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Competition Law, Big Tech, and Financialisation

The Dark Side of the Moon

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16.1 INTRODUCTION

In recent years, the competition law community has become absorbed in discussions around the role of competition law in the digital economy. Debate typically centres on the largest digital platform companies: Google, Apple, Facebook, Amazon, and Microsoft ('GAFAM').[1] Such studies have helped to shift competition law beyond the neoclassical price theory framework that underpins the consumer welfare standard, raising significant issues including what is the most appropriate unit of analysis for understanding competitive interactions in the digital economy and how to define power in the digital age.[2] These are pertinent questions that will rightly continue to attract the attention of scholars and regulators.[3] Still, in this brief chapter, we wish to highlight important shortcomings of the existing literature and therefore promote a different perspective on the digital economy than the 'monopoly power' narrative that has dominated competition law discourse regarding digital platforms in recent years.

The current dominant narrative on the power of digital platforms stays silent on the *cui bono* question: Who benefits from this digital transformation? To answer this, one needs to address the inner logic of modern financial capitalism, the prevalence

[1] For a range of views, see the articles in the special issue in Industrial and Corporate Change and the introduction to the special issue by M Jacobides and I Lianos, 'Regulating Platforms and Ecosystems: An Introduction' (2021) 30(5) Industrial and Corporate Change; T Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (Columbia Global Reports 2018); L Khan and S Vaheesan, 'Market Power and Inequality: The Antitrust Counterrevolution and Its Discontents' (2017) 11 *Harv L Policy Rev* 235; M Meagher, *Competition Is Killing Us: How Big Business Is Harming Our Society and Planet and What to Do About It* (Penguin 2020).

[2] For a discussion, see I Lianos and B Carballa Smichowski, 'Economic Power and New Business Models in Competition Law and Economics: Ontology and New Metrics' (2021) UCL Centre for Law, Economics and Society Research Paper 3/2021 https://ssrn.com/abstract=3818943 accessed 22 November 2021.

[3] For a systematic critique, see I Lianos, *Competition Law and the Intangible Economy* (Oxford University Press 2022, forthcoming).

https://doi.org/10.1017/9781108899956.021 Published online by Cambridge University Press

of the shareholder value principle,[4] the transformation of the 'shareholder' concept with the emergence of institutional investors as primary holders of global capital as an important episode in the trend towards financialisation,[5] and the way this impacts on the competitive strategies of Big Tech.

Financialisation is a broad, and somewhat contested, term. Economist Gerald Epstein offers a frequently cited definition of financialisation as 'the increasing role of financial motives, financial markets, financial actors, and financial institutions in the operation of the domestic and international economies'.[6] This study focuses on the corporate aspects of financialisation, namely the growth of the financial dimension of value generation in the digital economy and the reorientation of corporate governance around the principle of shareholder value maximisation. Following Hyman Minsky, we also highlight the increasingly speculative nature of economic behaviour under financialisation.[7]

Subject to a few exceptions, the extant literature fails to acknowledge the importance of financialisation in driving the growth of GAFAM.[8] While the majority of scholarship on the digital platforms focuses on network effects and market tipping in promoting their growth, financialisation is also key to understanding value capture in the digital economy and in particular the competitive strategies employed by the same platforms. As noted, here we understand financialisation to mean the growth of the financial dimension of value generation and the reorientation of corporate governance around the principle of shareholder

[4] See, for a similar perspective, G Davis, 'Taming Corporate Power in the Twenty-First Century' in Subhramanian Rangan (ed), *Performance and Progress: Essays on Capitalism, Business, and Society* (Oxford University Press 2015).

[5] See, R Eccles, 'Concentration in the Asset Management Industry: Implications for Corporate Engagement' *Forbes* (Jersey City, 17 April 2019), www.forbes.com/sites/bobeccles/2019/04/17/concentration-in-the-asset-management-industry-implications-for-corporate-engagement/?sh=69109b55402f accessed 22 November 2021; F Franzoni, 'The effects of concentration in the asset management industry on stock prices' (*VOX CEPR*, 3 June 2019) https://voxeu.org/article/concentration-asset-management-industry-and-stock-prices accessed 22 November 2021 (noting that (s)ince 1980, the top ten institutional investors have quadrupled their holdings in US stocks. As of December 2016, the largest institutional investor oversaw 6.3% of total equity assets, and the top ten investors managed 26.5% of these assets). A more concentrated picture emerges if one looks to the concentration of asset management in the digital economy, in particular, for certain kind of management for well advanced digital economy projects.

[6] G Epstein, 'Introduction: Financialization and the World Economy' in Gerald A Epstein (ed) *Financialization and the World Economy* (Edward Elgar 2005) 3.

[7] See H Minsky, *Can 'It' Happen Again?: Essays on Instability and Finance* (Routledge 1982).

[8] See I Lianos, A Ivanov and D Davis, *Global Food Value Chains and Competition Law* (Cambridge University Press) ch 4 (forthcoming); I Lianos, 'Competition Law for the Digital Era: A Complex Systems' Perspective' (30 August 2019) http://dx.doi.org/10.2139/ssrn.3492730 accessed 22 November 2021; I Lianos and others, 'Financialization of the Food Value Chain, Common Ownership and Competition Law' (2020) 16 *ECJ* 149; A McLean, 'A Financial Capitalism Perspective on Start-up Acquisitions: Introducing the Economic Goodwill Test' (2021) 17 *JCL & E* 141; I*oannis* Lianos, 'Law and Capital Accumulation in the 21st Century Digital and Financial Capitalism' (2021) CLES Research Paper 6/2021 (forthcoming).

value maximisation.[9] Significantly, it is also associated with an increasingly speculative approach to investment.[10] Nowhere is this more apparent than in the digital economy. Expectations around the future profits of technology firms are extremely buoyant, and often quite distinct from the reality of markets as they presently exist.[11] By achieving central positions within digital ecosystems, GAFAM are beneficiaries of such financial speculation. They enjoy enormous financial clout that then enables them to further entrench their power, primarily through intensive merger and acquisitions ('M&A') activity. This has allowed them to expand outside of their core business activity into adjacent and/or overlapping fields of activity. That is, financialisation plays a vital role in intensifying the accumulation of power, and therefore rents, in the digital economy. Too much focus has been placed on digitisation without comprehending that the shift may not have had such dramatic economic and social consequences if it was not paired with the emergence of financial capitalism.[12]

