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RESEARCH ARTICLE

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Convergent antitrust regulation of the digital economy in China, the European Union and the United States: mirror of an intensifying geopolitical competition

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Abstract

China, the European Union, and the United States are the three largest digital economies in the world. This article compares the antitrust regulation of the digital economy in the three regions after the 2000s. It argues that over time, the antitrust regulation of the digital economy in the three regions tends to converge along three dimensions: growing separation of the antitrust regulation of the digital economy from that of the other economic sectors, convergence of regulatory objectives, and convergence of regulatory methods. In combination with the geopoliticization of the platform economy, this article argues that four factors have contributed to shape such convergence: (1) historical factors, (2) globalization of the digital economy, (3) increasing policy imitation and policy competition among the major digital powers of the world, (4) support from the civil society.

Keywords: Digital economy, Antitrust regulation, Convergence, Geopolitical competition

Introduction

Van Dijck and co-authors (2018) pointed out that the current platform ecosystem, into which the commercial values are ingrained, is gnawing the public values, at least in Europe and North America, two regions studied in their seminal book *Platform Society*. With the privatization of the public services like education and healthcare, digital platforms are outsourcing the decision-making to algorithms and machines, stripping citizens away the control over their existences in the digital world (van Dijck et al. 2018). Van Dijck et al. identify two types of platforms: sectoral and infrastructural (2018, 12–13). Different from sectoral platforms, infrastructural platforms are the principal shapers of the platform society: “they form the heart of the ecosystem upon which many other platforms and apps can be built. They also serve as online gatekeepers through which data flows are managed, processed, stored, and channeled” (van Dijck et al. 2018, 13). The influence of infrastructural platforms goes beyond the economic sphere to cover the political, social and normative spheres. In the political sphere, for instance, the

global platform ecosystem risks undermining institutions' status as independent providers of common knowledge and public services (van Dijck et al. 2018, 154). As the constitution in the economic sphere, the competition law aims to ensure democracy of the economic life, both in the pre-digital and the digital eras (Khan 2017). Competition laws are indispensable for anchoring trust and accountability in the platform society.

China, the EU and the USA are currently the three largest digital economies in the world. In 2021, the size of the Chinese and the American digital economies respectively reached 6500 billion (Thomala 2023) and 2400 billion dollars (Clement 2022). In 2018, the size of the European digital economy reached 3000 billion euros. On 19 February 2020, the EU issued *A European Strategy for Data* in which it fixed the objective to increase the size of the European digital economy to 8290 billion euros by 2025 (CECC 2021). Given the vast size of their digital economy, the way in which China, the USA and the EU enforce the antitrust regulation of the tech giants deserves attention. The reason is that it inevitably produces signaling effects on the other digital economies of the world, helping them fine-tune their own antitrust regulation and reduce the costs generated by the learning process.

Long before the dawn of the digital economy, the USA and the EU actively sought to shape Chinese competition policies (Zheng 2010). Chinese lawmakers adopted the first Anti-Monopoly Law (AML) in August 2007, which took effect in August 2008. The Chinese AML is largely the "legal transplant" of the European and American competition laws (Zheng, 2010). The stipulations on firms' abuse of the dominant position provide a telling example. The competition laws in all the three regions emphasize the fight against firms' exclusionary abuses, rather than exploitative abuses (Zheng 2010, 648). What results from such imbalance is that firms have been better protected than consumers against large firms' anticompetitive practices. When the latter damage consumers' interests, competition authorities in the three regions prefer not to intervene directly. Instead, they let other agencies or courts lead the dance of the consumer protection (Tang 2022). The convergence in the competition policies of the three regions in the pre-digital era is well-known (Zheng, 2010). Does such regulatory convergence exist in the digital era, too? If yes, what are the factors behind such convergence? This article revolves around these two interrelated questions.

Research design

This article uses content analysis and interviews to comparatively study the convergence of the antitrust regulation of the digital economy in China, the USA, and the EU. First, I collected all the competition laws and policies that the three regions adopted after 1890. I take 1890 as the starting point, because it is in that year that the USA adopted the Sherman Antitrust Act (SAA), widely recognized as the first antitrust legislation in the world. To ensure comparability, I collected 55 documents released by the legislators and regulators at the national, federal and European level respectively in China, the USA, and the EU. After carefully reading and comparing these documents, I established the regulation priorities and methods in the three regions.

Between October 2023 and January 2024, I conducted 22 semi-structured interviews with 10 lawyers and 12 scholars working on the antitrust issues in Beijing and Shanghai. Each interview lasted between 1 and 2 hours. All interviewed scholars had

extensive knowledge on the enforcement of the antitrust regulation in China, the EU and the USA. The choice of lawyers is based on their expertise: while 5 of them handled the antitrust lawsuits involving Chinese tech firms only, the other 5 were directly or indirectly involved into the antitrust cases concerning American or European tech firms. The interview data are then named according to the following rules: “B” and “S” respectively represent Beijing and Shanghai; they are then followed by the date of interview. For instance, “B20240113” means that the interview is conducted on 13 January 2024 in Beijing. I use the interviewee’s profession and family name to designate him/her, for instance “Lawyer Wang”. All interviewees were informed of the objectives of the research. They agreed that the interview data are used in this article. Their personal information was anonymized to prevent them from being identified.

Three-dimensional convergence of the antitrust regulation

At the tone-setting Central Economic Work Conference in Beijing in December 2020, the Party leadership required that the intensification of the antitrust regulation and the prevention of the disorderly capital expansion be priority tasks of the economic regulation for 2021. Therefore, Chinese academia and media alike generally took 2021 as the year zero of the Chinese antitrust regulation of the digital economy. In that year, Chinese competition authorities invited 39 tech firms to talks, sanctioned 9 firms, and inflicted nearly 20 billion yuan of administrative fines (Weng 2021). However, the antitrust regulation of internet firms appeared well before 2021.

In the USA, the Department of Justice (DoJ) and 20 attorneys general of different states filed lawsuits against Microsoft in 1998 for having bundled additional programs into its operating systems. Microsoft was defeated. In the EU, the European Commission inflicted a record-high fine of 1.06 billion euros to Intel in 2009 due to Intel’s abuse of the dominant position in the market of chips. In 2010, Tencent and Qihu 360, respectively specializing in instant messaging and cybersecurity software, launched what was called the “3Q War” (QQ of Tencent and Qihu of 360 Group). It is the first antitrust lawsuit in the Chinese internet economy and ended up with Qihu 360’s failure. Given the newness of this case, the Supreme People’s Court ruled that the method it used for identifying the relevant market should be used with caution in subsequent lawsuits.¹

The antitrust regulation of the digital economy after 2020, however, takes on new features when compared with sporadic antitrust cases before 2020. One of the new features is that, after successive amendments, the antitrust regulation framework after 2020 becomes more adapted to the characteristics of the digital economy. Weng Xi, Professor at Peking University, highlighted that the network effect is the characteristics that mostly distinguishes the digital economy from the real economy, for it sustains the “winner-takes-all” logic of the digital economy (Weng 2021). The antitrust policies that China, the EU, and the USA have adopted after 2020 have all more or less addressed the “network effects” of the infrastructural platforms. For this reason, this article mainly studies the antitrust regulation of the digital economy after 2020.

¹ B20240304, Lawyer Wang.

Based on the content analysis of 55 laws and statutes that China, the USA, and the EU have released before and after the dawn of the digital economy, this section compares the convergence of the antitrust regulation of the three regions in three dimensions: (1) growing separation of the antitrust regulation of the digital economy from the antitrust regulation in the other economic fields, (2) convergence of the regulatory objectives, (3) convergence of the regulatory methods.

