy; classification of digitally-deliverable services based on UNCTAD (2015).

Taking a closer look at digitally deliverable services in our four economies of analysis, Figure 4 shows the growth in production and exports of digitally-deliverable services between 2005 and 2015. It becomes clear that production increased most in China, but those services were mostly used domestically. Chinese exports of these services grew at a much slower rate. However, exports of digital services from the US and the European Union increased at a much faster rate than production.

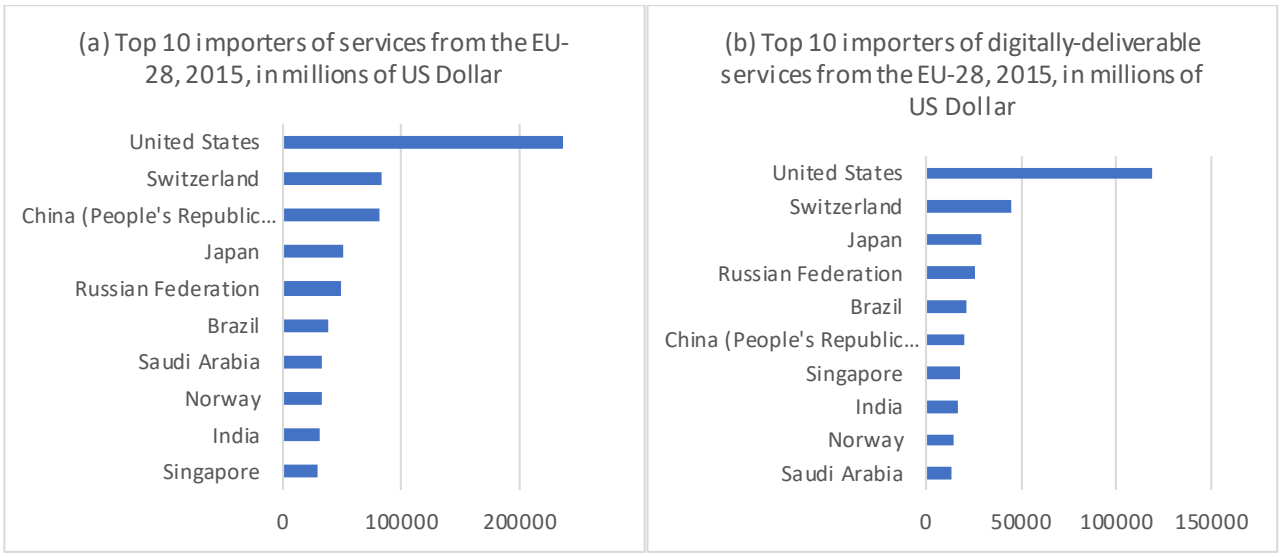
Figure 4: Growth in production and exports of digitally-deliverable services, 2005-2015, in %



Source: OECD (2020) – Trade in Value Added, principal indicators; classification of digitally-deliverable services based on UNCTAD (2015).

Most of the services exports from the EU-28 go to the United States, followed by Switzerland and China (see Figure 5 (a), which lists the top 10 importers of European services). The same holds for exports of digitally deliverable services (Figure 5 (b)), except that China is much less important as a destination for European digital services than it is for European services in general. This gives a first hint at market access restrictions in China, which will be discussed in more detail below. Overall, the world market share of services from the EU was 24 % in 2015. The United States had a market share of 21 %, China had 4.6 %, and India had 3.8 %.

Figure 5: Top importers of service from the EU-28

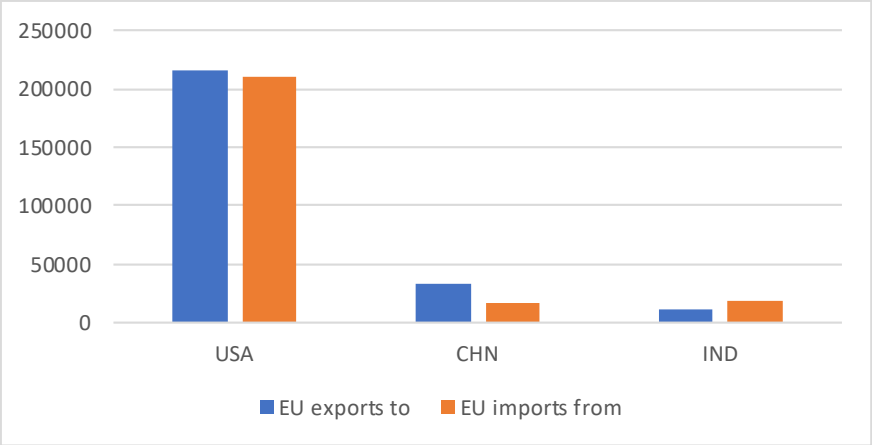


Source: OECD (2020) – Trade in Value Added, Origin of value added in gross imports

Figure 6 shows bilateral trade in digital services between the EU-28 with its partners. The Figure shows exports from the European Union to partners, as well as imports from partners. It is striking that bilateral

trade with the US in digital services is almost balanced: the EU exports as many digitally-deliverable services to the US as it imports [12]. Moreover, the EU is a net importer of digital services from India.

Figure 6: Bilateral trade with digitally-deliverable services of the EU-28 with major trading partners, 2018, in millions of US Dollars



Source: OECD (2019b) - Trade in services - EBOPS 2010, trade in services by partner economy; classification of digitally-deliverable services based on UNCTAD (2015).

