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Balancing Competition and Stability in the Era of Gamified Investing: An Analysis of the Financial Conduct Authority's Competition Mandate on Mobile Trading Apps and its Impact on Financial Stability and Consumer Protection

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Abstract: The rise of mobile trading applications ('MTAs') has largely been facilitated by the Financial Conduct Authority's ('FCA') competition mandate and has democratised access to financial markets. However, the increased competition has led MTAs to deepen gamification techniques, ultimately encouraging impulsive trading behaviour amongst retail investors. This article examines how gamification, coupled with social media influence, poses significant financial risks, including market volatility and systemic risk. It suggests a proactive regulatory approach, emphasising investor education to mitigate risks. Whilst such efforts can reduce risks, they cannot eliminate them entirely and as such, the FCA faces a crossroads in how they wish to deal with their competing mandates of competition and consumer protection.

A. Introduction

Over the past few years, the financial industry has experienced significant disruption attributed to the rise of mobile trading apps ('MTAs').[1] These innovative apps, which allow individuals to trade securities using their smartphones, have quickly gained popularity among consumers due to their convenience, accessibility, and quick registration time.[2] The COVID-19 pandemic played a large role in the proliferation of this new way of investing, as lockdowns and social distancing measures made it challenging for individuals to access traditional brokerage services,[3] and as such, consumers are turning to MTAs as a primary means of investing in financial markets, with increased participation from retail investors, particularly the younger and unsophisticated demographic.[4]

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[1] George Chen and others, 'Super Apps—A New Wave of Disruption in Banking?' (*BCG Platinion*, 2021) <https://bcgplatinion.com/us/insights/super-apps-in-banking/> accessed 24 May 2023.

[2] ibid; Akshay Warikoo, 'Super Apps—A Wave of Digital Disruption in Banking' (*LinkedIn*, 9 March 2022) <https://www.linkedin.com/pulse/super-appsa-wave-digital-disruption-banking-akshay-warikoo/?trk=articles_directory> accessed 24 May 2023.

[3] Victoria Chiu and Moin A Yahya, 'The Meme Stock Paradox' (2022) 3 Corporate and Business Law Journal 51, 51.

[4] Padraig Belton, 'Why Small Investors Are Piling into Share-Trading Apps' *BBC News* (29 June 2021) <https://www.bbc.co.uk/news/business-57466918> accessed 24 May 2023.

10.14324/111.444.2052-1871.1851

As the popularity of MTAs continues to grow from consumers trading real-time securities in the comfort of their own home,[5] questions have been raised about the impact of these apps on financial stability and consumer protection, leading the International Monetary Fund ('IMF') to caution against the rapid growth of under-regulated, bank-like services some FinTech firms offer, arguing it can lead to excessive risk-taking by banks and higher systemic risk.[6] This was evidenced by the meme stock frenzy that saw the share prices of popular pop-culture securities skyrocket.[7] The rise in such securities correlated with the unification of retail investors, through social media platforms such as Reddit, to target large, institutional investors who had 'shorted' the security.[8] Largely facilitated through executing trades on MTAs, the aim of these investors was to send a message to Wall Street that the 'ordinary people' have power, with their success in doing so leading to questions whether market manipulation should be investigated.[9] The ability and staying power of this group to meet their goals caused genuine monetary issues for large firms by causing extreme price volatility, which culminated with billions in losses for Melvin Capital, marking the first successfully executed short-squeeze by retail investors on an institutional investor.[10]

The UK Government have historically been supportive of innovation, and support competition in the retail banking and financial services sector that disrupts traditional banking in positive ways.[11] Somewhat uniquely amongst countries' financial regulators, the UK regulator, the Financial Conduct Authority ('FCA'), is obligated to promote competition in the interests of consumers through a 'competition mandate.' Through this mandate, implemented in 2013, the FCA must balance the promotion of innovation, a main by-product of competition, whilst protecting consumers and ensuring financial stability.[12] They have sought to achieve this through their 2014 Project Innovate platform which was a precursor to their well-received regulatory sandbox.[13] These initiatives have provided an opportunity for FinTech firms to work

[5] Chiu and Yahya (n 3) 51.
[6] International Monetary Fund Monetary and Capital Markets Department, *Global Financial Stability Report, April 2022: Shockwaves from the war in Ukraine test financial system's resilience* (International Monetary Fund 2022) 67–68 <https://elibrary.imf.org/openurl?genre=book&isbn=9798400205293> accessed 26 April 2023.
[7] Iris HY Chiu, 'Social Disruptions in Securities Markets–What Regulatory Response Do We Need?' (2021) 28 Richmond Journal of Law & Technology 46, 47–48.
[8] ibid 48–49.
[9] ibid 47, 69.
[10] ibid 58.
[11] Mary Starks, 'Disruptive Innovation in Financial Markets' (OECD, Paris, 26 October 2015) <https://www.fca.org.uk/news/speeches/disruptive-innovation-financial-markets> accessed 21 May 2023.
[12] Financial Conduct Authority, 'FCA Mission: Our Approach to Competition' (2017) 9.
[13] Christopher Woolard, 'Innovating for the Future: The next Phase of Project Innovate' (Innovate Finance Global Summit, London, 10 April 2017) <https://www.fca.org.uk/news/speeches/innovating-future-next-phase-project-innovate> accessed 3 June 2023.

10.14324/111.444.2052-1871.1851

directly with the regulators to help tackle any regulatory barriers FinTech firms face.[14] However, finding the right balance between balancing innovation and regulation is difficult. Where too much regulation can be said to stifle innovation, conversely too little regulation can lead to system risk within the financial sector.[15]

Regulatory changes under the Markets in Financial Instruments Directive II ('MiFID II') and Electronic Identification, Authentication and Trust Services ('eIDAS') have paved the way for MTAs to not only exist, but grow the industry at a fast rate, attracting and fostering many new and innovative firms in this space.[16] This increased competition has created an environment where firms must innovate to remain competitive and as such, has led MTAs to introduce innovative, and often addictive, gamification features such as social trading, fractional share trading, and personalised investment recommendations, further enhancing the appeal of these apps to a wider audience, in particular retail investors.[17] Whilst the convenience of mobile investing is clear, a more important benefit, as advocates argue, is the increased accessibility to the securities markets that previously did not exist for retail investors.[18] Moreover, supporters argue MTAs, which often feature zero or low commission trading, have provided an avenue to democratise investment, meaning retail shareholder participation can help shape corporate polices to match their social and cultural preferences.[19] Fisch goes further and argues that retail investors can help reduce market concentration by institutional investors, allowing retail investors to help shape their country's economic development.[20]

Whilst these benefits could be considered exciting in the world of investing, MTAs also pose new challenges to financial stability and consumer protection through different risk drivers. This paper will seek to examine the balance between the benefits of MTAs the risk drivers they present, all whilst considering a favourable regulatory framework for MTAs that allow them to compete and innovate.