This financial capitalism perspective invites us to consider who really benefits from GAFAM's dominance. Competition law typically considers participants in the economy in the binary terms of consumer welfare and producer welfare, with the terms 'consumer' and 'producer' stylised concepts that mask the variety of positions an economic actor may hold within an economy. Under financialisation, people are not simply consumers but may also be investors. It is therefore worth considering the extent and distribution of equity ownership in digital platforms. Given that equity ownership is heavily skewed towards the wealthiest and most privileged in society, we consider that the role of competition law may be to represent those who do not share in the power of GAFAM through their involvement in capital markets.

The further limitation we highlight is a failure to consider GAFAM's dominant position in the global economy from an organisational perspective. As in the field of competition law more broadly, scholarship on competition in the digital economy pays little attention to corporate governance. While many commentators observing GAFAM's M&A strategy draw a comparison with the conglomerates that dominated the American economy following World War II, there has been insufficient work to

[9] For a discussion, see G Davis and S Kim, 'Financialization of the Economy' (2015) 41(1) Ann Rev of Socio 203.

[10] See H Minsky, 'The Financial Instability Hypothesis' in Philip Arestis and Malcolm Sawyer (eds), *Handbook of Radical Political Economy* (Edward Elgar 1993).

[11] See R Foroohar, 'Another tech bubble could be about to burst' *Financial Times* (London, 27 January 2019).

[12] None of the reports issued to discuss digital competition incorporated a financial capitalism dimension and any mention of institutional investors, despite them holding significant shares in digital platforms, see J Furman and others, 'Unlocking digital competition: Report of the digital competition expert panel' (Government of the United Kingdom 2019) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf accessed 22 November 2021; For an inclusion of the financial capitalism dimension, see ILianos and A Ivanov (ed), Digital Era Competition BRICS Report (September 2019) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3901413 accessed 22 November 2021.

uncover the accuracy of this analogy. The post-war conglomerates were run by and for a managerial class, largely free from interference by shareholders.[13] This may be contrasted with the corporate governance of firms following financialisation, in which the interests of shareholders are paramount. We undertake empirical work to uncover whether GAFAM truly do resemble historical conglomerates rather than the financialised firms typical of the post-1980 period. We find that GAFAM's corporate governance regimes, to varying degrees, exhibit a hybrid blend of characteristics and resist easy categorisation.

The chapter is split into three substantive sections. Section 16.2 uncovers the interaction between financialisation and growth of the digital platforms. Section 16.3 addresses the question of who benefits from their dominance and the implications of this for competition law. Section 16.4 presents empirical evidence on the corporate governance regimes of the GAFAM firms, comparing and contrasting them with the managerial primacy of the post-war conglomerates and the shareholder-led approach that typifies financial capitalism. Section 16.5 concludes.

16.2 THE CHANGING COMPETITIVE GAME: FINANCIALISATION, FUTURITY, AND THE DOMINANCE OF DIGITAL PLATFORMS

Work on competition in the digital economy has helped to move competition law beyond its traditional focus on output restriction by product market monopolists.[14] This is apparent, for example, in the literature on digital ecosystems, which have emerged as a new structure of economic relationships.[15] Such work helps us to understand the centrality of GAFAM in the digital space; they have attained 'architectural power', positioning themselves so that they influence the way that ecosystems are structured and shaping the allocation of value between ecosystem participants.[16] Undoubtedly, this governance architecture may generate value and

[13] On the dispersal of share ownership, see G Means, 'The Separation of Ownership and Control in American Industry' (1931) 46(1) Q J Econ 68; A Berle and G Means, *The Modern Corporation and Private Property* (Transaction Publishers 1932).

[14] I Lianos, 'Competition law for a Complex Economy' (2019) 50 IIC 643.

[15] Ecosystems are regarded as communities of collaborating firms that collectively produce a good, service, or solution with an aligned vision – ecosystems thus do not merely denote 'theory of the firm' alternatives to vertical integration or supply-chain arrangements, rather the concept reflects the emergence of business environments marked by modularity in production, co-evolution, and decisional complexity; R Adner, 'Ecosystem as Structure' (2017) 43 J Manag 39; R Kapoor, 'Ecosystems broadening the locus of value creation' (2018) 7 J Organ Des, art 12; E Autio and T Llewellyn, 'Tilting the Playing Field: Towards an Endogenous Strategic Action Theory of Ecosystem Creation' in S Nambisan (ed), *Open Innovation, Innovation Ecosystems, and Enterpreneurship: Multidisiplinary Perspectives* (Word Scientific 2018) ch 5; see also M Jacobides, C Cennamo, and A Gawer, 'Towards a theory of ecosystems' (2018) 39 Strateg Manag J 2255; J Moore, 'Predators and Prey: A New Ecology of Competition' (1993) 71(3) Harv Bus Rev 75.

[16] Ecosystem orchestrators set the activity and value architectures of ecosystems with the purpose to maximize its resilience and capacity to generate value. For instance, ecosystem orchestrators controlling

promote innovation. However, competition law scholarship still does not fully grasp the dynamics driving GAFAM's dominance of the digital economy and its long-term impact on social and consumer welfare.