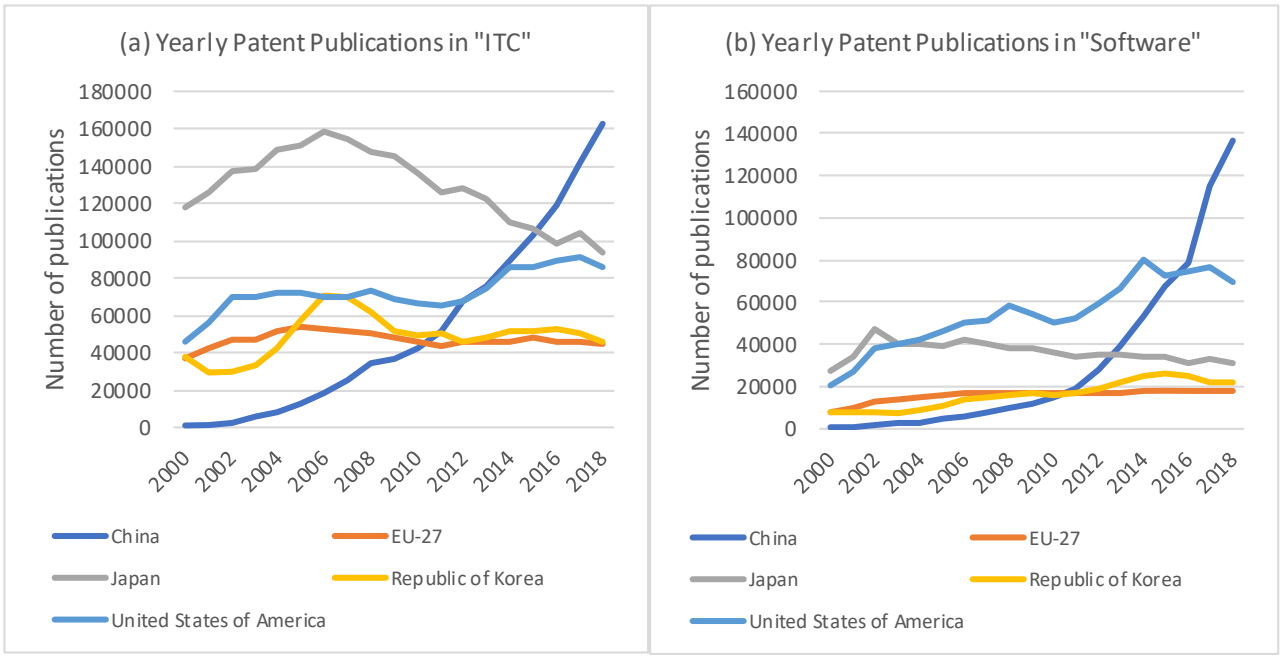
The digital realm is often seen as being dominated by the United States: The digital giants (like the GAFA – Google, Apple, Facebook and Amazon) are predominately American. Of the 10 largest public companies by market capitalisation, seven are 'digital' companies based in the US or China [13]. Judging from patent counts in information and communication technologies and software (Figure 7), it is apparent that Europe lags the US and East Asian economies. While in 2018, 155 211 patents in these two categories were filed in the US, and 299 310 were filed in China, in the EU is was a mere 62 473 [14].

[12] It should be noted that the output of large digital platforms such as Google may not appear in this statistic. Notably, tax optimisation schemes that channel profits through tax havens such as Ireland distort the real flow of trade in services. See Setser (2020) and Lane (2020).

[13] Source: *Forbes*, 'The World's Largest Public Companies'. Digital companies are Microsoft, Apple, Amazon, Alphabet (Google), Alibaba and Tencent Holdings. The only company in the top 10 that is not from the US or China is Saudi Aramco. Ranking retrieved on 12 September 2020. See https://www.forbes.com/global2000/list/#header:marketValue_sortreverse:true.

[14] However, these are just patent counts regardless of quality. In the section 5.4 on artificial intelligence, we see that in terms of high quality patents, the US is far ahead, while in terms of high quality publications in scientific journals, the EU is on par with China.

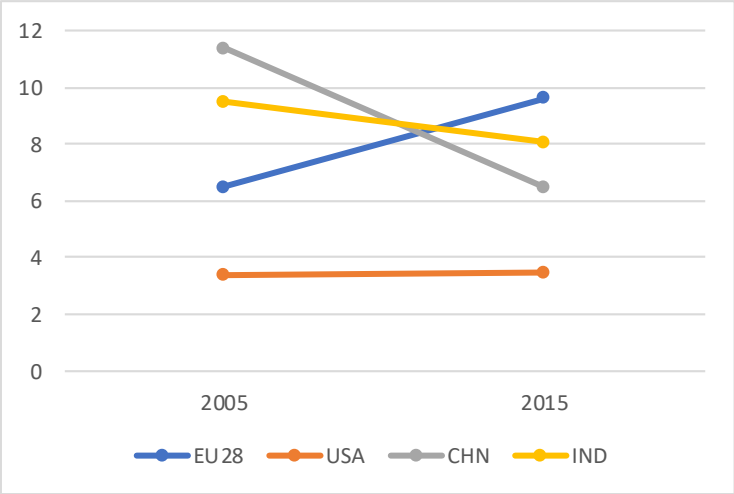
Figure 7: Yearly patent publications in ITC goods and software



Source: World Intellectual Property Organisation. 'ITC' includes the patent categories 'Audio-visual technology' 'Telecommunications', 'Digital communication', 'Basic communication processes', 'Semiconductors' and 'Optics'. 'Software' is comprised of the patent categories 'IT methods for management' and 'Computer Technology'.

The share of foreign value added in exports of digitally-deliverable services increased only in the European Union, whereas it stayed constant in the US and decreased in China and India (see Figure 8). In other words, European exports of digital services contain an increasing amount of foreign input. Europe thus relies more than other economies on digital services sourced from abroad. This is a positive development in that it could signal better integration of Europe into GVCs, with benefits from specialisation. As Rückert *et al* (2019) showed, compared to the US, European companies are indeed not lagging behind in adoption of (foreign) digital technologies.

Figure 8: Share of foreign value added in exports of digitally-deliverable services, 2005 and 2015, in %



Source: OECD (2020) – Trade in Value Added, Principal indicators; own calculations; classification of digitally-deliverable services based on UNCTAD (2015) and Wettstein et al. (2019).

However, because many digital services are characterised as winner-takes-all markets, there is a risk of Europe losing out in this sector. Digital services can be created at almost zero marginal cost and their production can deliver large returns to scale. Together with network effects (a social network is only valuable to a consumer if it is widely used), the large returns to scale present in digital services can lead to

monopolistic power. As a service can easily be scaled up, it is cheap to trade these services across borders if regulation allows. These winner-takes-all tendencies make lack of technological prowess a crucial problem. If a service is only produced by a few companies, every country that has a slight technological disadvantage will lose the entire market.