As can be deduced from above, there is at least a contributory connection between the rise of MTAs and the meme stock volatility, with many acknowledging the risk of price volatility being systemically contagious.[21] Whilst there is an abundance of academic literature

[14] International Monetary Fund (n 6) 67–68; ibid.
[15] Hilary J Allen, 'Experimental Strategies for Regulating Fintech' (2020) 3 Journal of Law & Innovation 1, 6–7.
[16] Belton (n 4).
[17] ibid.
[18] Dhruv Aggarwal, Albert H Choi and Yoon-Ho Alex Lee, 'Meme Corporate Governance' (2023) Southern California Law Review (forthcoming) <https://www.ssrn.com/abstract=4347885> accessed 26 April 2023.
[19] ibid.
[20] Jill E Fisch, 'GameStop and the Reemergence of the Retail Investor' (2022) 102 Boston University Law Review 1799, 1805.
[21] Chiu, 'Social Disruptions in Securities Markets' (n 7) 59.

10.14324/111.444.2052-1871.1851

analysing investor behaviour during this frenzy, and whether regulation adequately protects them, this paper aims to dig deeper and identify the root causes of why such behaviour existed in the first place. To do so, Chapter B first engages with the FCA's competition mandate's goals and objectives whilst discussing the delicate balance of innovation and financial stability. The Chapter then goes on to analyse the effect of competition in the financial services industry by looking at its effect on investor protection, systemic risk, and behavioural biases, before briefly acknowledging the FCA's enforcement ability.

Chapter C then analyses the regulatory changes affecting cross-border harmonisation, broker-dealer registration, fee structures, and the simplification of account opening procedures, and determine whether this has helped facilitate the competitive mobile trading app space, and subsequent growth, whilst assessing the positives of MTAs in consideration of these changes.

Chapter D investigates the risk MTAs pose by identifying gamification and behavioural biases, investor education and influence of social media, and access to complex financial instruments as main risk drivers that target the pillars of financial stability — systemic risk, investor protection, and market concentration.

Chapter E then engages with the FCA's enforcement mechanisms and analyses the FCA's ability to mitigate the risk drivers mentioned, linking current academic comment on regulating FinTech to how it can be applied in the mobile trading app industry. This paper then offers suggestions on how to improve regulations, limitations of this paper, and outlines where future research should be directed.

B. COMPETITION AND INNOVATION IN FINANCIAL SERVICES: A REVIEW OF ITS ROLE IN FINANCIAL STABILITY AND CONSUMER PROTECTION

1. *The FCA's competition mandate: Goals, objectives, and risks*

a) *Introduction*

Competition plays a large role in determining the innovative capabilities of an industry.[22] The FCA defines competition as a rivalry between suppliers that must compete to attract and keep customers.[23] The FCA, and general academic consensus, argue that an increase in competition generally drives up quality standards, reduces costs, drives innovation, opens markets to new firms, and overall, stimulates economic growth.[24] Claessens, however, argues that the view that competition is 'unambiguously good' is naive, adding that unfettered competition in the

[22] Starks (n 11).
[23] Financial Conduct Authority, 'FCA Mission' (n 12) 6.
[24] ibid; Hilary J Allen, *Driverless Finance* (Oxford University Press 2022) 212 <https://academic.oup.com/book/41463/chapter/352845425> accessed 3 March 2023.

financial services industry is not necessarily a good idea considering the unique features of financial services.[25] Allen agrees and argues that the efficiency and innovation that comes with competition has drawbacks.[26] For example, increased competition in banking may hurt traditional banks' profits and lead to financial stability concerns as they will need to take on more risk to be competitive.[27] As such, Allen concedes that balancing competition and financial stability is complex and, in the growing area of FinTech, has unknown outcomes.[28]

To address these complexities, under section 1b of The Financial Services and Markets Act 2000 ('FSMA 2000') as amended, the FCA has been granted a competition mandate, a rarity amongst financial regulators, to ensure effective competition in financial services whilst achieving other core functions of financial stability and consumer protection.[29] Whilst the many positives of competition are briefly noted above, the scope of this paper focuses on the FCA's competition mandate and their support for innovation in financial services, specifically with regards to FinTech. As previously mentioned, academic literature has cautioned that innovation often creates a tension with financial stability and consumer protection.[30] As such, the FCA finds themselves in a complex predicament: foster too much innovation and negatively impact financial stability and consumer protection or overregulate and stifle innovation.

This chapter will first define financial stability and FinTech. Second, this chapter identifies key areas related to financial stability and consumer protection and explores how competition affects them. Finally, this chapter notes the FCA's enforcement capabilities in the financial services space, with a full analysis in chapter E with regards to MTAs.

b) *Terminology*

Allen argues that neither financial stability nor FinTech has definitions that meet a consensus.[31] Allen criticises legislators for not specifically defining financial stability and notes the problematic 'know it when I see it' approach arguing laws need to have a clearly defined goal

[25] Stijn Claessens, 'Competition in the Financial Sector' (2009) 24 World Bank Research Observer 83, 83–84.
[26] Allen, 'Experimental Strategies for Regulating Fintech' (n 15) 6.
[27] Allen, *Driverless Finance* (n 24) 212; Antonio Pascual and Fabio Natalucci, 'Fast-Moving FinTech Poses Challenge for Regulators' (*IMF Blog*, 13 April 2022) <https://www.imf.org/en/Blogs/Articles/2022/04/13/blog041322-sm2022-gfsr-ch3> accessed 19 May 2023.
[28] Allen, *Driverless Finance* (n 24) 212; Pascual and Natalucci (n 27).
[29] The Financial Services and Markets Act 2000; Financial Conduct Authority, 'FCA Mission' (n 12) 5, 8; Eilís Ferran, 'International Competitiveness and Financial Regulators' Mandates: Coming Around Again in the UK' (2023) 9(1) Journal of Financial Regulation 30, 46.
[30] Hilary J Allen, 'Sandbox Boundaries' (2020) 22 Vanderbilt Journal of Entertainment and Technology Law 299, 299; Allen, *Driverless Finance* (n 24) 212.
[31] Allen, *Driverless Finance* (n 24) 5.

or face the possibility laws promoting financial stability will be rendered illegitimate.[32] This reasoning has merit when even The Bank of England's webpage entitled, 'What is financial stability' lacks a clear definition, but mentions all the cliches one can associate with financial stability; for example, regulation, stress tests, and in this specific example, counter cyclical capital buffer.[33] The latter provides a good example of Allen's targeted criticism in which she argues financial stability regulation cannot be aimed towards financial institutions only.[34] The European Central Bank ('ECB') gives a more balanced definition. The ECB defines stability as a financial system composed of both financial markets and infrastructures, that are capable of withstanding shocks and therefore minimise disruption.[35] This falls in line with Allen's working definition of financial stability, one that this paper will adopt, in which financial stability should have 'sustainable economic growth' as the main goal and that financial stability regulation should still be able to 'manage risks, invest, borrow, and make payments' in the event of a shock.[36]

Allen notes that FinTech firms typically rely on technologies that have been developed in the past decade.[37] Allen further notes that FinTech is more of an 'umbrella' term than encompasses many different business models, such as high-frequency trading, cryptoasset payments, marketplace lending, and crowdfunding, all using mobile phones.[38] Under this umbrella, it stands to reason that MTAs would be considered a FinTech innovation and will be treated as such throughout this paper.