Arguably, the most important factor is the consolidating effect of financialisation. Modern competition law holds that if a firm engages in some type of conduct, or wishes to merge with another, this is more than likely because it would enhance efficiency.[17] Yet, under financial capitalism, competitive behaviour is not only about improving efficiency to succeed in product markets in the present, as assumed by the competition orthodoxy. Rather, they engage in 'futurity-led' competition, in which firms seek capital asset appreciation by convincing investors of their expected dominance in the future – futurity denoting the reorientation of economic activity towards the future and firm valuation coming to rest on expected future profits.[18]

In a 1925 manuscript, the institutional economist John Commons explained futurity in the following manner:

> [Present values rest] not on account of what has happened in the past, nor even on account of what is happening at the present point of time, but on account of what I and others hope, expect, or fear will happen in the future. The extent to which this human ability of forecasting has its influence on present behavior and values may be given the name, Futurity.[19]

Thus, futurity is 'a factor that indicates anticipation'.[20] Writing a century ago, Commons identified the emergence of futurity by analysing a series of cases heard by the US Supreme Court at the end of the nineteenth century. Prior to this time, firm valuation was based solely on the estimated market price of tangible assets. That is, firms were treated as if they had ceased to trade and were simply a collection of illiquid assets awaiting liquidation. Commons' analysis of futurity centres on the replacement of this practice by the treatment of firms as living entities, as 'going concerns', that are expected to earn profits in the future.[21] By the turn of the twentieth century, the US Supreme Court had come to recognise that firms can

an operating system make a strategic use of their application programming interfaces (APIs), which enable external apps to connect with the operating system, hardware or web-based system, algorithms based on Big data analytics, or contractual restrictions, among other forms of ecosystem 'glue', in order to ensure interconnectivity and interoperability for final consumers, but by the same also offer profitable points of control for the dominant firm in the ecosystem and the resources to build a strategic competitive advantage. This leads to a new set of dynamics, whereby those who control ecosystems can generate profit through a fresh set of dynamics. See E Autio, 'Orchestrating ecosystems: a multi-layered framework' (2021) Innovation: Organization and Management.

[17] See F Easterbrook, 'The Limits of Antitrust' (1984) 63 *Tex L Rev* 1.

[18] R Palan, 'Futurity, Pro-cyclicality and Financial Crises' (2015) 20 *New Political Economy* 367.

[19] *Reasonable Value* (1925) 2 (as cited in G Atkinson and C Whalen, 'Futurity: cornerstone of Post-Keynsian Institutionalism' in Charles J Whalen (ed) *Financial Instability and Economic Security after the Great Recession* (Edward Elgar 2011) 53–54).

[20] J Commons, *Institutional Economics: Its Place in Political Economy* (Macmillan 1934).

[21] *Ibid.*

own something that they do not actually possess, expected future profits, the value of which began to be incorporated into firms' value.[22]

Futurity is inherently tied to the financial system because it is finance that provides 'the necessary link between the present and the future'.[23] Under financial capitalism, unfettered financial markets are driving an intensification in futurity. With their 'animal spirits' unleashed, investors in the modern economy care less and less about the profits and cashflow firms achieve in the present day and instead aspire speculatively towards realising tremendous profits many years in the future.[24] In this configuration, where futurity is key, value is not determined and generated by the present market exchange but by an expected succession of events. Consequently, we see a 'subtle shift of mindset from profit (and isolating mechanisms) to wealth creation (and the potential for asset appreciation)'.[25]

Nowhere is futurity-led competition more apparent than in the digital economy, in which economic decision-making is driven by speculative visions of extraordinary profits in the future that is seemingly detached from present-day reality. Consider, for example, the extraordinary valuations of companies like Uber and Tesla that are yet to record meaningful, sustained profits.[26] As noted by economist Ronen Palan:

> The theory of futurity implies that not only financial system is vulnerable to sentiments about the future, but the entire economy in the age of futurity also has lost its anchoring in any objective measures of value as such (if there ever were any in the first place).[27]

The major digital platforms have benefitted immensely from this trend, with their market capitalisations skyrocketing in the last decade. At the time of writing, GAFAM are five of the six most valuable companies by market capitalisation globally (their hegemony broken only by Saudi Armco): Apple is valued at $2.6 trillion, Microsoft is valued at $2.5 trillion, Amazon is valued at $1.8 trillion, Alphabet is valued at

[22] J Commons, *Industrial Goodwill* (McGrew-Hill 1919); S Kemper, *The Capitalization of Goodwill* (John Hopkins Press 1921); R Palan, 'The Financial Crisis and Intangible Value' (2013) 37 *Capital & Class* 65; Palan (n 18).

[23] W Peterson, 'Institutionalism, Keynes, and the Real World' (1977) 11(2) J Econ Issues 201, 217.

[24] See H Minsky, 'The Financial Instability Hypothesis' in Philip Arestis and Malcolm Sawyer (eds), *Handbook of Radical Political Economy* (Edward Elgar 1993); S Banner, *Speculation: A History of the Fine Line between Gambling and Investing* (Oxford University Press 2017) 307–330; S Leins, *Stories of Capitalism: Inside the Role of Financial Analysts* (University of Chicago Press 2018); E Chiapello, 'Financialisation of Valuation' (2015) 38 *Human Studies* 13.

[25] M Jacobides, T Knudsen and M Augier, 'Benefiting from Innovation: Value Creation, Value Appropriation and the Role of Industry Architectures' (2006) 35 *Research Policy* 1201, 1212.

[26] See, for example, J Schumpeter, 'Are technology firms madly overvalued? Three financial sanity tests for whether there is a bubble' (*The Economist*, 23 February 2017); H Horan, 'The Uber Bubble: Why Is a Company That Lost $20 Billion Claimed to Be Successful?' (*ProMarket*, 20 November 2019); N Aschoff, 'No Rational System Would Value Tesla at $100 billion' *Jacobin* (New York, 26 January 2020).

[27] Palan (n 18).

$1.9 trillion, and Facebook (Meta) is valued at $0.9 trillion.[28] Together, they constitute 24.7% of the Standard and Poor's (S&P) 500's total market capitalisation.[29] Such valuations are principally motivated by high expectations for phenomenal profits in the not-so-immediate future because of their position as gatekeepers controlling important bottlenecks in digital ecosystems (for example, operating systems, search engines, app stores, and the cloud). To the extent that, in view of its essential characteristic of futurity, the main source of value in the digital economy emanates from financial markets valuing expected returns, ecosystem orchestrators attract important investments, in particular, if they command control over an essential bottleneck for complementors (gatekeepers).