4 Philosophies and objectives

Before discussing trade policies, we attempt a generalisation of the philosophy and objectives that major economies have with regard to the digital economy. While this generalisation will certainly not reflect the diversity of opinions in the political debate in each economy, we believe it is informative as a model for our discussion. We focus on the US, the EU and China, which are not only the three largest economies but are also representative of three distinct points on the spectrum of digital policy[15]. When we discuss particular trade policy fields in section 5, we expand this discussion to other major EU trading partners.

At one end of the spectrum is the US, which has followed a *laissez-faire* approach and which has objectives in the digital area that are in particular concerned with supporting economic growth and maintaining technological leadership[16]. This implies that policies tend to be more accommodative of the interests of the highly competitive digital sector in the US. Privacy rules written into the e-commerce sections of US trade agreements are lax compared to European standards (we discuss this further in section 5.1). The high value assigned to freedom of speech in the US also informs its stance against regulating online platforms. US law gives social media platforms considerable freedom and legal protection in managing content on their platforms, an approach that has also entered into US trade agreements[17] [18]. The free flow of data and market access for US companies are key objectives of US digital trade policy. Protection of private data is secondary, and the US calls for privacy-related restrictions to be *'proportionate to the risks presented'*[19]. Artificial intelligence is seen as key technology, and therefore investment and research in this area are of strategic importance. The primacy of US technology in digital services is unquestionable. For example, all of the most used operating systems (Android, iOS, Linux, Windows, MacOS) are of American origin.

The EU, while generally supporting the US vision of a free internet with freedom of expression and free flow of data, has prioritised protection of personal rights to a much greater extent. The protection of personal data has the status of a fundamental right[20]. The GDPR has established a gold standard for privacy regulation, establishing data subject rights over their private data. It follows from this position that privacy is excluded from trade negotiations and is dealt with in unilateral adequacy decisions. Freedom of speech is not as absolute a value in the EU as in the US, and personal rights and concerns about hate speech are high on the policy agenda[21]. Similar to privacy protection, there is now a plan to

[15] For a comparison of EU, US, and Chinese digital trade policy see also Hufbauer and Lu (2019).
[16] According to OECD (2017, p. 34), the US is the only country without a national digital strategy and which takes a *'decentralised, market-driven approach to its digital strategy'*.
[17] The platform providers are protected by the First Amendment in 'editorial' decisions over content, while being protected from liability in relation to non-free-speech-related content decisions by Section 230 of the Communications Decency Act, 47 U.S.C. § 230. On side of the users, the First Amendment provides protection against state action restrictions on free speech, but not corporate action. See Brannon (2018).
[18] Both the USMCA (Article 19.17 of the Agreement between the United States of America, the United Mexican States, and Canada) and the 2019 US Japan Trade Agreement (Article 18 of the Agreement between the United States and Japan concerning Digital Trade) contain sections on *'Interactive Computer Services'*, mimicking language from Section 230 of the Communications Decency Act, 47 U.S.C. § 230.
[19] From the proposal by the United States for a WTO Agreement on Digital Trade (April 2019).
[20] Charter of Fundamental Rights of the European Union, Art. 8.
[21] See the French international digital strategy (Le ministère de l'Europe et des Affaires étrangères, 2017).

develop regulation for algorithms ('human centric AI'[22]) and to regulate digital services platforms. While the EU is not very competitive in digital services, digital technologies are seen as a way to maintain competitiveness in particular in manufacturing, and as a way to support SMEs (BMWi, 2020). Industry 4.0, or the usage of digital technologies to improve manufacturing productivity, is seen as an area in which US primacy is not yet established and where Europe can use its manufacturing prowess to develop digital platforms.

Access to information has often been reported as concern when it comes to digital policy in China. The Chinese internet has been separated from the global internet since its inception in 1994, and for Chinese users many Western webpages and digital services are blocked or censored. This is often referred to as the Great Firewall[23]. The Chinese government exerts political control over the information available to its citizens and requires social media companies to censor messaging services and online platforms. Self-censorship by users is enforced through the threat of draconian penalties, including long prison sentences (Freedom House, 2019). However, some political discussions at the local level or in small private groups are tolerated, as long as they are not perceived to be a political threat to the Chinese Communist Party (Stockmann, 2014, chapter 6). The State Security Law of 1993 gives the government access to data collected by private enterprises. However, there are attempts to limit companies' use of private data. Chinese companies have benefited from a large market closed to international competition and have developed a range of services. While initially copying their international siblings, these companies have developed into innovative digital giants in their own right. However, while the closed nature of the Chinese digital services market has effectively protected the industry in its infancy, now in adulthood it is an impediment to international expansion (Ferracane and Lee-Makiyama, 2017).

5 Digital trade policy

In this section, we discuss the policies and strategies that affect digital services and the free flow of data, employed by the different major economies. We first focus on privacy and measures of market openness to digital services, and then briefly on artificial intelligence and digital tariffs and taxation. While this is certainly not comprehensive coverage of digital trade policy topics, we believe that our focus on these particular topics is warranted by their importance for the geopolitical discussion on data flows and digital trade.

5.1 Privacy

As noted in section 4, the three largest economies have very different approaches when it comes to control over data. The EU has declared the protection of privacy a fundamental right and as such it is not negotiable in trade agreements. It does not trade-off privacy against commercial and economic interests. In particular the GDPR, the EU's headline privacy regulation, gives individuals wide-ranging rights over how their private data is gathered, stored and processed. Data portability, consent and the right to erasure are key parts of the legislation. Companies collecting and processing private data must ensure that contracting partners also comply with the same standard. For countries that have similar privacy protections, the European Commission issues adequacy decisions, which allow transfers of data as within the EU. For countries without adequacy decisions, transfers of personal data must be governed by Standard Contractual Clauses, which are contingent on the non-EU contract partner's ability to provide an equivalent level of privacy protection, or a limited number of other mechanisms (Marcus, 2020).

