

# **Beyond Competition:**

The Regulatory Turn & the Emerging Era of Intervention in Platform Firms & Markets

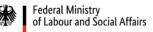
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# Introduction: Platform Firms, Markets, and the New Regulatory Turn

During the last two years, politics and policy has turned rapidly from a long-faltering and sporadic rearguard effort to maintain competition in reaction to monopolistic on-line platform firms and markets towards the comprehensive regulation of their structures, strategies, and behaviors. With remarkable speed rarely seen in significant policy areas, the concentration of power and wealth within online platform firms and markets, along with the revolutionary changes they have unleashed on economic, social, and political life (Cusumano, Gawer, & Yoffie, 2019), have triggered a political economic backlash (Cioffi, Kenney, and Zysman, 2021; Kenney, Zysman, & Bearson, 2020). This political and juridical inflection point is increasingly likely to transform the governance and thus the character of Big Tech and the most dynamic areas of contemporary capitalism. An expansion of governmental regulatory authority and comprehensive prescriptive regulation of platform firms and markets is a prominent emergent policy agenda of policy makers around the world proposing a growing number of major interventionist regulatory initiatives. Competition has not been abandoned as an objective, but it is no longer sufficient — or even necessary — as a norm underpinning political and socio-economic order in the digital age. We have entered a new era of regulation and the regulatory state.

For nearly 25 years, competition policy and law were the primary, and often the exclusive, bulwark against monopolistic structures and practices of major platform firms. And during this period, it has been largely ineffectual in halting the growth of these firms, the deepening of their dominance over online markets, the expansion of their scope over more markets, the use of their market power to entrench themselves, and the use of their enormous financial power to acquire potential rivals and disruptive technological innovations. The power wielded by these rising platform firms derived from both their distinctive structural characteristics and from the largely passive (and, in important ways, enabling) stance of governments in eschewing regulatory oversight and intervention. In both the US and EU, permissive legal doctrines and weak enforcement of competition law allowed the largely unfettered growth and market dominance of platform firms and their expansion into new markets. Left to the private ordering of platforms and platform markets, the most successful platform firms expanded in scale, scope, and power through the technological design and architecture of their digital platform technologies, and via the legal design of their contractual relations left remarkably unconstrained by legislators, regulators, and courts. These firms have deliberately constructed platforms at the center of two-sided and multi-sided markets in which they intermediated vast webs of commercial relationships between buyers and sellers, vendors and consumers, and firms in

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different sectors — all of whom became increasingly, if not entirely, dependent on the platform (Cutolo, Hargadon, & Kenney 2021; Cutolo & Kenney 2020; Khan, 2016; Pasquale 2015).

The failures of competition law orthodoxies have enabled the unfettered growth of platform firms and the markets they control, and endowed them with market and political economic power and influence seldom — if ever — before seen in history. Their commensurately vast financial market capitalizations have distorted market and technological developments to maintain and strengthen their dominant positions. The "GAFA" firms (Google/Alphabet, Amazon, Facebook, and Apple) have a combined market capitalization of \$6.58 trillion. (CompaniesMarketCap.com, 2021)<sup>1</sup> Societies, electorates, and sovereign states appeared powerless to stop expansionist platform firms from increasingly extractive abuses of their growing market power and dominance. As political authorities begin to reassert regulatory power over online platforms at an accelerating pace, we are witnessing the arrival of a period of transition marked by a return of public ordering of political economic structures and behavioral norms driven by broadbased societal demands in addition to, and often overriding, narrow economistic interest group politics. (Cioffi, Kenney, and Zysman, 2021)

Competition has proved elusive in the economic domains dominated and controlled by platforms due to the fundamental character of platforms themselves: powerful network effects, winner-take-all dynamics, asymmetric power over both data and contracting, and multi-sided markets with deeply embedded and exploitable conflicts of interest. Under these conditions, competition law has proven inadequate to the task of recapturing and/or maintaining competition in the expanding terrain dominated by platforms. (Pasquale, 2015; Khan, 2016, 2019; Plantin, et al., 2018, Pike, 2018; Suominen, 2020; Newman, 2015) Even if it could be revitalized effectively, the new regulatory politics and policy making shows that concerns beyond competition and immediate consumer benefits have achieved political ascendancy.