Growing separation of the antitrust regulation of the digital economy from the antitrust regulation of brick-and-mortar economy

The anticompetitive practices in the digital economy differ from those in the real economy (Sun 2021; Zhang and Luan 2021). They demonstrate several new characteristics: data as the central element underpinning firms' competitiveness, algorithms as the principal instruments via which firms form and exercise their dominant power, and platforms as the main battlefield of the competition (Yang 2020). Platforms constitute bilateral or multi-sided markets. The monopolistic practices of digital platforms produce their influence simultaneously on several markets, making it difficult to ascertain the boundaries of the relevant market (Sun 2021). Unlike the single-sided market, on the two-sided or multi-sided markets, it is only when the number of users on one market side increases that the wellbeing of the users on the other market side grows (Cardon 2019, 305). Platforms are both market players and marketplaces. Therefore, the coercive effects that the anticompetitive practices of large platforms produce over small firms are not always discernible in practice (Sun 2021, 104). While the conventional antitrust regulation framework mainly addresses vertical and horizontal monopoly agreements, the digital economy causes "hub-and-spoke agreements" (Sun 2021, 120). The latter denote a triangular scheme where competing undertakings (namely "spokes") reach horizontal monopoly agreements through a third-party operating at a different level of the supply chain (namely the "hub"). In the brick-and-mortar economy, trade unions occupy the privileged position for organizing the agreements between collusive firms. In the digital economy, the role of "hub" is played out by infrastructural platforms.

China

China, the USA, and the EU have updated their existing antitrust regulation framework to get it adapted for addressing the new challenges brought about by the digital economy. In the course of rolling out new antitrust rules or amending the existing ones, the three regions *de facto* turn the antitrust regulation of the digital economy into a separate regulatory realm from the antitrust regulation of the brick-and-mortar economy. According to Chinese scholars who participated in the amendment to the AML in 2022, that amendment was largely motivated by the necessity of getting the old regulation framework adapted to the digital economy.² Article 9 of the 2022 AML stipulates that firms are prohibited from exploiting their advantages in data, algorithms, technologies, capital and platform rules to undertake anticompetitive practices. Inscribed to the section of "General Provisions," article 9 holds binding effects on the whole AML. It becomes the

² Interview B20240126, Scholar Han.

legal basis for fighting large platforms' diverse anticompetitive practices (e.g., algorithmic collusion, self-preferencing, big data-enabled pricing discrimination against existing customers).

The new antitrust regulation framework introduces the rules for addressing "hub-and-spoke agreements" that prevail in the digital economy. In China, the term "hub-and-spoke agreements" was first used by the State Council Antimonopoly Commission on 7 February 2021 in the *Anti-Monopoly Guidelines in the Platform Economy* (hereafter "The Guidelines"). The Guidelines highlighted that competitors using the same platform may enter into a hub-and-spoke agreement that produces the effect of a horizontal monopoly agreement. Competing undertakings can do so either by using their vertical relations with the platform operator or under the organization and coordination of the platform operator (Wei et al. 2023). The 2022 AML of China addresses the issue of hub-and-spoke agreements. Article 19 prohibits any undertaking from organizing other undertakings to reach a monopoly agreement or offering substantive assistance to other undertakings in reaching such agreements. It represents an important progress, because the 2007 AML, predecessor of the 2022 AML, only prohibited trade unions from organizing undertakings in the same industry to reach hub-and-spoke monopoly agreements.

The Guidelines take into account the two-sided and multi-sided market structure of the digital economy when defining the relevant market. They stipulate that the relevant market can be defined based on the services and products provided by one or two sides of the market. They require that the cross-platform network effects be taken into account when ascertaining the relevant market. They suggest that regulators pay attention to the facilitative role of technologies, algorithms, data, and platform rules in helping the conclusion of monopoly agreements. Regarding the concentration, the Guidelines clarify that the concentrations of the undertakings using the VIE structure must be approved by the market regulator beforehand. To repair damages, the Guidelines propose several remedies adapted to the digital economy: stripping data, opening data, modifying algorithms, to name only a few (Deng and Dai 2021).

European Union

Articles 85 and 86 of the Treaty of Rome are the earliest antitrust rules in the European Economic Community (EEC), predecessor of the EU from 1957 to 1993. The two articles introduced the criteria to measure whether firms' activities produced restrictive effects on the market competition. In December 2007, the EU adopted the Treaty on the Functioning of the European Union (TFEU). Articles 101 and 102 of the TFEU tackled the anticompetitive practices on the single market in a general, not sectoral way. They did not contain the provisions that specifically address the antitrust problems of the digital economy. In July 2022, after two years of intensive legislative battles between the EU and the member states, the EU adopted the Digital Markets Act (DMA), a legislation specifically intended to fight platforms' anticompetitive practices. Innovative regulation methods advanced by the DMA, embodied by the "gatekeepers", influence the elaboration of the antitrust rules in other regions of the world, including China and the USA. The adoption of the DMA marks that the antitrust regulation of the digital economy in

the EU has grown into a separate regulatory field from the antitrust regulation of the products-based real economy.

The United States

In 1890, the US Congress adopted the Sherman Antitrust Act (SAA). Although this legislation only contained 8 articles, it is a milestone in the world history of the antitrust regulation. The Act outlawed all combinations that restrained trade between states or with foreign nations. Such prohibition applied to formal cartels, any agreements to fix prices, limit industrial outputs, share markets, or exclude competition. This constituted the heart of the SAA. The latter is also the first antitrust legislation in the world that introduced the treble damages (Sun 2023, 77).

Given the new characteristics of the anticompetitive practices on the digital market, the American federal government has been designing a different antitrust regulation framework for the digital market after 2020. The Antitrust Subcommittee of the US Senate Judiciary Committee adopted the *Competition and Antitrust Law Enforcement Reform Act of 2021*. Its article (e)(7) in Sect. 26A regulates, among others, firms' exclusionary practices on multisided markets. In June 2021, the House Judiciary Committee, a standing committee of the US House of Representatives, approved six acts that specifically address the anticompetitive practices in the digital economy: the *State Antitrust Enforcement Venue Act* (H.R. 3860), the *Augmenting Compatibility and Competition by Enabling Service Switching Act* (H.R. 3849), the *Merger Filing Fee Modernization Act* (H.R. 3843), the *Platform Competition and Opportunity Act* (H.R. 3826), *Ending Platform Monopolies Act* (H.R. 3825), the *American Choice and Innovation Online Act* (H.R. 3816). The simultaneous adoption of the 6 bills is the most ambitious reform plan of the American antitrust regulation in the past decades (Sun 2023, 77). On 20 January 2022, the Antitrust Subcommittee of the US Senate approved the *American Choice and Innovation Online Act*, drawing the legislation one step further toward becoming a law in its own rights.

The six bills convey three messages. First, the American government attaches high importance to the antitrust regulation of the digital regulation, in contrast with its laissez-faire approach to the digital economy in the past three decades. Second, it is currently exploring new methods to handle the anticompetitive activities on the digital market. The released new rules are American regulators' attempts to inscribe the antitrust regulation of the digital economy into a separate regulation framework from that used for the antitrust regulation of the real economy.³ Third, as one interviewee correctly put it, "it is not a good idea to perceive the high frequency with which the American lawmakers roll out new rules as signaling the toughening up of the antitrust regulation. For they can be abandoned at one moment or another if their effectiveness cannot be proven. However, at least, the regulatory intensity shows that American regulators do consider the antitrust regulation of the digital economy as deserving a different regulation framework from the real economy".⁴

³ Interview B20240126, Scholar Han.

⁴ Interview B20240304, Lawyer Wang.

Besides the differences of political systems, China, the EU and the USA have been regulating their market actors differently: the USA practices neoliberal regulation, and China the market-institutional regulation. The situation in the EU is mixed: some member states (e.g., France and Germany) practice statist regulation, and others (e.g., Luxembourg, Ireland) neoliberal regulation (Yeo 2020). While the regulator-firm distance is the farthest within neoliberal regulation, it is the nearest within the market-institutional regulation (Ma 2024). Within the market-institutional regulation, regulators orchestrate the market competition, such that firms operating within economically strategies sectors are more likely to become national champions and to acquire international competitiveness. To reach this objective, regulators are highly present on the market, creating favorable conditions for national champions and ensuring that they are not swallowed in the market competition.