In turn, the futurity-driven market capitalisations enjoyed by GAFAM provide them with immense financial firepower, which enables them to further shape the digital economy in their own favour.[30] There appears to be a 'growth-funding' feedback loop, 'by which the future supply of effective funding increases as a result of the conditions created by a speculative expansion, and ends up lowering the cost of capital'.[31] Moreover, digital platforms directly benefit from financialisation as they own large stocks of financial assets (bonds, cash, or other financial instruments).[32] Rodrigo Fernandez and his co-authors note that the seven largest Big Tech companies (Apple, Microsoft, Alphabet, Facebook, Amazon, Alibaba, and Tencent) own more than $700 billion financial assets, including cash, government bonds, corporate debt securities, mortgage-backed securities, investments in money market funds, and equity securities, among others,[33] which represent a much higher percentage of their total assets than traditional S&P 500 companies.[34]

Significantly, GAFAM are able to use their enormous financial clout to further entrench their power through engaging in intensive M&A activity. In the period from their founding to 2018, Alphabet has acquired 214 companies, Amazon 77

[28] Data sourced from YCharts: see 'Apple Inc (AAPL) chart' (*Ycharts*) https://ycharts.com/companies/beta/AAPL/market_cap accessed 22 November 2021; 'Microsoft Corp (MSFT) chart' (*Ycharts*) https://ycharts.com/companies/beta/MSFT/market_cap accessed 22 November 2021; 'Amazon.com Inc (AMZN) chart' (*Ycharts*) https://ycharts.com/companies/beta/AMZN/market_cap accessed 22 November 2021; 'Alphabet Inc (GOOG) chart' (*Ycharts*) https://ycharts.com/companies/beta/GOOG/market_cap accessed 22 November 2021; 'Facebook Inc (FB) chart' (*Ycharts*) https://ycharts.com/companies/beta/FB/market_cap accessed 22 November 2021.

[29] The total market capitalisation of the S&P 500 at the time of writing is $39 trillion. The combined market capitalisation of the five Big Tech companies is $9.7 trillion. 'S&P 500 Market Cap chart' (*Ycharts*) https://ycharts.com/indicators/sp_500_market_cap accessed 22 November 2021.

[30] See, R Fernandez and others, 'The financialisation of Big Tech' (*SOMO*, December 2020) www.somo.nl/the-financialisation-of-big-tech/.

[31] R Caballero, Emmanuel Farhi and Mohamad L Hammour, 'Speculative Growth: Hints from the U.S. Economy' (2006) 96 *Am Econ Rev* 1159.

[32] *Ibid*. at 23.

[33] *Ibid*. at 30 (Figures 3.1 and 3.2).

[34] *Ibid*. at 32 (Figure 3.4). Their total debt has also grown from US$94 billion in 2014 to US$295 billion in 2019 (Figure 3.6).

companies, and Facebook 65 companies.[35] Similarly, between 1991 and 2018, Microsoft has acquired 189 companies and Apple 89 companies.[36] Through such transactions, GAFAM have been able to further develop digital ecosystems and cement their critical positions within them. Amazon, for instance, started off as an online retailer of books before being vertically and horizontally integrated with other entities which enabled it to become a vendor of various products and a media and entertainment company that competes with other media and entertainment companies the products of which it also sells on its platform. Amazon has also expanded its activities into Internet cloud business and storage and the transmission of content to consumers.

Financialisation and futurity, therefore, create a virtuous feedback loop for these firms in which power in the digital economy precipitates financial power, which in turn enables them to deepen their power in the digital economy. In this manner, the speculation that characterises the wider digital economy prompts the development of a more 'rational bubble' in GAFAM stock valuations.[37] The perception that they (could) control a valuable bottleneck that may provide them with a sustainable competitive advantage and abnormal profits in the long term is a crucial driver for strategic action by the management of the relevant firm. This relatively new phenomenon is reinforced by the learning-by-doing effects engendered by the use of data accumulation, advanced artificial intelligence capabilities, and the central positioning of digital platforms as gatekeepers in various economic sectors in the digital economy, which enable them to draw on their significant predictive power and to potentially leverage that to a central positioning in the financial anchorages of the global economy.[38]

This financial capitalism account sheds light on the dynamics driving the expansion of digital platforms, moving the discussion beyond efficiency-based explanations and inviting us to view their growth with a greater degree of scepticism.

16.3 WHO BENEFITS FROM THE DOMINANCE OF THE DIGITAL PLATFORMS? DISTRIBUTIONAL IMPLICATIONS AND AGENT-BASED MODELLING

Beyond highlighting the role of financialisation and futurity-led competition in driving the growth of the digital platforms, the financial capitalism perspective invoked here also invites us to consider who actually benefits from GAFAM's dominance of

[35] M Doucette, 'Visualising Major Tech Acquisitions', (visualcapitalist.com, 24 July 2018), www.visualcapitalist.com/interactive-major-tech-acquisitions/.

[36] *Ibid*.

[37] Caballero and others (n 31)

[38] See, for an interesting discussion, M Iansiti and K R Lakhani, *Competing in the Age of AI* (Harvard Business Review Press 2020).

https://doi.org/10.1017/9781108899956.021 Published online by Cambridge University Press

the digital economy. The current market-based competition law framework does not attempt to provide a holistic answer to this vital question, focusing narrowly on consumer welfare. Yet, following financialisation, people are not only consumers but also may be investors who share in the benefits of GAFAM's power through stock ownership.

Notably, despite a widespread myth about the 'democratisation of finance', shareholding remains highly concentrated among the wealthiest and most privileged in society.[39] In the US, for example, the vast majority of people own very little or no corporate equity: at the end of the first quarter of 2021, the wealthiest top 1% of Americans owned 20% of corporate equities and mutual fund shares, with the top 10% holding 13% and the entire bottom 50% just 0.2%.[40] As highlighted in the following section, institutional investors, who invest on behalf of this wealthy minority, own significant stakes in each of the GAFAM firms. Clearly, then, it is the most well-off who benefit from GAFAM's dominance via stock ownership.