In addition to these important concepts, the distinction between consumer protection and investor protection must briefly be addressed. Consumer protection focuses on ensuring the fair treatment and rights of consumers in their interactions with businesses and service providers.[39] This includes consumer protection regulations including product safety, advertising standards, and dispute resolution mechanisms. Investor protection, however, is concerned with safeguarding individuals and their investments in different financial products.[40]

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[32] ibid 6.

[33] Bank of England, 'What is Financial Stability?' <https://www.bankofengland.co.uk/explainers/what-is-financial-stability> accessed 3 June 2023.

[34] Allen, *Driverless Finance* (n 24) 7.

[35] Peter Morgan and Victor Pontines, 'Financial Stability and Financial Inclusion' (2014) ADBI Working Paper 488 <http://www.ssrn.com/abstract=2464018> accessed 3 June 2023.

[36] Allen, *Driverless Finance* (n 24) 7.

[37] ibid 8.

[38] ibid.

[39] Financial Conduct Authority, 'Protecting Consumers' (19 July 2022) <https://www.fca.org.uk/about/what-we-do/protecting-consumers> accessed 5 June 2023.

[40] Grace Oliver, 'How Is the FCA Protecting Investors?' *Morning Star* (28 September 2021) <https://www.morningstar.co.uk/uk/news/215652/how-is-the-fca-protecting-investors.aspx> accessed 5 June 2023.

10.14324/111.444.2052-1871.1851

This includes disclosure requirements, the regulation of financial advisors, and the prevention of fraudulent activities.[41] Ultimately, investor protection is a narrower focus relating to market participation, where consumer protection is an all-encompassing umbrella covering consumer transactions.[42]

2. *Effect of Competition in the Financial Services industry*

a) *Innovation and Investor Protection*

Competition encourages firms to develop new and innovative products and services to differentiate themselves and attract customers.[43] This leads to increased investment in research and development, which can result in the creation of new financial technologies and solutions that can enhance the efficiency of financial markets.[44] For example, the introduction of open banking, a process in which personal banking information can be shared with third parties, has led to the emergence of a range of new financial services providers in the UK, such as Funding Circle (business loans), Dopay (cashless payroll), and By Miles (insurance by the mile).[45] Furthermore, this can improve investor protection by adding more rigorous risk assessments and disclosures, which can help reduce the potential for unexpected losses.[46] These companies have been able to use open banking to create innovative products and services that were previously not possible.[47] This is because open banking provides a secure way for consumers and businesses to work with regulated third-party providers in the transmission of payment account data, which then utilises the data to create these innovative products.[48]

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[41] Wai Yee Wan, Qinzhe Yao and Andrew Godwin, 'When Is an Individual Investor Not in Need of Consumer Protection? A Comparative Analysis of Singapore, Hong Kong, and Australia' (*Oxford Business Law Blog,* 27 January 2020) <https://blogs.law.ox.ac.uk/business-law-blog/blog/2020/01/when-individual-investor-not-need-consumer-protection-comparative> accessed 5 June 2023.

[42] ibid.

[43] Allen, *Driverless Finance* (n 24) 212; Pascual and Natalucci (n 27); Christopher Woolard, 'Competition and Innovation in Financial Services: The Regulator's Perspective' (Cheung Kong Graduate School of Business, Shenzhen, 11 May 2017) <https://www.fca.org.uk/news/speeches/competition-and-innovation-financial-services-regulator-perspective> accessed 3 June 2023.

[44] OECD, 'Financial Markets, Insurance and Pensions: Digitalisation and Finance' 10; ibid.

[45] Global Data Financial Services, '
The open banking movement is one step closer to insurance as insurtech By Miles gains license
' (*Life Insurance International*, 4 February 2020) <https://www.lifeinsuranceinternational.com/comment/open-banking-insurtech-miles/> accessed 3 June 2023; Eric Johansson, '"We Are Not a Bank" Says CEO of Digital Banking Startup Dopay' (*Verdict*, 21 September 2021) <https://www.verdict.co.uk/ceo-dopay/> accessed 3 June 2023; Funding Circle, 'Open Banking Explained' (*Funding Circle,* 23 July 2020) <https://www.fundingcircle.com/uk/resources/news/business-news/open-banking/> accessed 3 June 2023.

[46] Abilio Rodrigues, 'Risk Assessment and the Open Banking Revolution' (*GoCardless,* May 2023) <https://gocardless.com/guides/posts/risk-assessment-open-banking/> accessed 5 June 2023; Joint Regulatory Oversight Committee, 'Recommendations for the next Phase of Open Banking in the UK' (17 April 2023) 4, 12 <https://assets.publishing.service.gov.uk/media/643e608e22ef3b000c66f3bf/JROC_report_recommendations_and_actions_paper_April_2023.pdf > accessed 31 July 2024.

[47] Joint Regulatory Oversight Committee (n 46) 10.

[48] ibid 10, 14.