Despite their differences of political systems and market regulation traditions, nowadays, China, the EU and the USA all tend to consider the antitrust regulation on the digital market as something different from the antitrust regulation on the real economy. A sort of convergence thus appears in the antitrust regulation of the digital economy in China, the EU, and the USA. The convergence is embodied by the evolution of the American antitrust regulation framework. The regulation intensity of the aforementioned *Ending Platform Monopolies Act* is unprecedented. It prohibits large digital platforms from self-preferencing when indexing products and services. It also rules that antitrust regulators can require platforms to sell certain activities to eliminate their restrictive effects over market competition.

Convergence of regulatory objectives: maximization of consumers' welfare

Regarding regulatory objectives, China, the USA, and the EU converge in two dimensions. First, antitrust regulators in the three regions pursue multiple and competing objectives, and have to strike right balances between them. The pursuit of multiple objectives is inherent to the antitrust regulation of the brick-and-mortar economy as well as that of the digital economy (Khan 2017, 740). Second, while market efficiency continues to be an important goal for antitrust regulators, just as it was during the pre-digital age, anti-trust regulators are granting greater importance to maximize consumers' variety of interests. Instead of focusing exclusively on the pricing level and the outputs, antitrust regulators in the three regions increasingly adopt a broader understanding of consumers' interests, including, among others, consumers' access to a great range of high quality and innovative products.

It has been widely recognized that the antitrust regulation in general pursues multiple objectives (Sun 2023; Lande 1982): to increase market efficiency, to ensure balanced distribution of resources, to protect consumers' interests (Burgess 1997). The multiplicity of the sought-after objectives is also present in the antitrust regulation of the digital economy in China, the USA, and the EU. Compared with the real economy, the Mathew effect is more likely to appear in the digital economy (Ma 2023b, 1). The "winner-takes-all" phenomenon, caused by the network effects of the digital economy, is also more observable among internet firms than in the private firms operating in other economic sectors (Weng 2021). Backed up by performing algorithms and large quantities of collected data, tech firms self-reinforce their dominant position on the market

(Zhang and Luan 2021). The consequence is that tech giants can easily capture important profits without improving the quality of their services or products. These practices kill the enthusiasm of small and medium platforms in investing in technological innovation. They also reduce consumers' interests in the long term, for large platforms can well increase the price of their services once they become indispensable for consumers (Tang 2022; Khan 2017). The design of the antitrust regulation of the digital economy in China, the USA, and the EU takes these factors into account and pursues multiple regulation objectives. However, it is important to highlight the shifting importance of different regulatory goals in recent years in the antitrust regulation of the digital economy. While market efficiency continues to be an important goal, regulatory agencies in the three regions are granting higher importance to the protection of consumers' interests.

Article 1 of the 2022 AML of China considers that the objectives of the Chinese antitrust regulation are to protect fair competition on the market, encourage innovation, improve economic efficiency, preserve consumers' interests and public interests. This stipulation well illustrates the multiplicity of the objectives of the antitrust regulation. While improving economic efficiency continues to stand at the heart of the Chinese antitrust regulation (Meng 2022, 49), Chinese regulators are deploying greater endeavors to maximize consumers' wellbeing. Article 20 of the 2022 AML lays down the situations in which firms are exempted from sanctions when concluding monopolistic agreements. One of them is that "firms must prove that the concluded agreements do not significantly hinder the competition on the relevant market. They must also prove that such agreements generate benefits to consumers". Article 34 of the 2022 AML lists the situations where firms are exempted from sanctions when there are concentrations of undertakings. One of them is that "undertakings must prove that the concentration in question produces more benefits than hinderance on the market competition, or serves social and public interests". Articles 20 and 34 of the 2022 AML respectively match articles 15 and 28 of the 2007 AML. What is new with the 2022 AML is that it clarifies on the private enforcement of the competition law, providing affected citizens and businesses with more feasible means to defend their interests against large firms' predations. The emphasis on the private enforcement of the antitrust regulation is an important step toward balancing firm-citizen relations. I will return to this point later in this article.

The Digital Market Act (DMA) specifically addresses the anticompetitive behavior of digital platforms on the European single market. Article 5 highlights that the antitrust-related stipulations in the TFEU are not sufficiently adequate to regulate digital platforms, because the latter do not necessarily form any dominant position on the market if judged by the traditional competition law.

The DMA emphasizes the protection of consumers' interests. This is related to the entrenched influence of the Freiburg school on the European antitrust regulation. Born in the nineteenth century in Germany, the Freiburg school argued that although national governments should indeed reduce their intervention in the market, they must intervene when the market order is disturbed. Therefore, for a very long period of time, European market regulators put equal attention to protect the efficiency and fairness of the market competition. In this sense, the Freiburg school and the new Brandeis school in the USA share the commonality of emphasizing market fairness, in stark contrast with the

Chicago school which championed the market efficiency as the ultimate goal of the anti-trust regulation.

Article 1 of the DMA explains that its aim is to ensure “*the proper functioning of the internal market for intermediary services by setting out harmonized rules for a safe, predictable and trusted online environment that facilitates innovation and in which fundamental rights enshrined in the Charter, including the principle of consumer protection, are effectively protected*”. Paragraphs 3 and 4 of the general provisions of the DMA further highlight that large platforms’ capacity to control whole platform ecosystems in the digital economy frequently causes serious imbalances in bargaining power. They also lead to unfair practices and conditions for business users, as well as for end users of core platform services provided by gatekeepers. The emphasis on the interests of business users and end users illustrates the centrality of market fairness in the European antitrust regulation of the digital economy.

Like their Chinese and European counterparts, American antitrust regulators also pursue a multitude of objectives and grant increasing emphasis on protecting the interests of consumers who are by nature more vulnerable than firms in the digital economy (Tang 2022). In fact, the SAA embodied the pursuit of fairness rather than efficiency by the earliest antitrust regulators in the USA. The SAA resulted from the debate between two groups of political, economic, and academic elites in the US Congress. The first group, led by the Senator John Sherman of Ohio, highlighted the imperative need to fight the concentrations of large corporations. The second group, represented by the economist John Bates Clark, supported trusts, arguing that trusts were a boon for ensuring an efficient market. The second group was defeated in the Congress vote. The origins of the SAA in the USA showed that the American lawmakers granted higher importance to realize fair market competition than to realize efficient market competition. Nevertheless, with the rise of the Chicago school in the 1970s, efficiency replaced fairness to become the prime objective of the American antitrust regulators.

The aforementioned six bills approved in 2021 by the House Judiciary Committee specifically address the anticompetitive practices in the digital economy. In the USA, compared with the antitrust regulation of the real economy, the antitrust regulation of the digital economy provides better protection of consumers’ interests. Part of the reason lies in the fact that the takeoff of the digital economy coincides with the rise of the post-Chicago school and the new Brandeis school. The design and enforcement of the antitrust regulation in the USA has been closely influenced by economic theories: theoretical models and empirical testing methods provided by microeconomics are used for fine-tuning antitrust policies (Han and Zeng 2014). Economists, who frequently participate in antitrust lawsuits, provide useful suggestions for improving the design of the antitrust regulation policies (Kovacic and Shapiro 2000).

The post-Chicago school argued that the market itself cannot automatically redress its failure and that state intervention was necessary to restore full competition on the market (Hovenkamp 2001). It also advocated the fairness of the market competition and did not exclusively seek market efficiency (Eastman Kodak Co. v. Image Tech. Svcs in 1992). Likewise, the new Brandeis school studied the impact of firms’ behavior on preserving a democratic economic order: equal opportunities for all participants on the market, multiplicity of choices for consumers, necessity of splitting large undertakings if the latter’s

scale threatens market competition. The six bills of the House Judiciary Committee illustrate the incorporation of these ideas into the American antitrust regulation of the digital economy.