[22] See 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Building Trust in Human Centric Artificial Intelligence'; COM(2019)168.
[23] Strictly speaking the Great Firewall refers to the blocking of foreign webpages, whereas the censorship of Chinese social media is a different matter.

So far, the US has no comparable privacy law at federal level. Internationally, the US has tried to push an alternative arrangement, Cross-Border Privacy Rules (CBPR) system, developed under the umbrella of the Asian-Pacific Economic Cooperation (APEC). This is included as a basis for data transfer in the US-Mexico-Canada (USMCA) agreement and the 2019 US-Japan trade agreement. The CBPR is only a set of principles and as such provides much weaker legal protection than GDPR (Gribakov, 2019a). It is a minimum standard and allows signatory jurisdictions to implement stricter laws. Thus, CBPR compliance does not mean that a company can freely transfer data between CBPR member economies, as stricter laws might still apply. So far, the CBPR has largely failed to live up to its ambitions. Of the 21 APEC members, only eight have signed the CBPR, and just 35 companies have certified at time of writing[24].

However, recently there has been a shift in some US states, with California in particular passing the California Consumer Privacy Act in 2018, which is partly based on the GDPR. While this law is generally weaker than its European equivalent, for the first time there are signification restrictions on companies' usage of data in US[25]. However, the California law could be overruled or replaced by federal legislation. Because of the importance of trade in services between the EU and the US, the European Commission and the US government have twice tried to establish a framework that would allow companies to transfer data to the US under a regime similar to an EU adequacy decision. Under the EU-US Safe Harbor, from 2000, and the Privacy Shield from 2016, US companies could self-certify as compliant and be treated by European companies as safe data controllers and processors. However, both agreements have been invalidated by the EU Court of Justice because of the lack of legal protection for EU citizens' data against US government surveillance[26] [27].

When discussing privacy of personal data in China, it is important to distinguish between consumer privacy in relation to companies and privacy protection against the government. The Chinese government has introduced laws to protect consumer rights against private companies (Sacks, 2018a). However, the Chinese government has access to all data gathered by companies operating in China. It also requires companies that operate within China to store this data locally. The development of social credit scores that combine traditional credit scores with punishments for fraud (and increasingly infractions like traffic violations) has led to fears that this system could be extended to include online behaviour and evolve into a tool for totalitarian control[28].

Other authoritarian governments are trying to replicate the Chinese approach[29]. Russia and Turkey require personal data to be stored locally and limit the usage of encryption[30]. In 2019, Russia passed the Sovereign Internet Law that aims to increase Russian control over the internet and that could be a first step towards a separation of the Russian digital sphere (Epifanova, 2020).

Other emerging markets are closer to the European model. The Indian Supreme Court declared privacy a fundamental right in 2017 (though the implications of this in particular for digital platforms are yet unclear)[31]. In 2019, India introduced privacy legislation inspired by the GDPR and, according to media

[24] See http://cbprs.org/compliance-directory/cbpr-system/.
[25] See Gribakov (2019b) for a discussion on the Californian law and its relationship to the GDPR.
[26] See the judgment in Case C-362/14, Maximillian Schrems v Data Protection Commissioner, and the judgment in Case C-311/18, Data Protection Commissioner v Facebook Ireland and Maximillian Schrems (also referred to as Schrems I and Schrems II).
[27] For a discussion see Marcus (2020).
[28] As of yet this is not the case; see Horsley (2018).
[29] See for instance Meserole and Polyakove (2019).
[30] See USTR (2020, p. 428-429 & p. 488-489).
[31] See https://www.cfr.org/blog/implications-indias-right-privacy-decision.

reports, India is seeking an EU adequacy decision[32]. As a reaction to a military confrontation with China, India has banned 59 Chinese apps, with privacy of Indian citizens as the justification[33].

The GDPR is an example of the 'Brussels effect', i.e. the EU's ability as the largest market in the world to set international standards through precedent. A number of countries have adopted similar laws. The EU has taken adequacy decisions for eight countries: Andorra, Argentina, Canada, Israel, Japan, New Zealand, Switzerland and Uruguay. The European Commission is currently evaluating adequacy decision for South Korea and the UK. The California Consumer Privacy Act, while much weaker than the GDPR, has clearly followed the path forged by the European law. Even China, notorious for government censorship and surveillance, has a privacy standard for the protection of citizens' data against misuse by private companies partly based on the GDPR[34]. The GDPR is applying to EU citizens globally, an example of the extraterritoriality that is sometimes applied to regulate digital services effectively. However, as we will discuss, to protect data, it is not enough to provide protection against privacy infractions by private companies.

5.2 Market openness to digital services

Trade in digital services is restricted by two types of regulation: regulation that impedes digital trade in itself, such as localisation requirements, and regulation that restricts trade in services at sectoral level, such as professional licensing. We look at both using service trade restriction indices from the OECD and the World Bank. We focus on the G20 countries because the EU's most important trading partners for digital services outside of the European Single Market are, with the exception of Singapore, all G20 members (Figure 5)[35].

The OECD aggregates the restrictions that countries impose on digital trade in services in its *Digital Service Trade Restrictiveness Index* (Digital STRI). Based on the laws in different jurisdictions, it assigns each country an index between 0 and 1, with 0 being most open and 1 most restrictive. Figure 9 shows the 2019 values for the Digital STRI for G20 countries.[36] The most significant restriction on digital services trade is 'Infrastructure and connectivity', a category that includes localisation requirements. While the most important trade restrictions are from this category, restrictions on electronic transactions and payment systems are also common.

According to this index, the EU is among the economies most open to digital services trade, with an average value of 0.14. The US, with an index of 0.08, is even more open.

[32] Reported by *The Economic Times* on 30 June 2019; see https://economictimes.indiatimes.com/tech/internet/govt-to-ping-eu-to-align-its-data-law-with-gdpr/articleshow/70442538.cms.