The FCA's Innovation Hub, and the subsequent creation of the 'regulatory sandbox' — a controlled environment where FinTech firms can experiment with new ideas under the regulator's supervision — has also played a significant role in fostering innovation in the financial services industry whilst aiming to enhance investor protection.[49] The regulatory sandbox helps foster FinTech innovation by reducing or temporarily remove existing consumer protection and prudential regulations that would otherwise apply to existing financial firms.[50] By providing a safe environment for firms to test and develop new products and services in, the FCA has created a way for innovative firms to test products with real customers for limited duration. The idea behind this is to bridge the knowledge gap between regulators and innovators, with the hope they can find a solution that is beneficial to both sides.[51] This can help firms to identify and address potential risks and ensure that their products and services are suitable for consumers.[52] The effectiveness of reducing risk, however, has been criticised. Schilling de Carvalho and Papiasse cite Brown and Dóra arguing that that the sandbox has been 'designed in a way that advances risk washing of fintech even if it is disguised as risk taming' and suggest that the rapid diffusion of such innovation-enabling regulation may lead to financial regulators to overextend themselves of their core regulatory objectives.[53]

Allen argues that policymakers have adopted sandboxes with the goal of promoting efficiency and competition at the expense of consumer protection and financial stability.[54] However, it is important to note that the sandbox environment also allows regulators to closely monitor and guide these innovations, potentially leading to safer and more effective financial products in the long run.[55] Allen notes that policymakers hope this incentivises firms to bring their innovation to the UK jurisdiction to gain valuable tax revenue and employment opportunities.[56] Allen concedes, however, adding that competition can result in a wider range of products and services being offered to consumers.[57] This benefits consumers by giving them more choice. For instance, competition within the credit card industry has led to a variety of products tailored to different consumer needs, from cash-back cards for everyday purchases,

[49] Allen, 'Sandbox Boundaries' (n 30) 306.
[50] ibid 299–300.
[51] Allen, 'Experimental Strategies for Regulating Fintech' (n 15) 5.
[52] ibid 6.
[53] Pedro Schilling de Carvalho and Daphnée Papiasse, 'The Regulatory "Plumbing" of Innovation-Enablers: A Case for Accountability Mechanisms' (2023) 4, 13 <https://doi.org/10.17863/CAM.94502> accessed 31 July 2024; Eric Brown and Piroska Dóra, 'Governing Fintech and Fintech as Governance: The Regulatory Sandbox, Riskwashing, and Disruptive Social Classification' (2022) 27(1) New Political Economy 19, 19.
[54] Allen, 'Experimental Strategies for Regulating Fintech' (n 15) 6; Allen, 'Sandbox Boundaries' (n 30) 307.
[55] Allen, 'Sandbox Boundaries' (n 30) 306–07.
[56] ibid 306.
[57] ibid.

10.14324/111.444.2052-1871.1851

to travel cards offering points for flights and hotels.[58] Increased product diversity also helps to promote financial inclusion by making it easier for consumers with different financial needs and circumstances to access financial products and services.[59]

Furthermore, the increase in innovative FinTech has enabled more sophisticated tools for investor protection, such as robo-advisors and automated monitoring systems.[60] The European Securities and Markets Authority ('ESMA') defines robo-advice as 'the provision of investment advice or portfolio management services, (in whole or in part) through automated or semi-automated systems used as a client-facing tool.'[61] Steennot argues that robo-advice offers additional protection as users investors are required to go through a suitability test.[62] Once the client has a risk profile, if the investor's risk profile does not match the financial instrument, the investor cannot invest, nor can they change their risk profile.[63] Whilst Steennot acknowledges some downsides such as cost to implement, low-level of financial literacy, and preference of investors to have some sort of human interaction, Steennot goes on to question the limited growth of robo-advisors to its counterpart, MTAs. Steennot makes the argument that investors using MTAs are more vulnerable to unsuitable transactions, especially since they are influenced by social media and are not subject to the same suitability test.[64] Therefore, whilst fostering innovation through competition does present a challenge, it can simultaneously enhance investor protection through additional consumer choice and industry efficiency.[65]

b) *Systemic Risk*

Akins et al argues that an increase in competition can promote market efficiency and reduce the likelihood of individual firm failing by encouraging firms to improve risk management and increase transparency.[66] This is echoed by Anginer et al where they argue that an increase in competition encourages banks to diversify risk.[67] However, Akins et al note that excessive

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[58] ibid 303; 'Designing Credit Card Rewards for Competitive Advantage' (*Marqeta,* 23 March 2022) <https://www.marqeta.com/blog/designing-credit-card-rewards-for-competitive-advantage> accessed 6 June 2023.

[59] Iris HY Chiu, 'The Disruptive Implications of Fintech-Policy Themes for Financial Regulators' (2016) 21(1) Journal of Technology Law & Policy <http://www.ssrn.com/abstract=2812667> accessed 3 June 2023.

[60] Reinhard Steennot, 'Robo-Advisory Services and Investor Protection' (2021) 15(3–4) Law and Financial Markets Review 262, 262–63.

[61] ibid 264; European Securities and Markets Authority, 'Guidelines on Certain Aspects of the MiFID II Suitability Requirements' (ESMA35-43–3172, 2023).

[62] Steennot (n 60) 263.

[63] ibid 270.

[64] ibid 263–64.

[65] Iris HY Chiu, 'A Rational Regulatory Strategy for Governing Financial Innovation' (2017) 8(4) European Journal of Risk Regulation 743, 754–755.

[66] Brian Akins and others, 'Bank Competition and Financial Stability: Evidence from the Financial Crisis' (2016) 51(1) Journal of Financial and Quantitative Analysis 1, 1, 3.

[67] Deniz Anginer, Asli Demirguc-Kunt and Min Zhu, 'How Does Bank Competition Affect Systemic Stability?' (2012) World Bank Group Policy Research Working Paper No WPS5981, 1.

10.14324/111.444.2052-1871.1851

competition can also lead to systemic risk and financial instability by incentivising firms to take on more risk to remain competitive.[68] Anginer et al highlight this can be mitigated through the use of effective regulation by way of increasing the amount of information available to enable better monitoring, greater capital requirements, and activity restrictions - which build on similar conclusions by Claessens' post Global Financial Crisis paper ('GFC').[69]

However, competition can create challenges for regulators in enforcing these measures. Firms can engage in regulatory arbitrage or operate in jurisdictions with less stringent regulations.[70] Danièle Nouy, Chair of the Supervisory Board of the European Central Bank notes that competition amongst banks is fierce, and therefore they attempt to skirt regulations to save costs.[71] Harmonising regulation is one way of combatting regulatory arbitrage, but as Nouy points out, there is still work to be done in this area.[72] This is especially relevant in the context of Brexit, with FinTech and its cross-border ability being another concern.[73] Whilst FinTech challenges traditional banks, they may be positioned better to seek out more friendly regulatory jurisdictions.[74] As noted in the next section, whilst effective regulation can manage systemic risk, behavioural biases in consumer decision-making pose further challenges to maintaining financial stability in a competitive environment.

c) *Behavioural Biases and Irrational Decision Making*

The OECD argue that an increase in competition in the marketplace is not beneficial in protecting consumers due to consumer bias.[75] It is their view that firms actively seek to exploit these biases to their advantage and strategically design their pricing structures to take advantage of consumer overconfidence and limited ability to process information.[76] This allows them to increase prices and extract more profit. For example, the complex tariff structures in the mobile phone industry and deceptive pricing in rental markets loan offerings

68 Akins and others (n 66) 2.
69 Anginer, Demirguc-Kunt and Zhu (n 67) 16; Claessens (n 25) 85.
70 Danièle Nouy, 'Gaming the Rules or Ruling the Game? – How to Deal with Regulatory Arbitrage' (33rd SUERF Colloquium, Helsinki, 15 September 2017) <https://www.bankingsupervision.europa.eu/press/speeches/date/2017/html/ssm.sp170915.en.html> accessed 3 June 2023.
71 ibid.
72 ibid.
73 ibid.
74 ibid.
75 OECD, 'Integrating Consumer Behaviour Insights in Competition Enforcement' (2022) OECD Competition Policy Roundtable Background Note, para 3.1.
76 ibid; Maurice E Stucke, 'Is Competition Always Good?' (2013) 1(1) Journal of Antitrust Enforcement 162, 176.