The *Ending Platform Monopolies Act* advances the concept of “covered platform”, an equivalent of “gatekeepers” in the DMA. It says that when the operator of a covered platform owns or controls other activities than the platform *per se* and that such activities produce conflicts of interests, the operator finds herself in violation of laws. It also stipulates that a platform must sell its subsidiary if the latter enables the platform to practice self-preferencing. *Augmenting Compatibility and Competition by Enabling Service Switching Act (ACCESS)* of 2021 requires to improve the interoperability and portability of users’ data: platforms must transfer users’ data to users themselves when required to do so. At the behest of the concerned users, platforms must also transfer users’ data to other business users, even if the latter are platforms’ competitors. The bills of the House Judiciary Committee will provide solid protections to consumers if they can become formal laws.

In the USA, the Congressmen from the Democratic Party and the Republican Party have held divergent opinions on the antitrust regulation of the real economy. Generally speaking, Democrats are more likely than Republicans to advocate public interests in the market regulation. For instance, it was during the administration of Reagan and Bush Sr., both Republicans, that the Chicago school became the theoretical foundation of the American antitrust regulation. Democrats and Republicans demonstrate greater consensus when it comes to fight tech giants’ monopolistic practices. On 29 July 2020, at the hearing organized by the Congress, Jeff Bezos, Mark Zuckerberg, Tim Cook, and Sandar Pichai were lambasted for nearly six hours by the Congressmen from both parties (Cheng 2020). Congressmen concluded that the answers of the four CEOs “were often evasive and non-responsive, raising fresh questions about whether they believe they are beyond the reach of democratic oversight” (House Judiciary Committee 2021, 6). They all agreed on the negative externalities of the monopolistic practices by tech giants, highlighting that “whether through self-preferencing, predatory pricing, or exclusionary conduct, the dominant platforms have exploited their power to become even more dominant” (House Judiciary Committee 2021, 6).

Despite observable convergence, several challenges facing American policymakers may hinder further convergence of the American antitrust regulation with the European and Chinese ones. Adopted regulations ultimately reflect the result of the bargaining and compromise between different regulators, or, in the cases where regulators reach consensus, different objectives. That firms (in particular small-sized and medium-sized) and citizens alike call for more forceful antitrust regulation of the digital economy has certainly allowed the American government to implement stricter regulations (Ma and Hu 2024). Nevertheless, it is possible that the Biden administration and his successor will avoid exerting excessive pressure over tech giants. Facing heightened global technological race and geopolitical competition, the American government needs tech giants to simultaneously reinforce its “hard power” and “soft power”. The Silicon Valley nowadays embodies the American image on the global stage as a pioneer in technological innovation. It can be inferred that American antitrust regulators will have to strike right balances between splitting super platforms, as the leading figures of the new Brandeis

school claimed (Khan 2017), and leveraging cutting-edge technologies for political and geopolitical purposes.

Convergence of regulatory methods

The convergence in the antitrust regulation of the digital economy in China, the USA, and the EU can also be seen in terms of regulatory methods. The fact that the three digital economies use similar regulatory methods conveys two messages. First, the newness of the anticompetitive practices in the digital economy causes uncertainty to the antitrust regulators of the three selected regions. For this reason, regulatory bodies learn from each other to reduce the costs generated by the trial-and-error process. Second, anticompetitive practices of large digital platforms have produced more or less similar challenges to national governments. Therefore, it is possible for the latter to adopt similar antitrust regulation policies.

Combination between *ex ante* regulation and *ex post* regulation

The antitrust regulation in China, the USA, and the EU has, for a very long period of time, relied on the *ex post* regulation. The latter's advantage lies in the proportionality between firms' wrongdoing activities and the inflicted sanctions, because regulators have the time to decide the severity of the related transgression. However, the *ex post* regulation is not perfectly adapted to modify market actors' behavior. For two reasons. First, the control that large platforms exert over small and medium platforms can be very strong, because the latter must rely on the former to make profits. This feature distinguishes the multi-sided market from the single-sided market. For instance, in the petroleum sector, small petroleum companies can directly reach end users without the intermediary of large companies like Exxon Mobil.

Second, backed by their advantages in the development of performing algorithms and the collection of large quantities of data, large platforms can very well produce irreversible impact on the market competition. Large platforms' killer acquisition produces irremediable impact over small platforms' growing opportunities. Given the delay of the *ex post* regulation in addressing firms' anticompetitive practices, this regulation method is not timely enough to "nip the bud of the evil". Instead, the *ex ante* regulation is more agile in preventing large tech firms from hindering market competition in an irremediable manner. According to a digital platform' turnover, market capitalization, market shares, and its capacity to restrict market competition, antitrust regulators can practice differentiated regulation of platforms from the outset by stipulating different sets of obligations to platforms. These measures are expected to save regulatory costs.

Before the arrival of the digital economy, the EU introduced the *ex ante* regulation of private undertakings by classifying firms into different categories based on certain qualitative and quantitative indicators. However, this method was more frequently mobilized for controlling M&A than for regulating cartels and firms' abuses of the dominant market position. In October 2008, the EU released the "Guidelines on the assessment of non-horizontal mergers". Article 25 of this document stipulates that the European Commission is normally unlikely to find concern in non-horizontal mergers, be it of a coordinated or of a non-coordinated nature, where the market share post-merger of the new entity in each of the markets concerned is below 30%. However, article 26 lays down the

exceptions in which the European Commission must launch investigations even though the market share is below 30%. One of these exceptions is that the merger “involves a company that is likely to expand significantly in the near future, e.g., because of a recent innovation”.

The EU introduces the *ex ante* regulation in a more systematic way in the Digital Markets Act (DMA) of 2022. One of the most significant institutional innovations of the DMA is that the EU advances the concept of “gatekeepers” and lays down separate obligations for the platforms considered as such. Article 3 of the DMA provides very detailed provisions to clarify on what types of platforms can be considered as gatekeepers. Paragraph 2 of this article stipulates that a “gatekeeper” achieves an annual Union turnover equal to or above 7.5 billion euros in each of the last three financial years; or its average market capitalization or equivalent fair market value amounts to at least 75 billion euros in the last financial year, and it provides the same core platform service in at least three Member States. Simultaneously, it provides a core platform service that in the last financial year has at least 45 million monthly active end users and at least 10 000 yearly active business users established in the Union. Paragraph 8, article 3 of the DMA stipulates that even if a firm does not satisfy the quantitative thresholds in paragraph 2, it can still be designated as gatekeepers based on the assessment of the network effects, data-driven advantages, scale effects, end users lock-in, etc. Article 5 of the DMA indicates a distinctive set of obligations to gatekeepers. For instance, a gatekeeper shall not prevent business users from offering the same products or services to end users through third-party online intermediation services. It shall allow business users, free of charge, to conclude contracts with end users, regardless of whether, for this purpose, they use the gatekeeper’s core platform services.

The Chinese antitrust regulation goes through a similar shift. While principally relying on the *ex post* regulation, nowadays Chinese regulators grant equal attention to the *ex ante* regulation and the *ex post* regulation (Xue and Zhao 2022). They classify digital platforms into distinctive categories and impose differentiated responsibilities to them accordingly. On 29 October 2021, the State Administration for Market Regulation (SAMR) released the call for paper version of the *Guidelines on the Categories and Levels of Digital Platforms* (thereafter “Guidelines on the Categories”) and the *Guidelines on the Implementation of Digital Platforms’ Responsibilities* (thereafter “Guidelines on the Responsibilities”). Based on platforms’ size of users, their sector of activities, and economic power, the *Guidelines on the Categories* distinguish super platforms, big platforms, medium-sized and small-sized platforms. Super platforms have a super large user base (no less than 500 million China-based users in the previous year), super diverse business activities (core services must be composed of at least two types of platform services), super big economic power (market capitalization stabilized at at least 1000 billion yuan, around 14.3 billion US dollars), and super strong capacity to restrict market competition (capacity to prevent business users from reaching end users). Articles 1 to 9 of the *Guidelines on the Responsibilities* lay down different responsibilities for super platforms and big platforms in terms of interoperability, data management, and risk assessment.