#### The Regulatory Imperative: The Emergent Policy Agenda and a Brief Review of the New EU Regulatory Initiatives

With astonishing speed, the competition-centered framing of the regulatory debate has been displaced and decades of competition law orthodoxy challenged by a broader and more comprehensive conception of online platform regulation. The new regulatory debate reflects a widespread and deep transformation in public opinion and among political elites around the world as unease has grown with respect to platform firms and markets. If the central question of the old debate was whether competition law should be strengthened in response to platforms' growing market power, the new debate that has crystal-lized over the past year raises the question of what (not whether) expansion of multiple areas of regulation and governance are necessary to address the pervasive and complex economic, social, and ultimately political significance and

<sup>&</sup>lt;sup>1</sup> The combined market cap of the 6 largest tech firms is \$8.54 trillion if Microsoft is included. All are platform firms, and all but one (TenCent) are American. (Ibid.)

effects of online platforms. The new regulatory turn alters the underlying assumption and substantive terms of the legal rules that would govern the power of and problems presented by platform firms and markets. The emerging legal framework also will tend to place courts in a more limited role within long-established limits of administrative law in place of the expansive powers they have wielded in competition law.

| Platform Characteristic           | Harm/Threat   |
|-----------------------------------|---|
| Network Effects                   | Winner-take-all monopoly dynamics; de facto platform cartels  |
| Asymmetric Power over Information | Manipulation of users/transactions, privacy violations; (mis)appropriation of personal & transactional data |
| Asymmetric Power over Contracting | One-sided/exploitative terms; lack of real assent   |
| Multi-Sided Markets               | Unconstrained conflicts of interest   |
| Conflicts of Interest             | Exploitation of dependency; exploitation or misappropriation of confidential data                           |
| Regulatory Arbitrage              | Avoidance of regulation/costs imposed on similarly situated businesses; "race to the bottom"                |

 Table 1: Characteristics and Potential Harms of Platform Firms

The new regulatory turn alters the underlying assumption and substantive terms of the legal rules that would henceforth govern the power of and problems presented by platform firms and markets. The emerging legal framework places the courts in a more limited role within long-established limits of administrative law in place of the expansive powers they have wielded in competition law. Table 2 sets out the most important aspects of platform firm and markets alongside the principal modes of regulatory interventions typically deployed to address the deficiencies, dysfunction, and damage they cause. We see this panoply of regulatory modalities, including but ranging far beyond competition policy and law, being directed at the structure and activities of platform firms at an accelerating pace.

Table 2: Platform Characteristics and Corresponding Regulatory Responses

| Platform Characteristic           | Regulatory Intervention/Modality   |
|-----------------------------------|--|
| Network Effects                   | Competition/Antitrust Law; Utility Regula-<br>tion (if market competition impossible)  |
| Asymmetric Power over Information | Disclosure & Transparency Rules (substance,<br>scope, timing, form of mandated informa-<br>tion); Opt-In/Out Default Rules (for informa-<br>tion ownership/control/use)  |
| Asymmetric Power over Contracting | Contract Law Remedies (rescission, reforma-<br>tion, adhesion, etc.); Mandatory prescribed/<br>proscribed contract terms prescribed by law;<br>"Structural"/Neo-Corporatist Regulation (use<br>of collective organization & negotiation to<br>equalize bargaining power) |
| Two/Multi-Sided Markets           | Conflict of Interest Regulation (see below);<br>Rules prescribing apportionment of costs<br>& benefits among user classes; Elimination<br>of legal defenses against claims of harm by<br>asserting benefits to 3 <sup>rd</sup> parties                                   |
| Conflicts of Interest             | "Structural" rules & remedies (elimination of<br>COIs through competition law by splitting<br>business functions/lines into distinct busi-<br>ness entities); Regulation of COIs (disclosure,<br>waiver/approval procedures, etc.)                                       |
| Regulatory Arbitrage              | "Functional" Regulation (all similarly situated<br>businesses regulated under the same rules,<br>no formalistic evasion or on-line exemptions);<br>Regulation at higher political/jurisdictional<br>level to prevent "race to the bottom" incentives                     |