10.14324/111.444.2052-1871.1851

are examples in which it is hard for the average consumer to fully understand product there are buying due to information overload and lack of ability.[77]

The OECD note that this goes against the traditional belief that increased competition can help solve the issue of consumer bias.[78] Moreover, evidence suggests that firms will continue to exploit biases rather than revealing them or helping fix them so long as they are profitable.[79] As such, firms have an incentive issue to deviate from their model and inform consumers as that would reduce their profits.[80]

However, despite these challenges, competition still holds the potential to generate benefits and alleviate the negative impact of consumer biases.[81] Increased competition intensifies competitive pressures, forcing firms to lower upfront prices in order to attract customers with biases.[82] While competition may not completely offset the harm caused by biases, the ‘waterbed’ effect of competition helps reduce upfront prices and partially mitigate the adverse effects.[83] Additionally, the presence of intermediaries like price comparison websites can contribute to reducing the impact of biases on competition.[84] Whilst behavioural biases can negatively impact consumers, the FCA employs several mechanisms to mitigate these risks and maintain a competitive market.

d) *Mitigating risks*

The FCA have limited tools at its disposal to mitigate risk via enforcement mechanisms. The FCA mandate gives the power to conduct market studies and investigations into potential competition issues, as well as the ability to take enforcement action against anti-competitive behaviour.[85] These measures are essential to maintaining a competitive market that benefits consumers whilst ensuring financial stability and consumer protection.[86] These enforcement mechanisms will be explored in depth in chapter E with analysis of how they can apply to the risk drivers MTAs create.

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[77] OECD (n 75) para 3.1; Stucke (n 76) 176.
[78] OECD (n 75) para 3.2.
[79] ibid.
[80] ibid.
[81] ibid para 3.3; Stucke (n 76) 177.
[82] OECD (n 75) para 3.3.
[83] ibid.
[84] ibid.
[85] Financial Conduct Authority, ‘Enforcement’ (19 July 2022) <https://www.fca.org.uk/about/how-we-regulate/enforcement> accessed 6 June 2023.
[86] ibid.

10.14324/111.444.2052-1871.1851

3. *Summary*

This chapter analysed the complex interplay between competition, innovation, and the FCA's role as a regulator with a focus on the FinTech industry. A nuanced analysis was conducted to draw out the implications of competition on key financial stability and consumer protection elements – systemic risk, investor protection, and market concentration. This chapter also considered consumer psychology by addressing behavioural biases on consumer decision-making in the financial industry. The chapter concluded by introducing the FCA's enforcement mechanisms and the need for balance in regulation, which will be discussed more thoroughly in chapter E.

C. BENEFITS OF MOBILE TRADING APPS AND THE REGULATORY ENVIRONMENT THAT ENABLES DEVELOPMENT AND GROWTH

1. *Introduction*

Having examined the FCA's regulatory role in the context of competition, innovation, financial stability, and consumer protection in Chapter B, Chapter C explores prominent FinTech innovations such as MTAs, and how the regulatory environment has helped foster their development and growth whilst aiming to boost retail investment activity in the capital markets. The EU wants retail investors to be more active in the capital markets as it helps stimulate private investment to help grow the wider EU economy.[87] As such, it can be inferred that the EU should be supportive of MTAs which have helped retail investors invest through easy sign-up processes, mobile-friendly interfaces, and fractional trading which allows investors to spread out their investment rather than buying a single share.[88]

Whilst the convenience benefit to consumers is obvious, a wider positive can be argued, too. Ricci and Sautter argue that millennials, who make up a large portion of retail investors, bring 'distinctive values to investing' and are 'more apt to invest pursuant to their ESG values.'[89] The authors argue that the younger, more socially conscious investor will likely invest in companies they believe care about ESG issues, or values they care about.[90] For example, the authors cite data from Public, a mobile trading app, where they state that 75% of their investors are making first-time, long-term investments with companies that align with

[87] European Commission, 'Capital Markets Union: Commission Proposes New Rules to Protect and Empower Retail Investors in the EU' (24 May 2023) <https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2868> accessed 3 June 2023.
[88] Belton (n 4).
[89] Sergio Alberto Gramitto Ricci and Christina M Sautter, 'Corporate Governance Gaming: The Collective Power of Retail Investors' (2021) 22 Nevada Law Journal 51, 77.
[90] ibid 77–78.

10.14324/111.444.2052-1871.1851

their values.[91] They suggest that millennials will be able to engage with corporate governance issues and ultimately influence the direction of such governance.[92] Fisch holds a similar view and argues that this so-called 'citizen capitalism' may boost the voice of ordinary citizens with respect to corporate decisions.[93] Aggarwal et al are less optimistic and cite empirical data that shows retail investors do not engage with management to help influence governance outcomes, nor do the companies they invest in show any sort of ESG score improvement.[94] However, this author believes it is likely too early to draw hard conclusions, but does find it plausible that retail investors may become more engaged with shareholder duties as their knowledge of such duties grows.

Whilst the potential benefits of MTAs seem to have yet to fully materialise, the benefits seen now should not be diminished.[95] To realise these benefits, changes were made to foster a regulatory environment that allowed for the creation and proliferation of MTAs to the level they are today. This chapter will analyse two important pieces of legislation that have helped facilitate the entry and growth of MTAs, MiFID II and its impact on harmonisation, broker-dealer registration, margin trading reform, and fee structures and the eIDAS, where the impact of the simplification of account opening procedures will be analysed.