The USA also introduce the *ex ante* regulation to regulate the competition on the digital market. The “Ending Platform Monopolies Act” introduces the term of “covered

platforms” to designate the digital platforms with super big capacities to restrict market competition. The Department of Justice (DoJ) and the Federal Trade Commission (FTC) co-designate covered platforms, and update the list every ten years. The designation of “covered platforms” considers both qualitative and quantitative criteria. They must have at least 50 million monthly active end users or 100 000 active business users. Their market capitalization or annual turnover must exceed 600 billion dollars. They must also have the capacity to prevent business users from reaching end users (Congressional Budget Office 2022).

The terms “gatekeepers”, “super platforms” and “covered platforms” in the USA signal that regulators classify digital platforms into different categories before the regulation process starts. The *ex ante* antitrust regulation thus considerably helps reduce regulatory costs. However, the comparison of the criteria used in China, the EU, and the USA shows that the American regulatory environment is the most laxist and the European one the strictest. In the EU, a platform whose annual turnover reaches 7.5 billion euros is very likely to be designated as gatekeeper. In the USA, the annual turnover of a platform must reach 600 billion dollars for being qualified as a “covered platform”. This is nearly 80 times higher than the European criteria. Despite regulatory convergence, state-market interactive patterns forged over time will continue to influence the way in which the government sanctions firms.

Private enforcement

Private enforcement is an important component in the implementation of the antitrust regulation, and helps mitigate regulators’ limits of budget and personnel (Tang 2022, 40). China, the USA, and the EU have all introduced private enforcement to hold platforms accountable. The USA is the first country in the world to have introduced the private enforcement which has become the landmark of the American antitrust regulation. The SAA of 1890 allowed ordinary citizens to take wrongdoing firms to justice. Section 7 of the SAA stipulated that “*any person who shall be injured in his business or property by any other person or corporation by reason of anything forbidden or declared to be unlawful by this act, may sue therefore in any circuit court of the United States in the district in which the defendant resides or is found, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the costs of suit, including a reasonable attorney’s fee*”.

This practice has been largely successful thus far, for treble damages, class action, and the possibilities for lawyers to charge high fees incentivize citizens and lawyers to actively mobilize legal methods to seek compensations.⁵ The “Investigation of Competition in Digital Markets”, report released by the House Judiciary Committee in October 2020, suggested that the American federal government implement the antitrust regulation of the digital economy with three methods: supervision by the Congress, public enforcement, and private enforcement. This suggestion bears testimony to the fact that private enforcement has been an integral part of the American antitrust regulation.

⁵ B20240120, Lawyer Deng.

During my field work in the Department of Legal Affairs of TikTok, one interviewee highly appreciates the contributions of class actions in consumer protection in the USA:

*“I encountered some cases of class actions in the USA. Consumers and attorneys form a pretty spectacular group and exert important pressure over firms. Facing such pressure, firms tend to make concessions to consumers in order to quickly terminate the disputes. Otherwise, the standoff with consumers would harm firms’ reputation. The principal objective of launching class actions is to force firms to concede outside the courtroom.”*⁶

The private enforcement of the antitrust regulation in the EU started later than in the USA, but earlier than in China. In 2001, the European Court of Justice (ECJ) declared that the courts of the member states could allow individuals to seek compensations by suing companies. This decision marked the start of the private enforcement of the antitrust regulation in the EU. The DMA also introduced the private enforcement. Paragraph 42 of the general provisions of the DMA ruled that business users and end users could raise concerns about unfair practices by gatekeepers with any relevant administrative or other public authorities, including national courts. These practices can be discriminatory conditions of access, unjustified closing of business users’ accounts or unclear grounds for de-listing products. To facilitate private enforcement, the EU and the USA have both established mechanisms of coordination and articulation between judiciary institutions and antitrust regulators to facilitate information sharing and the verification of proofs. These mechanisms help reduce citizens’ burden in collecting evidence, encouraging them to frequently resort to the private enforcement for upholding their rights.

The 2022 AML of China improves the private enforcement of the antitrust regulation. Article 60 of the law stipulates that “*where an undertaking engages in monopolistic conduct, causing any loss to others, it shall assume civil liability in accordance with the law. Where an undertaking engages in monopolistic conduct, causing any damage to public interest, the people’s procuratorate at or above the districted city level may institute civil public interest litigation in the people’s court in accordance with the law*”. Therefore, within the Chinese antitrust law, individuals or undertakings can mobilize civil litigations and enact the private enforcement, if their interests are damaged by the anti-competitive practices of undertakings. Their actions are not hindered by the antitrust public enforcement (Sun 2023). In fact, article 50 of the 2007 AML contained the stipulations on the private enforcement. However, this article did not clearly explain the way in which the private enforcement is implemented in practice. In comparison, the 2022 AML is more feasible, for it clarifies on which level of procuratorates can initiate civil public interest litigations.

The public enforcement has dominated the implementation of the antitrust regulation in China. The antitrust public enforcement in China is not the same as in the European and American jurisdictions, for it is part of the administrative enforcement (Deng 2016). In contrast, the space of the private enforcement has remained tiny. At the beginning of 2012, the Supreme People’s Court of China released the “*Decision on several questions*

⁶ B20240304, Lawyer Xu.

related to the application of laws on the civil litigation caused by antitrust cases” (关于审理因垄断行为引发的民事纠纷案件应用法律若干问题的规定) (thereafter the “Decision”). According to the Decision, the distribution of the burden of proof follows the principle of “whoever asserts, who adduces evidence”. Since ordinary citizens have limited means to collect evidence from wrongdoing firms, they can hardly defend their interests by means of the private enforcement. Since the application of the Decision, “there have been very few antitrust civil lawsuits, and most of the plaintiffs ended up with losing the battles in the courtroom” (Sun 2023, 80).

The second obstacle to the development of the private enforcement in China lies in the lack of effective articulation between the public enforcement and the private enforcement. The evidence collected by regulatory bodies has not been used in the private enforcement, which renders it difficult for victims to seek compensations by means of civil actions. The consequence is captured by “*whoever asserts, who loses the lawsuit*”⁷. The third obstacle is the cooperative relations between regulatory bodies and courts. One interviewee complained that “*it is very difficult to implement the private enforcement of the antitrust regulation, because in China, judiciary bodies and regulatory bodies maintain excessively cooperative relations. They seldom challenge or embarrass each other. In the circle of lawyers, the conflicts between the two types of institutions are called administrative actions. China has very few cases of administrative lawsuits*”⁸.

Given the three aforementioned reasons, even though Chinese competition laws do lay down the private enforcement, they have not yet unleashed their potential to protect consumers’ interests. China needs to simplify the private enforcement procedures by allowing consumers to benefit from the proves collected by regulatory bodies during the public enforcement. China can also envision to experiment the treble damages and collective actions to provide sufficient incentives to citizens and lawyers in fighting the illegal practices of tech giants.

Exorbitant financial sanctions

China, the USA, and the EU have introduced exorbitant financial sanctions to deter tech giants from hindering market competition. In the USA, the American government has long encouraged “permissionless innovation” (Thierer 2016, 14–15): it tacitly allows the development of any new technology and new business model, unless an important number of cases appears and shows the harms caused by the new technology or the new business model in question. “Permissionless innovation” de facto “requires citizens to bear the costs of tech firms’ irresponsible practices” (Ma and Hu 2024, 77). Since the Biden administration took power, the American government has shifted its approach to regulating digital technologies and the digital economy altogether, including the anti-trust regulation.