This is an inherently and intensely political process. Figure 1 illustrates the relationships among different forms of regulation in government in highly abstract and simplified form to focus on two scope dimensions of the unfolding regulatory politics. The first dimension represents the scope of normative and functional objectives of policy. The second is the range of groups and interests recognized politically and juridically within regulatory politics and outcomes. Several implications flow from the broadening of each scope condition. As the subject matter and normative concerns of regulation expand, the greater the number of constituencies and socioeconomic groups become swept up and involved in regulatory politics. Consequently, the ends — and the means — of regulation will depart from narrow, economistic and market-centered (or market-facilitating) forms of economic governance and ordering. Further, as the politics of regulatory change and reform only becomes more complex, it also potentially becomes more indeterminate and uncertain with respect to the outcomes in terms of its legislative and regulatory outcomes.

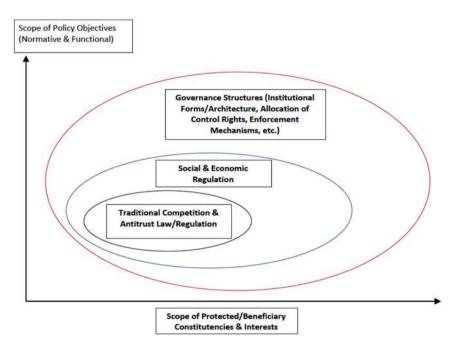


Figure 1: Relationships among Forms of Regulation and Governance<sup>2</sup>

Currently, the most important of these recent regulatory initiatives are the EU's proposed Digital Markets Act (DMA) and Digital Services Act (DSA).<sup>3</sup> Underscoring their close programmatic and practical relationship, The European Commission released the DMA and DSA in tandem in December 2020. Together, the proposals represent the furthest reaching expansion of platform regulation in the OECD nations to date (European Commission, 2020a; European Commission, 2020b). As such, the broad contours and formal characteristics of these regulatory proposals indicate the emerging political and institutional dynamics of political change and regulatory upheaval surrounding online platforms. At first glance, the DMA appears aimed at revamping of the EU's competition law has applied to online platforms, while the DSA takes on the task of regulating platforms beyond the limits of competition policy in such areas as privacy, information asymmetries and disclosure, and platform contractual terms and conditions of use. On closer examination, the two proposed acts reflect the blurring of competition and broader regulatory law, and the superseding of narrow substantive focus of competition law by a broader regulatory agenda that endows public authorities with more expansive powers.

<sup>3</sup> Recent legislation introduced in the U.S. House of Representatives may substantially alter the legal terrain of platform firms and challenge Europe's potential first-mover advantages. (See, e.g., Ghaffary & Morrison, 2021) However, the uncertainties of American federal policymaking and politics amid institutional fragmentation and deeply dysfunctional hyper-partisan political divisions makes the final legislative outcome impossible to predict at present.

<sup>&</sup>lt;sup>2</sup> Source: Cioffi, Kenney, and Zysman, 2021, Figure 2.

The DMA itself embodies this regulatory shift in the ways it *departs* from the established structure of competition law. First, it establishes quantitative criteria to designate large platform firms as "gatekeeper" platforms subject to the terms of the act and therefore to heightened scrutiny. (European Commission, 2020a)<sup>4</sup> In contrast to existing state of competition and antitrust law, these gatekeeper firms do not have to be shown to have achieved market dominance before the terms of the act apply to their structure, practices, and behavior. (Ibid.) Likewise, all mergers and acquisitions conducted by gatekeeper firms are subject to review by the EU competition authority. (Ibid., Chap. 1, ¶ 31, Chap. 5, Art. 1, ¶¶1-3) Financial penalties for violation of competition law by gatekeeper platforms may be calculated on the basis of the firm's global turnover (ibid., Chap. 2, Art. 3, ¶¶2(b), 6(a)), rather than through the more laborious and difficult process of calculating economic damages typical under extant competition and anti-trust law. Finally, the DMA contains provisions enabling regulators to undertake "delegated acts" in determining gatekeeper status and public interest exemptions to legal obligations (subject to reversal by the European Parliament or Council), and periodic reviews of the regulatory provisions that would require consultations with a wide range of experts and member state representatives in a process that appears more akin to administrative rule-making and stakeholder governance, than to the traditional litigation-driven adjudicatory model of competition law. Indeed, the DMA's departures from the doctrinal orthodoxies of EU competition law are so substantial that EU competition authorities regard the DMA as a distinct and ancillary body of regulation.