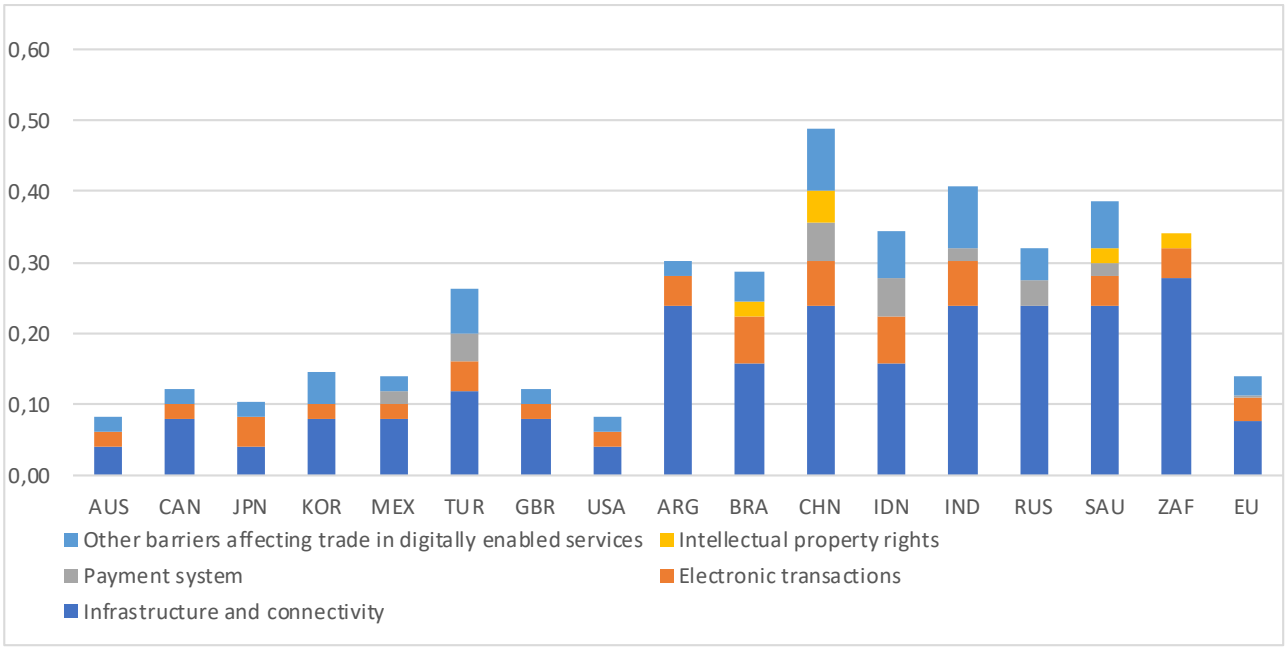
[33] See Ministry of Electronics & IT press release from 29 June 2020 (Release ID: 1635206); https://pib.gov.in/PressReleasePage.aspx?PRID=1635206.

[34] Sacks (2018b) goes as far as to argue that 'China and the European Union are moving forward with establishing data regimes that have more in common with each other than with that of the United States'.

[35] The European single market consists of the EU, Switzerland and the non-EU members of the European Economic Area (Iceland, Liechtenstein and Norway). The UK is for the duration of the Brexit transition period also member of the European single market.

[36] The EU value reflects the simple cross-country average of the 22 EU countries covered in this database.

Figure 9: Digital Services Trade Restriction Index



Source: OECD. Infrastructure and connectivity include most types of data localisation requirements.

China is the most restrictive country, with major barriers in all categories. When comparing the index values from 2019 to when it was first constructed in 2014, Turkey stands out for having become much more restrictive. Russia, Saudi Arabia, Brazil and South Korea have also become significantly more restrictive (though South Korea started from a low level). Mexico stands out for having liberalised the most in this period (see also Ferencz, 2019).

The OECD also provides estimates of the relative similarity of digital services regulation through the Digital STRI Heterogeneity Index. This provides an assessment of bilateral compatibility of regulatory regimes covering digital trade. Table 1 shows the heterogeneity index values for G20 countries relative to the EU, the US and China, with lower values signifying greater correspondence of digital service regulation [37]. While the US is generally more open to services trade, the EU is more compatible with most G20 members on a country-by-country basis. In particular, the EU has lower scores than the US in relation to countries with high levels of privacy protection, including South Korea and Japan. China has generally very high scores (indicating non-similarity) relative to all G20 countries except Saudi Arabia and Indonesia.

Table 1: OECD Service Trade Restrictiveness Heterogeneity Index 2019

	EU	*US*	*China*	*Argentina*	*Australia*	*Brazil*	*Canada*	*India*	*Indonesia*	*Japan*	*Mexico*	*Russia*	*Saudi Arabia*	*South Africa*	*South Korea*	*Turkey*	*UK*
EU		0.25	0.5	0.24	0.06	0.28	0.14	0.3	0.34	0.07	0.14	0.27	0.35	0.2	0.16	0.21	0.07
US	0.25		0.55	0.18	0.20	0.32	0.12	0.42	0.38	0.22	0.22	0.36	0.39	0.3	0.26	0.42	0.24
China	0.50	0.55		0.73	0.51	0.34	0.51	0.37	0.21	0.49	0.41	0.39	0.20	0.52	0.45	0.45	0.55

[37] The EU value reflects the simple cross-country average of the 22 EU countries covered in this database.

COVID-19 has made it necessary where possible to trade services without parties being physically presence. It has also shown the potential of digital technologies for direct trade across borders without commercial presence or indeed the presence of a person (mode 1 of trade in services). However, to harness this potential, the regulatory environment has to be conducive. Table 2 shows the World Bank *Services Trade Restrictions Index* for mode 1 and a number of services industries that have the potential for digital trade. The table displays the values for the EU and G20 countries for 2016[38]. The index evaluates restrictions on trade in services and generates a value between 0 and 100, a higher value indicating more restrictions. Except for reinsurance, financial services are quite closed for mode 1 trade in services in all G20 countries. Retail and professional services have fewer impediments to direct cross-country trade. The EU is generally much more open than China, and also more open than India. The US and Japan are by far the most open economies for these services sectors, with no restrictions on direct trade in professional services. The US also has no restrictions on retail services. South Africa is also very open, while Indonesia is almost completely closed to direct cross-country trade in services. It is important to note here that many of these services are regulated in the EU at the national level, which is also a significant challenge for intra-EU (digital) trade in services.