2. *Regulatory changes*

a) *MIFID II: Cross-border regulations and Harmonisation*

The implementation of MiFID II in the EU, and in the UK for the time being, due to Brexit, and ongoing negotiations in this area,[96] aimed to improve the competitiveness of the EU/UK's financial markets through the harmonisation and standardisation of financial market regulations across Member States.[97] Key objectives of MiFID II are to promote investor protection, enhance transparency, and increase market efficiency.[98] As a result, a consistent framework for financial services and investment activities has now been harmonised across the EU/UK, eliminating barriers that hindered cross-border trading and investment.[99] Now,

[91] ibid 78.
[92] ibid 78, 83.
[93] Aggarwal, Choi and Lee (n 18) 9.
[94] ibid 35.
[95] Dennis M Kelleher, Jason Grimes and Andres Chovil, 'Securties — Democratizing Equity Markets with and without Exploitation: Robinhood, GameStop, Hedge Funds, Gamification, High Frequency Trading and More' (2022) 44 Western New England Law Review 51, 75, 93.
[96] Sandy Collins, Thomas Donegan and Barnabas Reynolds, 'The Brexit Freedoms Bill and the MiFID Override for Financial Services Regulation' (*JD Supra*, 25 October 2022) <https://www.jdsupra.com/legalnews/the-brexit-freedoms-bill-and-the-mifid-2018574/> accessed 6 June 2023.
[97] European Commission, 'Markets in Financial Instruments Directive (MiFID II): Frequently Asked Questions' (15 April 2014) <https://ec.europa.eu/commission/presscorner/detail/en/MEMO_14_305> accessed 4 June 2023.
[98] ibid.
[99] ibid.

10.14324/111.444.2052-1871.1851

investors can access markets and trade securities in different jurisdictions more easily, allowing MTAs to offer services across the EU/UK and benefit from a larger customer base and increased market opportunities.[100] Most importantly, MiFID II has introduced standardised minimum requirements and procedures for mobile trading app providers, ensuring that they meet consistent standards of investor protection, disclosure, and transparency across the EU.[101] This harmonisation has also facilitated regulatory cooperation and information exchange between Member States, enhancing supervision and enforcement of regulations.[102]

The harmonisation of regulations has contributed to the development of technology-driven solutions and advancements in FinTech, or more specifically, MTAs.[103] MiFID II has sought to improve competition amongst providers of financial services and as such, led to greater innovation in the field.[104] As already noted, innovation in MTAs has introduced enhanced trading functionalities, improved user experiences, and advanced risk management tools within MTAs.[105] However, despite the positive impacts, challenges remain in fully realising the potential of cross-border trading under MiFID II. Variations in local implementation and interpretation of the directive among Member States can still present barriers to cross-border activities.[106] There may be differences in investor protection rules, regulatory reporting requirements, and legal frameworks that can complicate market access for mobile trading app providers.[107]

Furthermore, the complex nature of MiFID II regulations pose significant operational hurdles for MTAs, particularly when attempting to meet the organisational requirements of Article 16, ensuring the appropriateness of advice or financial instruments for clients in Article 25, and ensuring best execution of client orders in Article 27.[108] These complex Articles, compounded by cross-border operation, require substantial investments in technology,

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[100] ibid.

[101] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (ESMA35-42–1227, 2022) ss 3, 4, 8 <https://www.esma.europa.eu/sites/default/files/library/esma35-42-1227_final_report_on_technical_advice_on_ec_retail_investments_strategy.pdf> accessed 19 May 2023.

[102] Marnix Wallinga, *EU Investor Protection Regulation and Liability for Investment Losses: A Comparative Analysis of the Interplay between MiFID & MiFID II and Private Law* (Springer 2020) 42 .

[103] Miguel Amaral, 'Case 2. Digitalisation in Finance: Regulatory Challenges and Regulatory Approaches' in *Case Studies on the Regulatory Challenges Raised by Innovation and the Regulatory Responses* (OECD 2021) <https://www.oecd-ilibrary.org/governance/case-studies-on-the-regulatory-challenges-raised-by-innovation-and-the-regulatory-responses_8fa190b5-en> accessed 4 June 2023.

[104] European Commission (n 97).

[105] ibid.

[106] Wallinga (n 102) 57–58.

[107] ibid.

[108] Directive 2014/65/EU of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast) [2014] OJ L173/349, arts 16, 25, 27.

10.14324/111.444.2052-1871.1851

infrastructure, and expertise.[109] As such, these compliance burdens may disproportionately impact smaller firms and start-ups in the mobile trading app space, potentially reducing their ability to innovate and compete effectively.[110]

b) *Broker-dealer registration*

In the UK and EU, MiFID II introduced significant changes that have helped facilitate the entry of new financial market participants, including those who offer mobile trading app services. Prior to MiFID II, to offer brokerage services, firms were required to complete a comprehensive authorisation procedure, but under MiFID II, however, the regulatory requirements were restructured in a way that allows more diverse firms to operate within this area.[111] As such, certain types of firms, such as those offering 'execution-only' services, are able to operate without the need for full authorisation because they transact on behalf of the client without providing advice or personal recommendations.[112]

Whilst not necessarily a form of deregulation, the changes under MiFID II has reduced regulatory barriers for these specific firms to operate and as such, allows new, less-funder firms FinTech firms to enter the space. Whilst the process of registration is not necessarily easier, the requirements of who can offer these services has been reduced under the exempted categories in Article 2.[113]

ESMA, however, has had to issue guidelines for firms providing execution-only services to ensure consistency in meeting the requirements of appropriateness and execution-only services across Member States and therefor provides a crucial step towards ensuring supervisory convergence in the oversight of these services in the EU and UK. [114]

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[109] Attracta Mooney, '€2.5bn Cost of MiFID II Rattles Asset Managers' *Financial Times* (27 January 2017) <https://www.ft.com/content/ba243304-e224-11e6-9645-c9357a75844a> accessed 7 June 2023.

[110] ibid.

[111] European Securities and Markets Authority, 'MiFID II Supervisory Briefing Supervision of Cross-Border Activities of Investment Firms' (ESMA35-36-2780, 2022) 10 <https://www.esma.europa.eu/sites/default/files/library/esma35-36-2780_mifid_ii_supervisory_briefing.pdf> accessed 7 June 2023; European Securities and Markets Authority, 'Guidelines On Certain Aspects of the MiFID II Appropriateness and Execution-Only Requirements' (ESMA35-43–3006, 2022) 7 <https://www.esma.europa.eu/sites/default/files/library/esma35-43-3006_gls_on_certain_aspects_of_the_mifid_ii_appropriateness_and_execution-only_requirements_en.pdf> accessed 7 June 2023.

[112] European Securities and Markets Authority, 'MiFID II Supervisory Briefing Supervision of Cross-Border Activities of Investment Firms' (n 111) 12; European Securities and Markets Authority, 'Guidelines On Certain Aspects of the MiFID II Appropriateness and Execution-Only Requirements' (n 111) 7.