What is missing from the substance of the DMA is likewise significant in contemplating future regulatory expansion and centralization. First, the DMA contains no substantive strengthening or other alteration of merger review procedures or standards regarding platform firms and markets. Hence, platform firms' most effective way to expand and perpetuate their market power, and arguably the most injurious to competition and technological innovation remains inadequately addressed. Second, in contrast to the substantial treatment of fines in the text, the DMA does not expand the regulators' discretionary authority to fashion and impose structural remedies beyond the narrow confines of existing law. Given that the status quo in terms of competition law remedies has proven inadequate and left EU regulators reliant on demonstrably ineffective monetary sanctions, the failure to include more expansive structural remedial powers in the DMA effectively defers a determinative decision on the Commission's approach to regulating platform firms and markets. However, if regulatory effectiveness is not - or cannot — be achieved or maintained through means of, or borrowed from, competition law, the political forces that underlying the current regulatory turn against the concentrated power of platform firms and markets will likely drive the continuation and perhaps the acceleration of regulatory expansion beyond the conceptual and institutional confines competition law and its enforcement.

<sup>&</sup>lt;sup>4</sup> The DMA provides that Providers of core platform providers can be deemed to be gatekeepers if they: (i) have a significant impact on the internal market, (ii) operate one or more important gateways to customers and (iii) enjoy or are expected to enjoy an entrenched and durable position in their operations.

Such gatekeeper status can be determined either with reference to clearly circumscribed and appropriate quantitative metrics, which can serve as rebuttable presumptions to determine the status of specific providers as a gatekeeper, or based on a case-by-case qualitative assessment by means of a market investigation. (European Commission, 2020a, pg. 2 (emphasis in original))

The DSA is a more typical regulatory statute, and is likely the shape of things to come in the future of EU platform governance and regulation. The DSA is both broader and immediately applicable to a wider array of platforms (not restricted to "core providers" or "gatekeepers") than the DMA. (European Commission, 2021b, Chap. III)<sup>5</sup> It is more uniform in its approach and normative provisions than the DMA and targets a much wider range of specified platform behaviors. (Ibid.) The regulatory approach of the DSA diverges from that common in competition law in its large number of more precisely drafted and detailed *ex ante* prescriptive and proscriptive rules of general application (i.e., consumer protection, personal privacy, dispute resolution, market and contractual transparency, modes of handling personal and financial data). (European Commission, 2021b, Chap. III, Sec. 3)<sup>6</sup> These wide-ranging provisions address a wider array of market failures, while also protecting explicitly non-economic individual interests and societal values.

Like the DMA, the DSA too contains ambiguities, lacunae, and problematic structural features that will likely preoccupy regulators and legislative authorities in further expanding and deepening a more robust body of EU law regulating platforms. Although it imposes numerous mandatory obligations on platforms and the firms that control or operate them, much of the substantive core of the DSA takes the form required areas of platform firm "due diligence," rather than specific prescriptive or proscriptive rules. (European Commission, 2021b, Chap. III, Sec. 3) This flexibility implicitly recognizes the enormously complex and potentially costly tasks of actively monitoring and controlling all activities and communications using a platform, but thereby also introduces an element of normative indeterminacy that will require continual interpretation and clarification to ensure reasonable efficacy and certainty.

On the level of institutional design, enforcement of the DSA raises additional questions of the future effectiveness and functional coherence of the regulation in that initiating and conducting these proceedings *remain almost entirely the responsibilities of member state regulatory authorities* (now designated, rather hopefully, as "Digital Services Coordinators"). (Ibid., Chap. IV, Sec. 1) This nod to the fundamental EU principle of subsidiarity reflects the much wider range of activities and enterprises covered by the DSA than the inherently transnational EU-wide character of the firms and markets targeted by the DMA (which is to be enforced by European Commission regulatory officials). However, the fragmentation of enforcement power and therefore the dispersal of interpretation to national-level regulators and courts across the EU poses a continual threat to the legal uniformity sought in proposing the DSA, and ultimately will confer substantial power on the EU judiciary and the ECJ (long an impediment in enforcing EU competition law) to resolve the inevitable gaps, conflicts, and inconsistencies in the construction and application of regulatory provisions.