In 2021, Biden nominated Lina Khan, Associate Professor of the Law School at Columbia University as the president of the FTC. As one of the leading figures of the New Brandeis school in the USA, Khan argued that the Chicago school’s attention to consumers’ welfare, defined as lower price and greater output only, should be replaced by a

⁷ B20240120, Lawyer Deng.

⁸ B20240304, Lawyer Wang.

Table 1 Adjustments to the premerger notification filing fees

Value of the Merger (million US dollars)	Filing Fees (before 2022; dollars)	Filing Fees (after 2022; dollars)
between 92 and 116.150	45,000	30,000
between 1000 and 2000	---	400 000
between 2000 and 5000	---	800 000
above 5000	---	2 250 000

thickier understanding of consumer welfare (Khan 2017, 737). She highlights that “consumer interests include not only cost but also product quality, variety, and innovation” (Khan 2017, 737). She calls for the return of economic structuralism which emphasizes the impact of the competition processes and the market structure on the competition outcomes (Khan 2017). Faithful to the new Brandeis school, Khan suggests that antitrust regulators split the business activities of tech firms like Amazon so as to avoid conflicts of interests, or turn infrastructural platforms into essential public utilities (Khan 2017, 790–802). The nomination of Khan as the youngest president of the FTC conveys an important message: the American government will adopt, or at least is experimenting, a new and stricter antitrust regulation framework against tech firms’ diverse practices, like killer acquisition, self-preferencing, lowering interoperability of data, below-cost pricing in order to increase scale.

The strict antitrust regulation measures adopted by the USA include high financial burden for tech firms. The *American Innovation and Choice Online Act* adopted in 2021 stipulates that the self-preferencing of most platforms will be considered as illegal. The fines for the firms involved in such practices will represent 30% of their turnover realized inside the USA. The *Merger Filing Fee Modernization Act* adopted by the House Judiciary Committee in 2021 and approved by the Senate on 29 September 2022 by one roll call vote lowered the premerger notification filing fees for medium and small platforms. In contrast, large tech firms have to pay more. These adjustments (Table 1) have made it more difficult for large tech firms to extend their business activities through M&A.

The EU is known for having applied stringent sanctions against the firms that violate the antitrust regulations. The sanctions it inflicts over wrongdoing firms have even shown to be somewhat disproportionate in comparison with firms’ blunders.⁹ One interviewee pointed out that both foreign tech firms operating in the EU and European tech firms themselves are subject to strict sanctions in cases of violating the competition policies of the EU.¹⁰ Therefore, the intransigence of the European antitrust regulators is less explained by trade protectionism than by the European philosophical traditions according to which the protection of citizens’ rights stands at the heart of the EU (Ma 2023a, 24). Articles 30 and 31 of the DMA rule that tech firms that violate the antitrust rules for the first time and the second time shall respectively pay the fine representing 10% and 20% of their total worldwide turnover in the preceding financial year. Paragraph 1, article 31 of the DMA rules that the European Commission can impose on undertakings,

⁹ S20231226, Lawyer Peng.

¹⁰ S20240401, Businessperson Depoux.

including gatekeepers where applicable, and associations of undertakings, periodic penalty payments not exceeding 5% of the average daily worldwide turnover in the preceding financial year per day. Paragraph 75 of the general provisions declares that “*the Commission should investigate and assess whether additional behavioral, or, where appropriate, structural remedies are justified...This is the case where the Commission has issued against a gatekeeper at least three non-compliance decisions within the period of 8 years*”. The intensity of the sanctions laid down in the DMA is unprecedented. A comparison between the DMA and the GDPR helps reveal this point. Paragraph 4, article 83, of the GDPR rules that ordinary infringements are subject to administrative fines up to 10 million euros, or in the case of an undertaking, up to 2% of the total worldwide turnover of the preceding financial year. Paragraph 5 of the same article rules that serious infringements are subject to administrative fines of up to 20 million euros, or in the case of an undertaking, up to 4% of the total worldwide annual turnover of the preceding financial year. In comparison, the sanctions in the DMA are much stricter than the GDPR. This corroborates the disproportionality of the sanctions in the European antitrust regulation of the digital economy that the aforementioned interviewee talked about.

The level of administrative fines currently practiced in China is lower than that in the EU, but higher than that in the USA. Articles 56, 57, and 58 of the 2022 AML respectively lay down the fines that firms shall pay in cases of agreements, abuses of dominant market positions, or concentrations. The level of administrative fines applied in China is between 1 and 10% of the annual turnover that the firm realizes in the previous year. If the concerned firm does not realize any turnover in the preceding financial year, it shall pay as much as 5 million yuan. The 2022 AML does not indicate whether the turnover in question is realized inside China or internationally. However, since most Chinese digital platforms operate within China, it can be inferred that the “turnover” in the AML designates the turnover realized inside China. This is corroborated by the interviewees.¹¹

Articles 63 and 64 of the 2022 AML of China illustrate the intensification of the financial sanctions against wrongdoing firms. Article 63 rules that “*where violations fall under particularly serious circumstances and have a particularly execrable impact and cause particularly serious consequences, the anti-monopoly law enforcement agency, led by the State Council, may determine the specific amount of the fine to be not less than two times nor more than five times the amount of a fine specified in articles 56, 57, 58 and 62 of this law*”. Article 64 further rules that “*where an undertaking receives an administrative penalty for a violation of this law, it shall have an entry made in its credit record in accordance with the relevant provisions issued by the state, which shall be disclosed to the public, in the case of a serious illegal and dishonest act*”. Besides financial sanctions, the introduction of the naming and shaming measures into the 2022 AML, embodied by the inclusion of firms’ record of sanctions into their social credit score, constitutes firms’ reputational costs of committing non-compliance.

The 2007 AML does not stipulate that firms involved into unlawful concentrations shall pay 1% to 10% of their annual turnover as fines. Instead, antitrust agencies are required “*to stop the implementation of the concentration, to dispose of shares or assets*

¹¹ B20240304, Lawyer Wang, Lawyer Xu.

within a specified period, to transfer business within a specified period, and to take other necessary measures to restore the state before the concentration, and to impose a fine of less than 50 000 yuan” (article 48). Article 58 of the 2022 AML keeps most contents of article 48 of the 2007 AML, but differs from it regarding the sanctions. It rules that regulators can “impose a fine of less than 10% of sales for the previous year, if there is an actual or potential eliminating or limiting effect on competition; or impose a fine of less than 5 million yuan, if there is no eliminating or limiting effect on competition”. The stricter sanctions reflect the zeitgeist of the toughened up antitrust regulation in China.

Convergent antitrust regulation of the digital economy against the backdrop of intensified geopolitical competition

It is well-known that China, the USA, and the EU differ from each other in terms of political systems and market regulation approaches. The convergence of the antitrust regulation of the digital economy in the three regions is question-begging. What are the factors that have spurred the regulatory convergence? In what follows, I will argue that in the current globally connective era, the analysis of the antitrust regulation of the three largest digital economies in the world must be effectuated at the international level and takes into account the reality of geopolitical competition (Qiu 2023). I argue that four factors have co-shaped regulatory convergence: historical reasons, globalization of the digital economy, institutional competition among major digital economies around the regulation of tech giants, support from the civil society.