This distributional impact of competition law enforcement has not yet been adequately examined, although there have been some efforts, still uncomplete, to move towards this direction.[41] To the extent that competition law only focuses on consumer welfare, defined as the behaviour of a representative agent, the consumer, it is agnostic as to distributional effects to other sociological categories of agents, such as workers, investors, and other categories of individuals that may be delineated according to their average income or wealth.[42] Such analysis, if it is to be complete, needs to be performed at the level of each jurisdiction, taking into account all the affected stakeholders.[43] One can imagine that such analysis is performed at least intuitively when deciding about the stance of a specific jurisdiction with regard to the social costs (and benefits) of the economic power of Big Tech

[39] See L Palladino, 'Democratizing Investment' (2019) 47(4) *Pol & Soc'y* 573; I Erturk and others, 'The democratization of finance? Promises, outcomes and conditions' (2007) 14(4) *Rev Int'l Pol Econ* 553; Edward Wolff, 'The Decline of African-American and Hispanic Wealth since the Great Recession' (2018) NBER Working Paper No 25198 www.nber.org/papers/w25198 accessed 22 November 2021.

[40] The Federal Reserve, 'Distribution of Household Wealth in the US since 1989' (21 June 2021) www.federalreserve.gov/releases/z1/dataviz/dfa/distribute/table/#quarter:126;series:Corporate%20equities%20and%20mutual%20fund%20shares;demographic:networth;population:all;units:levels. See also D Greenwald, M Lettau and S Ludvigson, 'How the Wealth Was Won: Factors Shares as Market Fundamentals' (2021) NBER Working Paper No 25769 www.nber.org/papers/w25769 accessed 22 November 2021.

[41] See, S Vaheesan, 'Accomodating Capital and Policing Labor: Antitrust in the Two Gilded Ages' (2019) 78(4) *Mary L Rev* 766.

[42] For a discussion of the importance of assessing the distributional impact of competition law enforcement and policy see, I Lianos, 'Competition Law as a Form of Social Regulation' (2020) 65 *Antitrust Bull* 3.

[43] At least this would be what would require a polycentric competition law model: see, I Lianos, 'Polycentric Competition Law' (2018) 71 *Current Legal Problems* 161.

in order to design their specific regulatory response, in view of their institutional capabilities and resources.[44] A more systematic analysis would require the use of different tools than those traditionally employed by competition authorities, in order to map the power of these digital platforms and assess their incentive and capacity to produce effects in each jurisdiction and determine the social 'geography' of such direct or spill-over effects.

An important tool that has not been adequately explored so far by competition law literature[45] is agent-based modelling.[46] This tool provides a bottom-up approach to simulate a system of heterogeneous autonomous agents, thus accounting for different attributes, such as the size, the business model, as well as the specific ownership structure and corporate governance of undertakings, and could also integrate a dynamic perspective by designing these agents to be adaptive through learning. A similar modelling can be done for various sociological categories of individuals, such as 'investors', 'labour', and 'consumers', accounting for their income, education or wealth level, varying degrees of rationality, thus not relying on the average behaviour of individuals defined *in abstracto* but on the basis of their real attributes and those the theory/hypothesis to be tested considered important. The model may not only focus on price-system intermediated interactions but also centre on or combine non-price ones. It may be possible to also develop a typology of realistic rule sets to be applied to all or categories of agents, as well as different agent environments (taking into account the different spheres of competition – markets, ecosystems, sectors) that more comprehensively account for the complexity of these interactions and relationships (for example, competition, cooperation, co-opetition, ownership, control, influence) and open up to various behavioural frameworks that fit the research question asked (this will be different, for instance, if the research focuses on the impact on privacy, prices and output, quality, innovation, democracy, among other dimensions). The interactions to take into account may be financial flows, unique

[44] The literature so far has focused on geopolitics, but these are of course related to some form of assessment of the broader social impact of Big Tech conduct and how this affects the stakeholders situated in the specific jurisdiction, if one of course makes the assumptions of the public interest theory of regulation. See see, for instance, M Jacobides, M Bruncko, and R Langen, 'Regulating Big Tech in Europe: Why, so What, and How Understanding Their Business Models and Ecosystems Can Make a Difference' (*Evolution*, 20 December 2020) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3765324 accessed 22 November 2021.

[45] See, however, I Lianos, 'Competition Law for the Digital Era: A Complex Systems' Perspective' (n 8) 12–13, 15.

[46] There is a significant literature on agent-based modelling. For its use in economics and industrial organization theory, see, among others, R Axelrod, *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration* (Princeton UP 1997); L Tesfatsion, 'Agent-based computational economics: A constructive approach to economic theory' in Leigh Tesfatsion and Kenneth L Judd (eds), *Handbook of computational economics: Agent-based computational economics*, vol 2 (North-Holland 2006) 831; L Hamill and Nl Gilbert, *Agent-Based Modelling in Economics* (Wiley 2016); J Sanchez-Cartas, 'Agent-based models and industrial organization theory. A price-competition algorithm for agent-based models based on Game Theory' (2018) 6 *Complex Adaptive Systems Modelling* 2.

visitors metrics and time spent on a website, information exchange/data flows, and the expression of emotions ('likes', 'dislikes', 'friends', 'followers') in order to determine the 'ties' between the various agents and the topography of the network.

Calibrating such models may take significant resources, and naturally, their degree of validity may depend on the way the model matches with the available data and on the initial conditions chosen to design the model. Although such tools also require significant sources of data, it is easier than it has ever before to gather in view of digitisation and the expansion of the digital economy. The agent-based model will run on various simulations and other computations and will eventually provide important insights through the visualisation of the interactions between agents, and the predicted evolution and outcomes of such interactions in different virtual worlds. The economic process would thus be modelled as a dynamic system of interacting agents. The topology of such interactions between agents is complex as the scale of the system/environment the agent-based model aims to explain is driven by the specific social phenomenon of interest. The tool may thus enable competition authorities to better capture emerging phenomena and to improve their understanding of the broader social impact of the examined behaviour in the context of a specific jurisdiction, not only at a purely abstract level but also taking into account a more realistic depiction of the status and motives of the agents. However, one should note the limitations of such tools, in view of the important complexity of adaptive systems, and the evidential value of simulation methods in legal processes. Notwithstanding, the tool may be employed more safely for case selection and prioritisation.