Given these substantive and structural elements, the DSA may be viewed as both a prudent — though dramatic — first step into an inherently difficult area of regulation, and as evidence of incomplete institution building hampered by the legal order and political tensions within the EU. Once again, the political forces now

<sup>6</sup> See also ibid. Secs. 1, 2, and 4 (additional obligations imposed on providers of intermediary services, hosting services, and very large on-line platforms, respectively).

<sup>&</sup>lt;sup>5</sup> Chapter III, Sec. 4 of the DSA does, however, impose additional legal obligations on "very large online platforms (as defined by Article 25) [,]" while Sec. 3 exempts "online platforms that are micro or small enterprises" under Art. 16.

driving the regulatory turn in addressing the problems of on-line platforms likely will continue to press legislators and regulators to adopt clearer and more prescriptive rules and standards, develop institutional mechanisms to promote uniformity through EU-level administrative review and rule-making, and maintain substantial administrative control over the substantive contents and application of the regulation while containing the role of the ECJ. In sum, the DSA virtually ensures further legislative activity and regulatory expansion, along with some degree of further regulatory centralization.

#### The Regulatory Imperative and Structural Considerations Beyond Competition

The EU and its member states have taken an early first-mover advantage in this new regulatory turn with national legislation and more recently the proposed DMS and DSA. The substantive changes to existing law and the entrenched legal orthodoxies of competition law reveal the significance and pathbreaking regulatory character of the legislative proposals. Notably, the move away from competition and antitrust law and towards a more comprehensive and interventionist regulatory approach to addressing the immense and growing power of platform firms and markets may reduce, though not eliminate, the role of the courts in Europe and the US in determining the substance and scope of policy and enforcement. The character of competition law favors an active and powerful role for courts in adjudicating enforcement actions. The pervasive influence of the Chicago School of law and economics and its deep-seated antagonism towards uses of state power and regulatory intervention overriding or deviating from "voluntary" contracting and "free" market assumptions, has fueled judicial skepticism towards enforcement in competition cases has consistently impaired or blocked efforts to address alleged abuses of market power by platform firms.

A more comprehensive and interventionist regulatory approach to platform firms and markets embodies normative and institutional imperatives that are increasingly attractive for purposes of policy efficacy and political control. Greater reliance on administrative regulation serves the goals and ambitions of political elites seeking not only to constrain platform power in response to societal demands, but also to retain more control over policymaking along with its implementation and enforcement. This has become an increasingly salient concern in light of the limited success of competition authorities in addressing concentrations and abuses of market power by platform firms and the frustration of enforcement efforts by courts, particularly the European Court of Justice, which has shown itself to be skeptical or manifestly hostile to the more stringent enforcement of competition law. Administrative regulation is associated with the expansion of discretionary authority and power by governmental officials. The consequent limitation on the power of court is itself a justification and rationale for the expansion of the regulatory state under conditions where the courts have become an impediment to the development and implementation of social and economic policy. Finding such regulatory alternatives to effectively constrain platform power becomes particularly imperative when the platform is the market itself, and that increasing returns to scale and centralized coordination and control of such a monopoly market is intrinsic to the benefits created by the

platform. Finally, the uniformity of *ex ante* rules and their general application creates a level playing field on which all market participants must play and to which they must conform.

However, regulation may become a double-edged sword. On the one hand, the uniformity of regulatory rules and their broad applicability should reduce opportunities and incentives for platform firms to exploit conflicts of interest, and to engage in regulatory arbitrage and "races to the bottom" in pursuit of economic advantages unrelated to productive activity. On the other hand, however, the broader imposition of increasingly detailed and complex *ex ante* regulatory rules across-the-board to all economic actors or firms regardless of size may also have the practical effect (perhaps by intention and design) of becoming a barrier to entry warding off would-be competitors via the increased costs and other associated burdens of regulatory compliance. The only protection against such unintended consequences and subversion of the regulatory turn is democratic politics, public accountability of rule-makers, and the effective development of adequate administrative and regulatory capacity and expertise in the service of regulatory objectives that redefine the public interest.