[38] The EU value reflects the simple cross-country average of the 22 EU countries covered in this database.

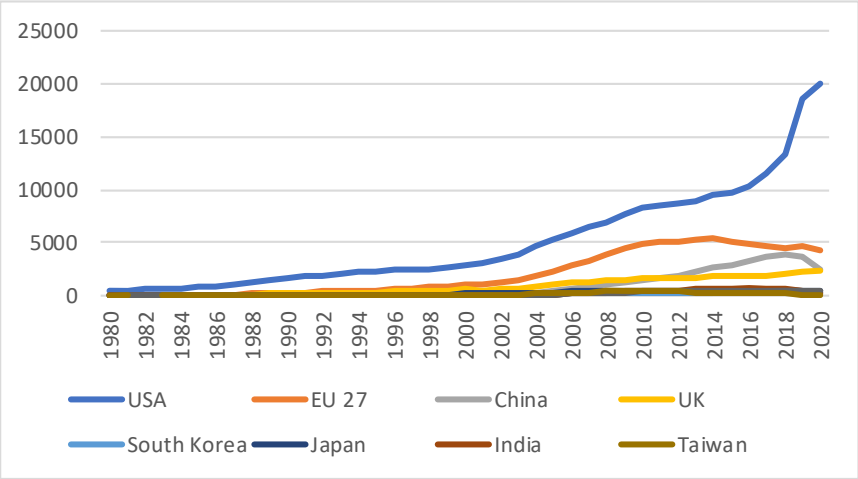
Table 2: World Bank Services Trade Restrictions Index (STRI) 2016 for Mode 1 trade in services

	EU	US	China	Argentina	Australia	Brazil	Canada	India	Indonesia	Japan	South Korea	Mexico	Russian	South Africa	UK
Professional Services															
Legal Services	42	0	26	32	26	100	25	100	100	0	25	26	26	13	32
Accounting Services	36	0	76	100	26	100	25	32	100	0	100	26	26	13	32
Auditing Services	51	0	76	100	26	100	25	32	100	0	100	26	26	13	32
Distribution Services															
Wholesale Trade Services	35	0	100	32	26	0	25	77	100	0	25	26	26	13	32
Retailing Services	35	0	100	32	26	0	25	100	100	25	25	26	26	13	32
Financial Services															
Life Insurance	70	100	100	100	100	100	100	100	76	100	25	100	100	100	77
Non-Life Insurance	68	76	76	37	76	75	76	78	76	76	77	100	76	100	77
Reinsurance	46	26	27	78	26	0	25	77	26	26	25	76	26	75	77
Commercial Banking	59	52	77	37	52	76	76	77	77	76	76	76	76	75	77

5.3 Artificial intelligence

A special area of digital regulation is the evolving field of artificial intelligence (AI). The term artificial intelligence is used to describe a wide range of different algorithmic methodologies. Because of advancements in computational power and in machine-learning methods in particular, such algorithms have proved very effective in a wide range of applications that were infeasible for computers just a few years ago. Some of these applications have implication for the political discourse and civil rights. Facial recognition is used for government surveillance, while deep fakes could appear in disinformation campaigns and the application of poorly understood algorithms for decision-making in sensitive areas can lead to discriminatory outcomes.

Figure 10: Top 10 % Scientific Journal Publications on 'AI' by country



Source: OECD.AI (2020).

Because of their versatility, algorithmic methods have also the potential to disrupt a large number of industries. A particular concern is that artificial intelligence methods could replace white-collar administrative jobs, similarly to the way automatisation has made many manufacturing jobs obsolete. In manufacturing, AI will mostly likely become increasingly important for maintaining a competitive edge. AI also has implications for competition policy. The dynamics that led to the monopolistic tendencies of digital platforms could be exacerbated in particular by data-intensive machine learning (Anderson, 2020a, 2020b). Finally, due to its military applications, AI is seen as strategic capability in the debate over the emergence of a *'technological cold war'* between the US and China (US Department of Defense, 2019; Segal, 2020).

The European Commission seeks to regulate automated decision-making based on the principle of 'human-centric AI'. This is based on seven key principles: human agency and oversight; technical robustness and safety; privacy and data governance; transparency; diversity, non-discrimination and fairness; societal and environmental well-being; and accountability[39]. The GDPR already includes a right not to be subjected to automated decision-making *'which produces legal effects concerning him or her or similarly significantly affects him or her'*[40]. However, there are concerns over a lack of expertise in this key technology. National AI strategies, such as those in France and Germany, emphasise (besides the need for ethical rules for AI) the necessity of strengthening relevant research in the EU (Bundesregierung, 2018; Villani, 2018). As Anderson *et al* (2020) have found, the EU is currently lagging behind in the training of new data and computer scientists working on AI-related topics. However, the picture is more encouraging when looking at high quality research output. Figure 10 shows in the production of high-quality scientific publications (top 10 % of scientific journal publications on AI as defined by OECD.AI, 2020), the US leads, while the EU is in second place, roughly on par with China. However, the US is the clear industry leader in terms of research output and US dominance is even more pronounced when looking at AI patents, with the top 10 % of AI patents almost exclusively originating in the US (OECD.AI, 2020)[41].

[39] See 'Building Trust in Human-Centric Artificial Intelligence', COM(2019)168, April 2019. See also https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines#Top

[40] Article 22, GDPR, Regulation (EU) 2016/679.

[41] Eligibility of software for patents differs significantly between the US and the EU, distorting these numbers to some extent.