Historical reasons

Historically speaking, the USA and the EU have built a mature antitrust regulatory framework earlier than China. To export their antitrust regulation rules elsewhere in the world, the USA and the EU actively sought to influence the contents of the Chinese AML in the 1990s, period in which the Chinese government realized the necessity of undertaking the antitrust regulation (Zheng 2010). Taken as the economic constitution of a country, competition laws aimed to ensure the democratic order in the economic sphere of a sovereign country. The AML influences the market structure of a country (high concentration or low concentration) and the state-market interactive patterns (intensive regulation or weak regulation). Given the importance of the antitrust regulation, both the EU and the USA invested significant resources to influence the drafting of Chinese competition laws. For instance, both provided training materials to China and invited Chinese officials to visit the antitrust regulatory bodies in the EU and the USA. They provided financial assistance, helping with the academic publications that promoted their respective practices in the antitrust regulation.¹²

Chinese lawmakers received assistance of the American antitrust regulators when drafting the AML. For instance, the FTC and the DoJ organized several seminars with Chinese competition authorities to discuss the investigation methods and the competition analysis of the market entities. The FTC and the DoJ also submitted to the Chinese government quantities of written comments on the implementation of the Chinese AML

¹² B20240120, Lawyer Deng.

(Ohlhausen 2014, 9). In 2006, the USA adopted the law “Undertaking Spam, Spyware, and Fraud Enforcement with Enforcers beyond Borders Act”. Within this law, the “FTC could receive and dialogue with the officials coming from the competition agencies of foreign countries. It can also provide these officials with classified documents when necessary” (Ohlhausen 2014, 7). In July 2011, the FTC and the DoJ signed a MOU (memorandum of understanding) with the Ministry of Commerce, the National Development and Reform Commission (NDRC) and the State Administration for Industry and Commerce (SAIC), the then three competition authorities of China. According to the MoU, the high-level officials of the antitrust agencies of the two countries could hold dialogues.

Compared with the USA, “the way in which the EU influenced the elaboration of the antitrust rules in China was more systematic and more efficient. For instance, European antitrust authorities directly translated their competition laws, related policies and guidelines into Chinese, such that Chinese officials could easily consult them.”¹³ The EU also helped the drafting of the Chinese AML of 2007. In 2004, the Ministry of Commerce of China, then in charge of the merger control, and the EU Directorate General for Competition signed the “Terms of Reference of the China-EU Competition Policy Dialogue”, which cristalized the mechanism of regular dialogues between Chinese and European competition regulators. From 2004 to 2013, the two parties have held discussion for 8 times, and have held fruitful exchanges and cooperation in the drafting of the Chinese AML, related implementation policies, and investigation into single cases (Shang 2014, 23). In September 2012, the EU Directorate General for Competition signed a MoU with the NDRC and the SAIC, two Chinese antitrust regulators responsible for monopoly agreements and abuses of dominance. These bilateral agreements provided Chinese antitrust regulators with a privileged access to the European regulatory experiences.

For this reason, the 2007 AML of China is strictly speaking a “legal translat” of the competition laws and policies of the USA and the EU (Ma 2023b, 5). For instance, its stipulations on the cartels and firms’ abuse of their dominant market positions resembled articles 101 and 102 of the TFEU. The provisions on the concentrations resembled the Council Regulation (EEC) No 4064/89 of 21 December 1989 on the concentrations between undertakings (the EEC, predecessor of the EU, had no specific rules on the control of concentrations). In the antitrust regulation of the digital economy, China also learnt from the EU, including the introduction of the *ex ante* regulation. Since China has a shorter history of the antitrust regulation than the USA and the EU, and that both the USA and the EU are eager to export their respective regulatory model, the influence of the USA and the EU on the Chinese antitrust regulation is likely to persist.

Globalization of the digital economy

Compared with the real economy, one of the particularities of the digital economy is that its takeoff coincided with the rapid unfolding of the economic globalization. The internationalization of the tech giants led to the internationalization of their business models. Countries where large platforms built their businesses imitated the latter’s business models. The result is that tech firms’ growth trajectories demonstrate striking similarity

¹³ B20240120, Lawyer Deng.

across the globe (Fuchs 2016). Countries eager to capitalize on their digital economy build telecom infrastructure in the first place and develop related downstream industries in the second place. China is no exception to this rule. The growth of Chinese tech firms is certainly indebted to the policy support of the Chinese government, as many observers of Chinese politics pointed out (Jiang 2012). However, their growth cannot be possible without the support of the financial market, in particular the international financial market (Jia and Winseck 2018). Chinese digital platforms are said to have followed a hub-and-spoke model within which a core platform and several peripheral platforms form bilateral collaborative relationship (Jia and Kenney 2018). This growth model also applies to the tech giants in the Silicon Valley. Van Dijck et al. once said that in the USA, “the platform ecosystem functions almost as a “stellar system – a cosmos that revolves around a handful of major planetary stars” (van Dijck et al. 2018, 17). Although the metaphors of “hub-and-spoke” and “stellar system” respectively apply to Chinese and American platforms, they unveil the fundamental similarity of the growth paths of the digital platforms in the two countries. More precisely, platforms at the core are “infrastructuralized” (Plantin et al. 2018), whereby they obtain an extremely powerful control over peripheral platforms. Combined with the network effects, this often leads to a highly concentrated market structure (Khan 2017).

The fact that digital platforms have followed similar growth paths explains why national governments increasingly face similar challenges. Although owned by private capital, large digital platforms now become part of the economic infrastructure for sovereign states. As of 2018, “the core of the Western online infrastructure is completely privatized” (van Dijck et al. 2018, 15), such that national governments must rely on digital platforms to provide public services. The same situation also exists in China. For instance, the development of the tricolor code during the sanitary crisis in China in 2020 was the result of intense collaboration between Alibaba and the Hangzhou municipal government. It is safe to say that nowadays, the control power of private platforms is, if not greater than, at least as strong as that of governments. The competition on the digital market is more likely to cause market concentration, to blur the definition of the relevant market, and to enable platforms to consolidate their monopolistic position on the market via “algorithmic collusion” (Zhang and Luan 2021). The similarity of the challenges facing national governments explains the similarity of the antitrust regulatory approaches adopted by national governments.

Interstate institutional imitation and competition

Nowadays, the level of technological development of a country continues to importantly influence whether this country fares well in geopolitical competition. At the same time, the regulation of technologies also takes on importance for influencing the outcomes of the geopolitical race (Ma and Hu 2024). This is because whether a national government can stem the negative externalities of its digital economy influences its reputation on the global stage. The regulation of the digital economy has taken on equal importance as the development of the digital economy. The EU can hardly compete with China and the USA in terms of technological innovation. By March 2022, among the 2282 unicorn firms in the world, the USA and China respectively have 1243 and 306. The EU only counts 222 unicorn companies the geographical distribution of which is highly unequal.

While Germany and France respectively have 58 and 35 firms, 8 member states have no unicorn at all (European Commission 2022). Respectively 73% and 15% of the foundational models in AI have been developed in the USA and China. The percentage of the EU is much tinier in comparison (Meyers and Springford 2023). The relative delay of the EU in technological terms has not prevented it from becoming a global regulatory model, including in the realm of the antitrust regulation. The “Brussels effect,” as some Chinese scholars term it (Fang et al. 2024), are expected to generate a homogenizing effect both inside and outside the EU. For instance, the State Administration for Market Regulation (SAMR) took inspiration from the European “gatekeepers” system when it drafted the “Guidelines on the Categories” in 2021. In the call-for-opinion version of this document, the SAMR divided Chinese digital platforms in 3 categories: super platforms, large platforms, medium and small platforms.

The EU’s position as the global regulatory model is indissociable with the values it champions. The EU takes citizens’ rights and privacy protection as the “North Star” in the development, commercialization, and regulation of tech firms (Groth and Straube 2020). The advocacy of human rights has allowed the EU to garner unequalled normative power over China and the USA, and to generate institutional pressure over Chinese and American antitrust regulators. It urges Chinese and American regulatory bodies to follow the example of the EU, so as not to be taken as indifferent to citizens’ human rights.