The EU's bold action, along with that of its member states, has established itself as the most promising political forum for instituting a new regulatory order for the platform economy under the rule of law. But recent governmental activity in the U.S. and China indicates that Europe's lead is hardly assured,<sup>7</sup> and competing approaches to platform regulation raise the possible global Balkanization of the digital economy. Given the enormity of the political, economic, and ideological stakes, the EU and its member states cannot afford to fail in constructing this emergent agenda to curtail and domesticate the power of platforms to fully realize their substantial benefits while minimizing their considerable harms. Europe's success in this epochal endeavor rests on the ability of governmental authorities and institutions to discover and develop politically and economically sustainable mixes of regulatory and governance mechanisms, and to remain functionally responsive to often rapidly changing technological, economic, and market conditions. We are only at the beginning of this new era, but the contours of its future are being written now.

<sup>7</sup> Cf. Jia & Kenney, 2021 (development of Chinese platforms may be an alternative to the neoliberal American corporate model); Ghaffary & Morrison, 2021 (overview of five bills introduced into the U.S. House of Representatives in June 2021 to curb the market power and anti-competitive practices of platform firms).

#### References

- CompaniesMarketCap.com (2021) Largest Tech Companies by Market Cap data updated daily, visited June 15, 2021.
- Cusumano, M., Gawer, A., & Yoffie, D. (2019) Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power HarperCollins Publishers.
- Cutolo, D., Hargadon, A. & Kenney, M. (2021)
   Competing on platforms: Recognizing and navigating the risks Sloan Management Review, (Spring), 1–8.
- Cutolo, D. & Kenney, M. (2020)
   Platform-dependent entrepreneurs: Power asymmetries, risks, and strategies in the platform economy
   Academy of Management Perspectives.
- European Commission (2020a) Proposal for a regulation of the European parliament and of the council on contestable and fair markets in the digital sector (digital markets act).
- European Commission (2020b) Proposal for a regulation of the European parliament and of the council on a single market for digital services (digital services act) and amending directive 2000/31/EC.
- Ghaffary, S., & Morrison, S., (2021) What you need to know about the House's opening bid to rein in Big Tech Vox, posted June 11.
- Jia, K. & Kenney, M. (2021) The Chinese platform business group: An alternative to the Silicon Valley model? Journal of Chinese Governance. 10.1080/23812346.2021.1877446.
- Kenney, M., Bearson, D., & Zysman, J. (2021) The platform economy matures: Exploring and measuring pervasiveness and power Socio-Economic Review, forthcoming.
- Kenney, M., Zysman, J., & Bearson, D. (2020) Transformation or structural change? What Polanyi can teach us about the platform economy (14)1 227–240.
- Kenney, M. & Zysman, J. (2016) The rise of the platform economy Issues in Science and Technology, 32(3), 61–69

- Khan, L. M. (2019) The separation of platforms and commerce Columbia Law Review, 119(4), 973–1098.
- Khan, L. M. (2016) Amazon's antitrust paradox Yale Law Journal, 126(3).
- Newman, J. M. (2015) Antitrust in zero-price markets: Foundations University of Pennsylvania Law Review, 164(1), 149–206.
- Parker, G. G., Van Alstyne, M., & Choudary, S. P. (2016)
   Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You
   Norton & Company.
- Pasquale, F. (2015) The Black Box Society: The Secret Algorithms That Control Money and Information Harvard University Press.
- Pike, C. (2018) Introduction and key findings. In Rethinking Antitrust Tools for Multi-Sided Platforms (pp. 9–34) OECD.
- Plantin, J. C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2018) Infrastructure studies meet platform studies in the age of Google and Facebook New Media & Society, 20(1), 293–310.
- Suominen, K. (2020)
   On the rise Europe's competition policy challenges to technology companies Center for Strategic and International Studies (CSIS).

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