16.4 ARE DIGITAL PLATFORMS TYPICAL CONGLOMERATES?

The intensive M&A activity undertaken by GAFAM is a well-documented feature of the digital economy. In light of their merger-induced diversification, commentators frequently invoke a conglomerate analogy to describe the GAFAM firms.[47] However, analyses have so far stopped short of testing this analogy by evaluating their corporate governance regimes. Most work has so far focused on the governance of the Big Tech ecosystems, which is of course important and crucial if one is to superpose some form of public governance to the private governance structures that have been put in place by Big Tech platforms, through technology, the use of contract law or even what some have named the 'uncontract',[48] but little has been

[47] M Bourreau and A de Streel, 'Conglomerates and EU Competition Policy' (28 March 2019) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3350512 accessed 22 November 2021; Andrew Ross Sorkin, 'Conglomerates Didn't Die. They Look Like Amazon' *The New York Times* (New York City, 19 June 2019); P Olson, 'How Zuckerberg Is Feeding His Facebook Conglomerate' *Forbes* (Jersey City, 27 March 2015).

[48] For analysis, see I Lianos, K Eller and T Kleinschmitt, 'The Limits of Private Governance of Ecosystems' (2021) CLES Research Paper Series 07/2021 (forthcoming).

done to explore from a competition law perspective their corporate governance. As a discipline, competition law treats firms' internal dimensions as a 'black box' that left to corporate law.[49] Here, we open this black box and interrogate the validity of the conglomerate hypothesis, assessing whether GAFAM resemble the conglomerates that were a prominent feature of the post-war economy or if they are closer to the financialised firm typical of the post-1980 period.

In the decades following World War II, a combination of strict financial regulation and atomised shareholding left managers as the predominant force in US corporate governance.[50] Unlike under financial capitalism, shareholders were paid little mind.[51] Managers sought growth through conglomeration. These large conglomerates dominated large chunks of commerce and emerged as multinational corporations organised as an M-form business organisation that expanded their reach in different parts of the globe with the view to develop 'synergies'. Conglomeration and the concept of synergies were however increasingly subject to extensive criticism in business literature in the 1980s: Michael Porter criticised the relevance of portfolio management, at least for advanced economies, and explained in his work 'how diversified companies do not compete; only their business units do' and that 'diversification inevitably adds costs and constraints to business units'.[52] These conglomerates also relied on the central role of important 'industry captains', such as Harold Geneen of the ITT Corporation or James Ling, of the now defunct Ling-Temco-Vought conglomerate, that built the acquisitive conglomerate model through a succession of M&As in the 1960s and early 1970s.[53]

Notably, conglomerates pioneered the strategy of corporate growth through capitalising on financial markets – a strategy now being taken up by the digital platforms.[54] Many conglomerates acquired more than 50 firms during the decade

[49] F Thépot, *The Interaction between Competition Law and Corporate Governance* (Cambridge University Press 2019); S Weber Waller, 'Corporate Governance and Competition Policy' (2011) 18 *Geo Mas L Rev* 833.

[50] A Chandler Jr, *The Visible Hand: The Managerial Revolution in American Business* (first published 1977, Belknap Press 1999).

[51] S Deakin, 'Corporate governance and financial crisis in the long run' in Cynthia A Williams and Peer Zumbansen (eds) *The Embedded Firm: Corporate Governance, Labor, and Finance Capitalism* (Cambridge University Press 2011).

[52] M Porter, 'From Competitive Advantage to Corporate Strategy' *Harvard Business Review* (May 1987) https://hbr.org/1987/05/from-competitive-advantage-to-corporate-strategy (arguing that that 'a company will create shareholder value through diversification to a greater and greater extent as its strategy moves from portfolio management toward sharing activities' and that 'a corporate theme is a good way to ensure that the corporation will create shareholder value').

[53] A Schleifer and R Vishny, 'Takeovers in the '60s and the '80s: Evidence and Implications' (1991) 12 *Strategic Management Journal* 51; T Hurley, 'The Urge To Merge: Contemporary Theories on The Rise of Conglomerate Mergers in the 1960s' (2006) 1 *J Bus & Tech L* 185.

[54] S Knafo and S Dutto, 'Patient capital in the age of financialized managerialism' (2016) 14 *Socio-Economic Review* 771; N Fligstein, *The Transformation of Corporate Control* (Harvard UP 1990); N Fligstein, 'The Theory of Fields and Its Application to Corporate Governance' (2016) 39 *Seattle U*

up to 1968,[55] with the very largest, including ITT, making more than 20 acquisitions in 1968 alone.[56]

One of the reasons and possible advantages of conglomerate mergers during this period was the need to develop internal capital markets at the level of the conglomerate, as the managers of the firm were thought to have information advantages over the external capital markets that were not that developed in the 1960s in order to allocate capital for projects with higher rates of return. Conglomeration enabled cross-subsidisation between different divisions within the same diversified company.[57] Some firms were perceived to have information advantages over the external capital markets, for instance in the allocation process of capital and the operational aspects of each business division. However, as external capital markets develop, 'many firms can provide company-specific information to the capital markets directly' and thus 'more easily bypass firm internal capital markets for investment funds'.[58]

Crucially, conglomerates were a key driver of technological progress. Profits were retained and reinvested into the corporation. Economist John Kenneth Galbraith noted how managerialism entailed a 'shift of power in the industrial enterprise […] from capital to organised intelligence', allowing for the significant commitment of time and resources necessary to produce technical innovation.[59] Yet, the concept of conglomeration came under attack in the context of the structural crisis of the 1970s.[60] Furthermore, the development of external capital markets in the 1970s, in particular with the development of technology enabling external (to the firm) capital markets to work around the clock and provide immense amounts of information and data for analysis, reduced the importance of the information advantages of internal capital markets.[61] This has led to the emergence of different organisational structures.