[113] European Securities and Markets Authority, 'Guidelines On Certain Aspects of the MiFID II Appropriateness and Execution-Only Requirements' (n 111) 5, 19, 22.

[114] ibid 5.

10.14324/111.444.2052-1871.1851

c) *Fee structures*

The ability to trade using a low/free commission-based model is another significant change that has helped the mobile trading app industry flourish.[115] Prior to this change, investors were charged a fee for each trade which retail investors found expensive if executing many trades.[116] As a result, this presented an added barrier to entry for many retail investors.[117]

To promote greater competition and consumer protection, regulators implemented changes to the fee structures used in these trades. MiFID II introduced new rules on fees requiring firms to disclose all costs associated with trading, including execution fees, clearing fees, and all other charges that may apply.[118] As such, investors benefitted from this increased disclosure as they were now able to compare costs across different trading platforms and make informed decisions about where to invest their money.[119] As a result of this increased competition, investors have particularly benefitted from these low/free commission models and as such, has made trading securities more accessible and affordable to a wider range of consumers.[120] Such low fees have allowed investors to trade more frequently and take advantage to market volatility, potentially maximising their returns whereas in the past this would be unattainable.[121]

However, this low fee structure has opened risks to consumers. Jacobs, along with Newall and Weiss-Cohen, argue that this model increased risky investment behaviour and further state that investors are more likely to engage in short-term trading or take on high levels of leverage to maximise their returns.[122]

d) *Simplification of account opening procedures*

The eIDAS Regulation which came into effect in 2018 in the EU established a framework for the mutual recognition of electronic identification and trust services across the EU, making it

[115] Martin Arnold, 'Zero-Commission Trading in Europe Faces Scrutiny by EU Markets Watchdog' *Financial Times* (25 February 2021) <https://www.ft.com/content/3254a7c5-3c9b-468c-9ed4-a324f5e42474> accessed 7 June 2023.
[116] ibid.
[117] ibid.
[118] MiFID II art 24(4); European Commission (n 97); UK Finance, 'MiFID II Retail Costs and Charges: Guideline Q&As' (December 2017) <https://www.ukfinance.org.uk/system/files/MiFID-II-Retail-Costs-and-Charges-Guideline-QAs.pdf> accessed 7 June 2023.
[119] Arnold (n 115).
[120] ibid.
[121] Randy Frederick and Lee Bohl, 'Trading Near the Bells' (*Charles Schwab,* 14 October 2021) <https://www.schwab.com/learn/story/trading-near-bells> accessed 7 June 2023.
[122] Philip WS Newall and Leonardo Weiss-Cohen, 'The Gamblification of Investing: How a New Generation of Investors Is Being Born to Lose' (2022) 19(9) International Journal of Environmental Research and Public Health 5391, 6; Julian Jacobs, 'Cracking down on the Gamification of Finance' (*OMFIF,* 11 July 2022) <https://www.omfif.org/2022/07/cracking-down-on-the-gamification-of-finance/> accessed 5 June 2023.

10.14324/111.444.2052-1871.1851

easier for investors to open brokerage accounts online and across borders.[123] This helped paved the way for the adoption of MTAs as it allows investors to open accounts and begin trading within minutes, without the need for physical documentation. Similarly, the FCA has implemented changes to its rules on customer due diligence that allow for simplified verification processes and the use of third-party data providers to verify customer identity.[124]

By simplifying the account opening process, MTAs have been able to attract a wider range of customers, including those who may have been discouraged by the time-consuming and cumbersome account opening procedures of traditional brokerages, leading to greater access to the financial markets for underserved and underbanked populations.[125] Moreover, the speed and efficiency of the account opening process reduces costs for both investors and financial institutions.[126]

However, Mikkelsen et al note that this simplified account opening process may not be as robust as traditional methods and as such, may increase fraud and money laundering risk.[127] Furthermore, risks surrounding data privacy and security may increase as third-party due diligence may be inadequate.[128]

3. *Summary*

In summary, MiFID II has provided much of the regulatory framework MTAs need to enter the market and be successful. Providing a harmonised venue throughout the UK and EU incentivises new market players in financial services as they can attempt to attract a larger population. The deregulation of broker-dealer registration in the UK and EU has also facilitated the entry of new market participants and enabled them to offer mobile trading app services

[123] Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC [2014] OJ L257/7 ('eIDAS').
[124] Financial Conduct Authority, 'Financial Crime Guide: A Firm's Guide to Countering Financial Crime Risks (FCG)' (April 2023) <https://www.handbook.fca.org.uk/handbook/FCG.pdf> accessed 7 June 2023; Joyce Zeng, 'Unleashing the Potential of Digital Identity: A Sandbox Observation' (*FCA Insight,* February 2021) <https://www.fca.org.uk/insight/unleashing-potential-digital-identity-sandbox-observation> accessed 7 June 2023.
[125] Lucy Hayes and others, 'Gaming Trading: How Trading Apps Could Be Engaging Consumers for the Worse' (*FCA,* 1 February 2023) <https://www.fca.org.uk/publications/research-articles/gaming-trading-how-trading-apps-could-be-engaging-consumers-worse> accessed 19 May 2023; Erik Feyen and others, *Fintech and the Digital Transformation of Financial Services: Implications for Market Structure and Public Policy* (BIS Papers No 117, *Bank for International Settlements,* 2021) 9.
[126] Feyen and others (n 125) 9.
[127] Daniel Mikkelsen, Shreyash Rajdev and Vasiliki Stergiou, 'Financial Crime Risk Management in Digital Payments | McKinsey' (*McKinsey,* 24 June 2022) <https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/managing-financial-crime-risk-in-digital-payments> accessed 7 June 2023; Feyen and others (n 125) 45.
[128] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) para 68.

10.14324/111.444.2052-1871.1851

whilst other regulatory changes have lowered financial barriers to entry with changes in fee structures. Overall, the shift to low or no-fee trading models has had a significant impact on the mobile trading app industry, leading to increased competition, innovation, and accessibility. However, it is crucial for regulators to carefully consider the potential risks and benefits of these models and implement measures to promote consumer protection and market stability.

D. The Impact of Mobile Trading Apps on Financial Stability and Consumer Protection

1. *Introduction*

The previous chapter explored the rise and positive implications of MTAs through the promotion of financial inclusion, enhancing investor participation, and fostering competition. This was possible due to a largely accommodating regulatory environment that recognises the potential of MTAs in the democratisation of financial markets.[129] Whilst the benefits are meaningful, it is critical to identify that the proliferation of MTAs introduces new risk drivers that carry the possibility of impacting systemic risk, investor protection, and market concentration; all of which underpin financial stability and consumer protection.[130]

This chapter seeks to explore the risk drivers introduced by MTAs and examines how the features and characteristics of these apps can influence systemic risk, investor protection, and market concentration. Specifically, this chapter will dissect the impact of gamification, access to complex financial products, and the role of social media in influencing investor behaviours.