When enforcing the antitrust regulation of the digital economy, European regulators grant equal attention to the outcomes of the market competition, the competitive process and the market structure. The fact that European regulators adopt a thicker conception of consumer welfare, to use the expression of Khan (2017, 737), is largely explained by the particularity of the digital economy. In the great majority of the platform transactions, consumers systematically find themselves at a disadvantaged position. They lack not only the information allowing them to well gauge the level of risks of each transaction, but also the methods with which to undo the cheating behavior of the e-merchants...Consumers’ vulnerability is inherent to online transactions” (Tang 2022, 268). To regulate the digital economy has become as important as to develop it. Regulation and development constitute the two wings of the digital economy enabling a national government to survive in geopolitical competition (Ma 2024). That the EU occupies a privileged position on the dimension of the regulation helps offset its (temporary) weakness on the dimension of technological innovation. In recent years, already backed by their advantages in technological innovation, Chinese and American regulators are working hard on the regulatory dimension. The fact that all the three digital economies currently deploy efforts on the dimensions of the regulation and development drive the regulatory convergence.

Breakup of the citizen-platform alliances

With the intensifying competition of the international digital market, large digital platforms have increasing difficulties in hiding their similarities with other private undertakings. Like any other private companies, the core concern of tech firms is also the pursuit of commercial profits, rather than the defense of citizens’ freedom of speech or the lofty pursuit of technological progress to the service of all humans (Van Dijck

et al. 2018). It has become increasingly known that large platforms are *de facto* indifferent to citizens' privacy and that they manipulate citizens' behavioral data (e.g. scandal of Cambridge Analytica). Public awareness of platforms' evil reduces platforms' popularity. This starkly contrasts with users' fondness of tech firms in the early years of the arrival of the internet. In the 1990s and well into the 2000s, more than one observer took the internet as a boon for empowering citizens (Cardon 2010; Yang 2009). National governments' attempts to regulate cyberspace were widely taken as blasphemy against freedom (Barlow 1996). Facing the alliances between citizens and platforms, regulators could difficultly adopt the measures that fundamentally adjust platforms' behavior. This is particularly the case in Europe and the USA: Since political parties can only take power or stay in power after winning elections, they have a plenty of constraints when regulating the platforms popular among consumers who are also voters.

Since the end of the 2010s, media and academia started being interested in examining the dark side of the digital economy (Kim and Telman 2015; van Dijck et al. 2018; Zuboff 2019). The in-depth investigations and the disillusionment coming along had contributed to weaken the platform-citizen alliances. Ferocious market competition has pushed platforms to work out ever more efficient methods to collect more data than their competitors. Nevertheless, more efficient data collection methods are oftentimes more likely to violate citizens' privacy. Kim and Telman reported that even if users tick "reject unnecessary cookies", platforms would continue to trace users' surfing activities in cyberspace, for this allows them to obtain more data than their competitors (Kim and Telman 2015). The killer acquisition of start-ups by large platforms also reveals the latter's profiteering. The more the competition between platforms is intense, the more platforms' inclination toward profiteering is evident. Platforms' hypocrisy can be seen from the fact that they contend that they serve users, while it is the private interests of large business corporations that they actually serve. Platforms tend to claim their transparency, choosing not to talk about black boxes inherent to their algorithms (van Dijck et al. 2018, 24). Platforms societies "are becoming opaque because social and economic processes are hidden inside algorithms, business models, and data flows which are not open to democratic control" (Pasquale 2015). Even though tech giants are still reluctant to admit such reality, citizens, in particular the tech-savvy young people, have acquired immunity against platforms' deliberately messianic messages that they can hardly live up to.

The combination between network effects, big data and algorithms produces a self-reinforcing effect in the digital economy (Tang 2022, 270). This implies that without effective regulation, super large platforms would continue to wreak havoc to medium and small platforms as well as consumers. Consumers' attitude toward platforms has taken a negative turn in Europe, China and the USA. The breakup of the platform-citizen alliances helps reduce the obstacles that had hitherto prohibited antitrust regulators from applying a proactive antitrust regulation. Therefore, it constitutes another favorable condition for the convergence of the antitrust regulation.

Conclusion

The antitrust regulation of the digital economy is taking on greater importance nowadays than ever before. This is because super big platforms not only influence market competition. As Khan highlighted, “excessive concentrations of private power posed a public threat, empowering the interests of a few to steer collective outcomes” (2017,742). Today, the power of the tech giants exceeds that of national governments. Either consciously or unconsciously, tech giants influence and even dominate each level of national development and national governance. They also participate in shaping global order (Fang and Yan 2019). The antitrust regulation of the digital economy is gathering momentum in China, the USA, and the EU. The objective is to ensure that “power that controls the economy should be in the hands of elected representatives of the people, not in the hands of an industrial oligarchy” (Douglass 1948). This article identifies the convergence of the antitrust regulation in the three digital economies along three dimensions: the growing separation of the antitrust regulation of the digital economy from that of the brick-and-mortar economy, convergence of the regulatory objectives, and convergence of the regulatory methods.

This article explains the convergence of the antitrust regulation of the three digital economies by four factors. First, from the historical perspective, the EU and the USA had actively sought to influence the rule-making of the Chinese antitrust regulation since the 1990s. The Chinese AML adopted in 2007 is the result of learning from the EU and the USA. Second, with the globalization of the digital economy, platforms born in the three economies take similar growth trajectories, and ergo, cause similar challenges to regulation bodies. Therefore, it is logical that national governments tend to take similar regulatory approaches. Third, the factors that can influence the outcomes of the geopolitical competition have largely diversified. Besides technological innovation, the regulation of technologies also plays a role in influencing the position of a country in the geopolitical game. Although the EU lags behind China and the USA in terms of technological innovation, it holds clear advantages over the two in terms of advancing innovative regulation methods. Fourth, with the intensification of the competition among platforms, digital platforms have difficulties in hiding their similarity with the private firms in other economic sectors. The scandals that revealed platforms’ reckless collection of consumers’ personal information end up with breaking down the platform-citizen alliances, thus clearing the way for regulators’ proactive regulation.

To realize greater convergence in the enforcement of the antitrust regulation has been the common objective of the competition authorities in China, the USA, and the EU since the 2000s (Ohlhausen 2014, 7). This article shows that the antitrust regulation of the digital economy in the three regions is marching toward this direction. However, it is necessary to add some cautionary notes here, for the convergence will not necessarily persist due to the differences of the value systems specific to each country. One interviewee highlighted that “in many regulatory areas of the digital economy, the EU is actually crafting a ‘circle of *socialite*’. More precisely, the EU only accepts to collaborate with the countries that have similar value systems and political systems as it. The USA adopt

the strategy of ‘vulgar tycoons’: it accepts to cooperate with any country, the precondition being that it must be recognized as the ‘Big Brother’ of the group”¹⁴

Although the USA and the EU have the same political system, they don’t champion the same value systems. In the American platform ecosystem, citizens are expected to be responsible for their online behavior. With individualism being the zeitgeist of the American society, an individual is not blamed if she does not contribute to her community. By the same logic, regulatory bodies that interfere in the market are more perceived as hindering citizens’ freedom than preserving public interests. On the contrary, most Europeans prefer to build a multistakeholder platform society in which individuals are expected to behave in an accountable way both toward oneself and one’s community. Citizens are like spoiled children (Ma 2023a), relying on public authorities to defend their fundamental interests. In China, the situation is still different, for citizens place their trust both in tech firms and public authorities. Regarding the relations with other countries, China is in favor of building equal relations between sovereign countries in the regulation of the digital economy. One concrete example is that China seldom refuses to cooperate with countries with looser data protection systems than China.¹⁵ The differences of value systems are likely to impede further convergence of the antitrust regulation between China, the USA, and the EU. Future researchers are strongly recommended to reckon upon the mechanisms via which the hindrance effects play out, as well as the way by which to minimize such effects.

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Availability of data and materials

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Competing interests

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¹⁵ B20240119, Scholar Zhou.

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