Following financialisation and the onset of shareholder primacy, the corporation was mostly seen as a portfolio of activities, managed according to their financial performance (in terms of rate of return on investment), rather than defined in terms of synergetic productive capabilities at a conglomerate level. To raise share prices, managers divested large swathes of their firms. By 1995, the average large firm that

L Rev 237; A Schleifer and R Vishny 'Takeovers in the '60s and the '80s: Evidence and Implications' (1991) 12 Strategic Management Journal 51.

55 N Berg, 'What is Different about Conglomerate Management' (1969) 47 Harv Bus Rev 112, 113.

56 R Sobel, *The Rise and Fall of the Conglomerate Kings* (Beard Books 1984) 118.

57 See, R Glenn Hubbard and D Palia, 'A Reexamination of the Conglomerate Merger Wave in the 1960s: An Internal Capital Markets View' (1999) 54(3) *J Fin* 1131.

58 *Ibid*. at 1150.

59 J Galbraith, *The New Industrial State* (Princeton UP 1967) 70.

60 For a critical perspective on this view, see Peter G Klein, 'Were Acquisitive Conglomerates Inefficient?' (2001) 32(4) The RAND Journal of Economics 745.

61 S Sassen, 'The locational and institutional embeddedness of electronic markets: the case of the global capital markets' in Mark Bevir and Frank Trentmann (eds), *Markets in Historical Contexts* (Cambridge University Press 2004).

had started the 1980s operating in dozens of industries operated in only one.[62] In parallel, the adoption of open-system standards by major players in the computer industry led to the weakening or abandonment of internal research and development within major corporations in favour of patenting, cross-licensing, outsourcing, and the takeover of start-ups. Technically, this was accompanied by the design and development of modular components that were manufactured by offshore companies and vertically integrated into niche markets. Financially, the shift was made possible through the rise of organised venture capital, cushioned by large investments from large retirement and pension funds.

This technological and economic transformation was built around a new mantra: shareholder value maximisation, which forms a key tenet of financial capitalism. The shareholder primacy principle changed managerial priorities from that of maximising growth by re-investing corporate savings in the long-term productive potential of the corporation (the 'principle of retain and re-invest') to that of maximising stock value through extensive buybacks of corporate stocks (share repurchase) in order to inflate stock prices as the resulting artificial scarcity of shares boosts their value.[63] Disciplined by a corporate market for control dominated by financial interests, in particular institutional investors, corporate managers became increasingly aligned with the interests of shareholders, and adopted strategies aiming to increase the price of their corporate stocks. They downsized their corporations (in particular cutting labour costs) in order to create short-term shareholder value and distributed the freed-up corporate revenues to financial interests, particularly shareholders, instead of re-investing them in the corporation (the principle of 'downsize and distribute').[64]

Literature on financialisation tells us that there are various characteristics of a 'financialised' firm: 1) pronounced institutional investor shareholding; 2) extensive influence of such institutional investors, including through voting rights; stock-based corporate remuneration; and 3) the distribution of cash to shareholders through dividend issues and share buybacks, typically at the expense of productive investment (for example, in research and development).[65] Put together, we may imagine a 'financialised firm' index, composed of these three elements, that indicates the extent to which a firm's corporate governance is guided by shareholder primacy. By examining GAFAM through the lens of these factors, we may determine whether their corporate governance resembles that of the post-war conglomerate or that of the post-1980 firm.

[62] G Davis, K Diekmann and Catherine H Tinsley, 'The Decline and Fall of the Conglomerate Firm in the 1980s: The Deinstitutionalization of an Organizational Form' (1994) 59(4) *American Sociological Review* 547.

[63] W Lazonick, 'Profits without Prosperity' *Harvard Business Review* (September 2014) https//hbr.org/2014/09/profits-without-prosperity; L Palladino, 'Stock Buybacks, Driving a High-Profit, Low Wage Economy' (*Roosevelt Institute*, March 20, 2018) http://rooseveltinstitute.org/stock-buybacks-high-profit-low-wage/.

[64] Lazonick (n 66)

[65] The presence of institutional investor shareholdings is a necessary (but insufficient) precondition for the financialisation of a firm. Institutional investors, through concentrating the stock ownership of dispersed asset holders, strengthen the voice of shareholders.

TABLE 16.1 *Institutional and non-institutional shareholdings in Big Tech*

Firm	Institutional investor shareholding (%)	Non-institutional investor shareholding (%)
Alphabet	80.4	19.6
Amazon	59.4	40.6
Apple	59.1	40.9
Facebook	81.4	18.6
Microsoft	72.2	27.8

Source: Yahoo Finance, as of 16 August 2021

Current accounts of the development of digital conglomerates do not take into consideration these internal (ownership structure and corporate governance-related) drives for the behaviour of Big Tech platforms. Nicolas Petit builds an argument for a competition law immunity of Big Tech platforms (which he calls 'moligopolies') distinguishing them from monopolies, as moligopolies 'channel sizeable amounts of resources into R&D' and invest in human resources, particularly entrepreneurship, thus indirectly referring to the fact that moligopolies retain their earnings and do not distribute.[66] However, this assertion is not factually supported. Marc Bourreau and Alexandre de Streel make the analogy with conglomerates, but they arrive at different conclusions than Petit, noting the gatekeeping role of Big Tech platforms and their ability to pre-empt competition by, from the outset, killing any opportunity for a potential competitor to emerge.[67] Similarly, Jean Tirole raises concerns as to the adoption of possible bundling practices that may exclude new entrants from the markets in which are active these conglomerates.[68] What is crucially missing from these analyses, however, is the consideration of the internal dynamics of each of these firms, as this is determined by their ownership structure and corporate governance, this time not in order to assess the broader social costs of digital platforms, but in order to gather elements that would help policy-makers to predict their behaviour.