5.4 Digital tariffs and taxation

Other highly-disputed aspects of digital trade are taxes and tariffs. With the inception of the World Trade Organisation work programme on e-commerce, a moratorium on tariffs on electronic transmissions has been introduced. This moratorium faces increasing resistance from India and South Africa in particular. Developing countries are losing out on revenues from tariffs on digital services such as movie streaming, which if delivered as physical goods would have faced tariffs. Banga (2019) estimated that these lost tariff revenues for developing countries amounted to USD 5.1 billion annually, however other estimates are significantly lower and it overall unclear if such tariff would be economically beneficial (Andrenelli and López González, 2019). At the same time, the practice of moving intangible capital to tax havens for tax avoidance is rampant in digital services. Following the financial crisis, the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) was set up to find a solution to the problem of corporate profit shifting. Attempts were made by France and other EU countries to resolve the issue unilaterally by introducing digital services taxes. These attempts were met with threats of trade sanctions by the US administration[42]. It should be noted, that EU countries are among the main destinations of tax avoidance schemes[43]. Tørsløv *et al* (2019) estimated that in 2017, EUR 126 billion in profits was shifted to Ireland, EUR 79 billion to the Netherlands and EUR 66 billion to Luxembourg, making Ireland in particular the world's primary location used for corporate tax avoidance. Ireland gains 67 % of its corporate tax revenues from profit shifted to Ireland, 9 % of global corporate tax revenue is lost through these schemes[44].

6 Geopolitical aspects of digital trade

The European Union is at the forefront of developing regulation that reconciles digital technologies with citizens' rights and consumer interests. The EU constitutes the largest market in the world, and this allows it to shape digital regulation. The EU also has the world's largest market share of services trade, and is a major global exporter of machinery and equipment, which increasingly relies on complementary services. However, the evidence assembled in this report also shows the significant difference between the EU's approach compared to its two largest trading partners. The US has followed a *laissez-faire* approach to digital services and its digital trade policy is aimed at protecting the interests of its highly competitive digital services sector. China, while developing privacy standards for corporations, exerts tight control over the content on its digital platforms and the government has access to all private data. This control over the digital realm is seen by the Chinese Communist Party as vital for China's economic and political future. As the regulatory regimes governing the flow of data and the scope of algorithmic decision-making mature, the differences between jurisdictions will become more apparent. As a result, there is the risk the internet will fracture into national spheres. Authoritarian regimes require data localisation for political control, while privacy-focused democratic governments require localisation to protect citizens' rights. Some ITC manufacturers already struggle in their attempts to manoeuvre between the US and China. The rules on privacy and surveillance in the EU and the US are diverging and this carries the potential for conflict over digital services between the world's two biggest economies.

The trend of 'nationalisation' and the fracturing of the global information network undermine the economic potential that is inherent in digital technologies. The potential of digital trade lies in the frictionless flow of data, information and thus services. However, to fulfil this potential, regulation and trade governance would have to be compatible. This applies not only to regulation of data flows and the

[42] See 'Notice of Determination and Request for Comments Concerning Action Pursuant to Section 301: France's Digital Services Tax', (Docket No. USTR–2019–0009), Federal Register/Vol. 84, No. 235/Friday, December 6, 2019/Notices, p. 66956-66959.
[43] For a discussion on Ireland's role in the tax avoidance schemes of digital companies, see Setser (2020).
[44] See https://missingprofits.world.

digital mode of delivery, but also to the regulations that govern specific service sectors that are traded through digital means. Given the current state of multilateralism and the very different visions of digital governance in the EU, the US and China, a wide-ranging agreement in the WTO e-commerce talks may seem unlikely in the short run. While progress on basic concepts and definitions and less controversial topics would certainly be welcome, and would have positive economic effects, it would not solve the problem of market fragmentation caused by incompatibility, in particular of privacy regimes. Because of the large divergences in the interests of the largest economies, the most critical aspects of digital trade – privacy, platform economies, and localisation requirements – are unlikely to be resolved multilaterally or even plurilaterally.

Given the risk posed by surveillance and by violations of privacy by hostile (and allied) foreign governments, open economies must weigh the benefits of the free flow of data against the costs in terms of civil liberties. We think that the EU, with its strong principled stance on privacy, has made a clear statement in favour of prioritising the latter (affirmed most recently by the EU Court of Justice Schrems II ruling). Given this stance, the EU must develop a trade policy that harnesses the opportunities of digital trade where possible without compromising citizens' rights. We make two sets of recommendations: how Europe can strengthen its comparative advantage in global markets for digital services, and how to proceed in terms of digital trade policy.

6.1 Strengthen the European digital economy

In contrast to the Chinese market for digital services, the European digital services sector has not been protected from US competition. While in China and the US, domestic companies are dominating the digital service market, in the EU large American multinational companies are the most important digital players. As we have seen from the example of artificial intelligence, while the EU is doing some world class research in digital technologies, it does not result in patents or in competitive digital companies. Figure 8 also suggested that Europe should integrate more foreign value added in its digital services exports. Specialisation in international trade is by no means new, and as Philippon (2019, chapter 13) has shown, the digital giants roaming Silicon Valley have an exceptionally small footprint in terms of employment. However, the lack of a genuine European digital sector is problematic given its strategic geopolitical and economic value, and also its increasing relevance for (high-end) manufacturing goods[45].

Silicon Valley, the epicentre of American digital technology, is a result of Cold War military investments into computer chips. Many of the companies that dominate digital services were born out the interaction between this industry cluster and the excellent research centres that are present in the area and across the US. These companies had the opportunity to grow quickly in the large American market (supported by venture capital) before expanding to the EU. In each of the factors that contributed to US success, the European digital sector is at a disadvantage. While there have been significant attempts to unify the European Digital Single Market, many of the services that could be traded digitally are still regulated at national level (Marcus *et al*, 2019). This limits the ability of European companies to grow to a scale that would allow them to compete internationally. Furthermore, Europe's capital markets are underdeveloped compared to the US, limiting the ability of venture capital to support start-ups (Bhatia *et al*, 2019). Finally, as discussed in Sections 3.1 and 5.4, European research in computer science lags far behind the US.

A number of policy recommendations for strengthening the digital sector in the EU follow directly from this. Completing the single market for digitally traded services would allow digital services companies to reach a larger market. This is especially important giving the large returns to scale and monopolistic

[45] For a discussion see Leonhard *et al* (2019).

tendencies in many digital services. Second, venture capital plays an important role in financing risky new digital technologies. Completing the capital markets union would help create a vital European venture capital scene. Finally, investment into digital technologies R&D is essential. The development of technologies that are important for the European digital agenda but are not prioritised by the US, such as human-centric AI, should be prioritised by European research funds. Each of these policies is worth pursing in its own right, but is also crucial for Europe to catch up with the US in this strategic industry.