We examine the ownership structure of Microsoft, Apple, Amazon, Alphabet, and Facebook. We observe that each firm is predominantly owned by institutional investors. Table 16.1 illustrates the proportion of GAFAM shares held by institutional investors versus non-institutional investors. Evidentially, institutional investors are major shareholders in GAFAM, cumulatively holding between three-fifths and four-fifths of their shares. However, these figures overstate the importance of institutional investors within the digital economy, especially within Google, Facebook,

[66] N Petit, 'Technology Giants, the Moligopoly Hypothesis and Holistic Competition: A Primer' (2016) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2856502, 65–66.

[67] M Bourreau and A de Streel, 'Conglomerates and EU Competition Policy', *Report of CERRE/CRIDS* (2019).

[68] J Tirole, 'Regulating the Disrupters', (livemint.com, 1 January 2019), www.livemint.com/Technology/XsgWUgy9tR4uaoME7xtITI/Regulating-the-disrupters-Jean-Tirole.html.

https://doi.org/10.1017/9781108899956.021 Published online by Cambridge University Press

TABLE 16.2 *Investor voting rights in Big Tech*

Firm	Investor	Voting rights (%)
Google	Larry Page*	26.3
	Sergey Brin*	25.3
	Eric Schmidt*	4.5
	Vanguard	3.0
	BlackRock	2.7
	John Doerr*	1.5
Facebook	Mark Zuckerberg*	57.7
	Eduardo Saverin*	6.9
	Dustin Moskovitz*	3.8
	Vanguard	2.7
	BlackRock	2.3
	Fidelity	1.8
Amazon	Jeffrey Bezos	14.0
	Vanguard	6.4
	BlackRock	5.5
Apple	Vanguard	7.8
	BlackRock	6.6
	Berkshire Hathaway	6.0
Microsoft	Vanguard	8.2
	BlackRock	6.8

Note: * indicates individual investor holding disproportionately weighted voting shares.
Source: Securities and Exchange Commission 2020 10-K filings.

and Amazon. Google and Facebook offer dual-class shareholdings. Share class differentiation reduces the strength of the link between observed shareholding and voting rights, skewing voting rights heavily towards firm insiders. Although Amazon's share structure is more traditional, with one vote per share, Jeff Bezos owns a clear majority of shares.[69] Microsoft and Apple also adhere to a traditional share structure, with institutional investors dominating share ownership and therefore voting rights. This is illustrated in Table 16.2, which shows the investors with notable voting rights in Google, Facebook, Amazon, Apple, and Microsoft, respectively. Although institutional investors hold a majority of stock in GAFAM, they are not necessarily endowed with the greatest voting rights. Rather, individuals,

[69] Alphabet has three classes of shares: Class A shares, which confer one vote per share; Class B shares, which confer 10 votes per share; and Class C shares, which do not confer any voting rights. Only Class A and Class C are available to purchase on public equity markets, with Class B owned only by insiders and not publicly traded. Similarly, Facebook has a dual class share structure: Class A shares conferring one vote per share and Class B shares conferring 10 votes per share. Class A can be publicly traded, while Class B is reserved for insiders. On dual class shareholding more broadly, see M Moore, 'Designing Dual-Class Sunsets: The Case for a Transfer-Centered Approach' (2020) 12(1) *Wm & Mary Bus L Rev* 93.

https://doi.org/10.1017/9781108899956.021 Published online by Cambridge University Press

typically founders, retain the most significant voting power in Alphabet, Facebook, and Amazon.

After institutional investor share ownership and voting power, the next aspect of firm financialisation to consider is how corporate executives are remunerated. In this regard, GAFAM companies may be viewed as more conventionally financialised. Although the chief executive officers of Alphabet, Amazon, Apple, and Facebook did not receive stock-based compensation in 2020, the other C-suite level executives at these firms did. All C-suite executives at Microsoft, including its chief executive officer, Satya Nadella, received stock-based compensation in 2020.

The final component of the hypothesised financialised firm index is to consider how much cash each of the GAFAM firms distributes to shareholders through dividend issuances and share buybacks. Ordinarily, there is a view that financialised firms distribute their cash to shareholders at the expense of making longer-term productive investments. Again, the situation with GAFAM is complex and does not fit neatly into this narrative. While both Microsoft and Apple buy back shares and issue dividends, Amazon does not buy back its own shares or issue dividends, and Alphabet and Facebook, although they buy their own stock, do not issue dividends. Furthermore, as is frequently pointed out, these companies also invest heavily in research and development. Digital platforms seem to constitute a hybrid of the old managerial 'retain and reinvest' and the financialisation 'downsize and distribute' models.

Based on the above observations, we find an interesting paradox – despite the tremendous goodwill that GAFAM enjoy in capital markets, they are not uniformly financialised in accordance with the three parameters noted above. Rather, we find a mixed picture, with the corporate governance regimes of Amazon, Facebook, and Google closer to the managerialism of the post-war conglomerates and Apple and Microsoft closer to the shareholder-centric firm that characterises financial capitalism. We hope that the exercise undertaken here, opening the black box of corporate governance, may promote a more nuanced understanding of GAFAM going forward.[70]

16.5 CONCLUSIONS

In this chapter, we explore a missing dimension of the discussion over Big Tech platforms in competition law: financialisation and its impact on competitive strategies and the social impact of Big Tech's economic power. We draw on insights from economics and corporate governance to offer a broader analysis of the five major digital platforms. We offer three contributions. First, we argue that financialisation and futurity have played a prominent role in GAFAM's expansion. Second, taking

[70] See McLean (n 8); P Regibeau and I Lianos, 'Digital Mergers: A Primer' (5 May 2021) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3837281 accessed 21 November 2021.

into account the social dimension of financialisation and the heavily skewed distribution of stock ownership in society, we argue that the distributional implications of Big Tech Power and of competition law enforcement, respectively, need to be assessed more systematically. We examine that the tool of agent-based modelling may contribute to this analysis and help us move beyond the traditional focus on consumer welfare. Third, we explore as an additional dimension of financialisation the role of ownership structure and corporate governance in influencing the broader economic model of behaviour followed by Big Tech platforms and we offer an empirical examination of GAFAM's corporate governance regimes, interrogating the conglomerate analogy frequently invoked in the digital economy,