6.2 Trade policy and geopolitical challenges

The digital sphere is increasingly becoming a stage for geopolitical conflicts, with disinformation campaigns targeting US and European elections, export and import restrictions on information and communication technologies, digital technologies used as a tool in the US-China trade war and cyber-attacks threatening financial and political institutions (Demertzis and Wolff, 2019). The reduced importance of physical distance as a factor in cyber security means that remoteness between strategic rivals is no longer a guarantee against conflict.

As a response to the territorial mobility of data, a number of potentially conflicting regulations with extraterritorial scope have emerged. The examples of the US CLOUD Act and the GDPR show the potential for incompatibilities in such laws. The US CLOUD Act obliges US companies to hand over data stored outside the US to US law enforcement agencies, an action that could violate the GDPR[46]. While the large fines for violations of the GDPR might protect against data misuse by private companies, they do not protect the privacy of European citizens against surveillance by foreign governments. To do that effectively, regulation has to be accompanied by strong cybersecurity policy and should be complemented with encryption where possible.

Given these difficulties, the free flow of private data will only be limited to likeminded countries with equivalent privacy regulation, reducing the scope for trade in digital services. However, there are already several large and diverse economies with strong privacy protection, including Japan, South Korea, and recently India, which could form a 'privacy-focused' digital sphere. After Schrems II, an operational data transfer regime with the EU's most important trading partner depends on US policy to provide guarantees against government surveillance. The free flow of private data between China and the EU seems out of the question given Chinese government surveillance and Chinese efforts to protect their market and control the information available for citizens.

Greater potential for free flow of data lies in the area of industry 4.0. As a strong and open manufacturing economy, the EU is well positioned to gain from digital technologies in managing supply chains. The main challenge in this area is intellectual property protection. Forced technology transfers and industrial espionage are impediments to the free flow of industrial data between the EU and China in particular. The EU should work towards resolving these issues with China.

At the same time, the threat of premature deindustrialisation is a significant challenge for developing economies (Rodrik, 2016). Digital technologies could boost trade in services and could help countries develop at a time when the opportunities for development through export-oriented manufacturing are becoming more limited. Similar to the way in which trade in goods allowed for the locating of low-skilled manufacturing to developing economies, digital trade could enable the outsourcing of low-skilled services. This presents a tremendous opportunity for countries that are well positioned in digital trade.

[46] See annex to the 'EDPB-EDPS Joint Response to the LIBE Committee on the impact of the US Cloud Act on the European legal framework for personal data protection', from July 2019: https://edpb.europa.eu/our-work-tools/our-documents/letters/edpb-edps-joint-response-libe-committee-impact-us-cloud-act_en.

Integrating developing economies into their digital value chains could also increase the competitiveness of European companies.

The EU should offer an alternative to the Chinese Belt and Road Initiative. The threat posed by digital services and the use of infrastructure a geopolitical tool is much greater for developing countries that lack security expertise and economic clout, than it is for the EU. A further deepening of trade in services could also open up new markets for European digital companies. Commercial interests are here aligned with support for free exchange of information and support for democratic institutions. The immense efforts by the Chinese Communist Party to control the Chinese internet are evidence of the power of free access to information. The EU should support initiatives that bring internet access to developing countries and support civil society organisations that fight for freedom of information.

COVID-19 and the upcoming American elections both introduce uncertainty about the future strategy of American trade and digital policy. California's new privacy laws mark a significant departure at the state level from the current *laissez-faire* philosophy with regard to personal privacy. Whether this push for more privacy will be overruled by a federal law or has the chance of being adopted at federal level remains to be seen. The same is true of US willingness to concede legal guarantees against government surveillance of European citizens. If re-elected, President Trump would likely proceed with a US-China decoupling strategy and an agenda of managed trade. In that case we would not expect a solution to the problem of the EU-US flow of private data. Secondary sanctions could make digital trade with China even more difficult for European companies. A President Biden would likely be much more accommodative to European interests, even though he has also expressed a hawkish attitude towards China (Biden, 2020).

7 Conclusions

While the EU is currently not at the forefront of developing new digital technologies (see Figure 7), European companies are taking advantage of the opportunities of the services provided by foreign technologies. The EU has developed a privacy framework that is based on fundamental principles. The GDPR is the gold standard in terms of privacy regulation. A number of similar regulations around the world have emerged. Now the EU is trying to replicate this 'Brussels effect' with the regulation of algorithms and the Digital Services Act. However, given the economic and geopolitical importance of digital technologies, the EU should aim to also strengthen its digital sector.

There are three fundamental questions the EU must answer for its future digital trade policy: the extent to which the EU itself wants to be a producer of digital services, how to promote European values and interests in the global digital economy, and how to interact with other economies with conflicting approaches to digital policy. The road to competitiveness in digital products is strongly interlinked with completing the single market with respect to capital and services, and requires investment in research and development. Promoting European values and interests in the digital economy will need cooperation with likeminded allies, and support for an open internet and free access to information in developing countries. The internet is a tool for authoritarian regimes and democratic movements alike, and digital trade will be essential for economic development in the age of premature deindustrialisation. Finally, while there might be some potential for a shift in the US position on privacy regulation, we should not expect full convergence with European standards or respect for the civil rights of European citizens by US security agencies. The case is even clearer with regard to countries like China and Russia. Safeguarding citizens' rights will therefore require limiting the free flow of private data. Harnessing the potential of digital trade and building a European digital services sector around these constraints is the big challenge for European digital trade policy.

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PE 653.616
EP/EXPO/INTA/FWC/2019-01/LOT5/1/C/05

Print ISBN: 978-92-846-7440-4 doi: 10.2861/318312 QA-02-20-909-EN-C
PDF ISBN: 978-92-846-7439-8 doi: 10.2861/98661 QA-02-20-909-EN-N