2. *Risk drivers in mobile trading apps*

a) *Gamification and behavioural biases*

User experience ('UX') design is an important innovation of MTAs that has significantly contributed to their success.[131] Often, these apps contain elements such as interactive animations and rewards that engage users through fun and attractive ways to buy and sell

[129] Aggarwal, Choi and Lee (n 18) 8–9.

[130] Sue S Guan, 'Meme Investors and Retail Risk' (2022) 63 Boston College Law Review 2051, 2093–94; European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) para 109; Erlend Walter Nier, 'Financial Stability Frameworks and the Role of Central Banks: Lessons from the Crisis' (2009) IMF Working Paper WP/09/70, 25 <https://www.imf.org/external/pubs/ft/wp/2009/wp0970.pdf> accessed 19 May 2023.

[131] Sayan Chaudhry and Chinmay Kulkarni, 'Design Patterns of Investing Apps and Their Effects on Investing Behaviors' in *Proceedings of the 2021 ACM Designing Interactive Systems Conference* (ACM 2021) 777 <https://dl.acm.org/doi/10.1145/3461778.3462008> accessed 19 May 2023.

10.14324/111.444.2052-1871.1851

securities.[132] These design elements are better known as 'gamification' elements.[133] In addition to these elements, MTAs have social validation features, such as leaderboards and the ability to view and copy other users' trades, to help influence trading behaviour.[134] Tierney argues that when the gamification of apps is successful, retail investors trade in high volumes which generates brokerage profits, possibly at the expense of retail traders' interests.[135]

The combination of gamification and social validation have significant effects on behaviour and decision making. Langvardt and Tierney argue that MTAs' features, such as casino imagery, push notifications, confetti, and other user experience aspects are routed in behavioural psychology.[136] As the FCA alludes to, MTAs are applying knowledge of behavioural psychology to utilise positive reinforcement techniques through celebratory messages or confetti after a successful trade that encourage addictive habits and potentially lead to user overconfidence in their trading ability.[137] Furthermore, the FCA cites Chapkovski, Khapko, and Zoican who conclude that through the use of push notifications or encouragement messages, users are more likely to take on more risk.[138] More concerning, this influence is stronger when users are financially illiterate and inexperienced, leading to questions on whether trading apps do enough to educate users on the risks of trading.[139] A survey conducted by the FCA discovered that investors that invested in forex or crypto believed they were more knowledgeable than most, but incorrectly believed the FCA regulated these industries.[140] This overconfidence is worrisome and Newall and Weiss-Cohen make the connection of over-confidence in trading to the same personality traits found in gambling addicts, and as such, report that some people attend gambling treatment clinics to deal with their investing

[132] James Fallows Tierney, 'Gamification and Securities Regulation' (2022) 1 <https://am.aals.org/wp-content/uploads/sites/4/2022/02/Tierney-Securities-Regulation.pdf> accessed 31 July 2024; Hayes and others (n 125).

[133] Kyle Langvardt and James Tierney, 'On "Confetti Regulation": The Wrong Way to Regulate Gamified Investing' (2022) 131 The Yale Law Journal Forum 717 <https://www.ssrn.com/abstract=3928268> accessed 19 May 2023.

[134] ibid; Alex Hern, 'Are Share-Trading Apps a Safe Way to Play the Markets?' *Guardian* (7 February 2021) <https://www.theguardian.com/technology/2021/feb/07/are-share-trading-apps-a-safe-way-to-play-the-markets> accessed 21 May 2023.

[135] Tierney (n 132) 5; Hayes and others (n 125).

[136] Langvardt and Tierney (n 133) 718.

[137] Hayes and others (n 125); European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) para 135.

[138] Philipp Chapkovski, Mariana Khapko and Marius Zoican, 'Does Gamified Trading Stimulate Risk Taking?' (2021) Swedish House of Finance Research Paper No 21-25 <https://www.ssrn.com/abstract=3971868> accessed 19 May 2023.

[139] ibid.

[140] Financial Conduct Authority, 'Young Investors Driven by Competition and Hype' (20 October 2021) <https://www.fca.org.uk/news/press-releases/young-investors-driven-competition-hype> accessed 21 May 2023.

10.14324/111.444.2052-1871.1851

behaviour.[141] Moreover, the FCA warns that the increase in mobile trading app usage is predominantly from a younger, less privileged socio-economic background,[142] and as such, the FCA warns the negative impact on the financially illiterate and inexperienced users will be larger, prompting questions over whether trading apps provide adequate user education about trading risks.[143]

The FCA notes that push notifications regarding real-time price changes and market news also amplify risky trading.[144] They cite Arnold, Pelster, and Subrahmanyam who conclude that securities used in push notifications tend to be riskier as they are more susceptive to larger price movements.[145] Furthermore, these notifications can include links to 'leaderboards' which highlight the securities that have experienced the largest price changes in the last 24 hours, which leads users to make further trades based on limited information, often leading to lower returns.[146]

Another addictive feature is the use of badges which are achievements for spending time on the app. Chapkovski, Khapko, and Zoican use the example of Robinhood, not available in the UK or EU, and how they use gifs and other terminology popular on retail trading forums, such as WallStreetBets, again targeting the often ill-informed retail investor.[147] Even when MTAs do not contain casino like features, the use of colourful colours are used to encourage the buying or selling of securities, whereas the button to cancel a trade is, in at least one instance, grey and difficult to see at all.[148] The issue with this, as ESMA argues, is that the colours entice users to act not necessarily in their best interests.[149]

Hüller et al develop this research further by agreeing that gamification of MTAs increases consumer risk-taking, but only until they reach their goal of 'winning the game'.[150] The authors argue that with the presence of leaderboards, once consumers know they are

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[141] Newall and Weiss-Cohen (n 122) s 2.2.
[142] Financial Conduct Authority, 'Young Investors Driven by Competition and Hype' (n 140); European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) para 136.
[143] ibid.
[144] Hayes and others (n 125).
[145] Marc Arnold, Matthias Pelster and Marti G Subrahmanyam, 'Attention Triggers and Investors' Risk-Taking' (2022) 143(2) Journal of Financial Economics 846, 870.
[146] Brad M Barber and others, 'Attention-Induced Trading and Returns: Evidence from Robinhood Users' (2021) 77(6) Journal of Finance 3141, 3142; Hayes and others (n 125).
[147] Chapkovski, Khapko and Zoican (n 138) 3.
[148] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) 138.
[149] ibid.
[150] Christoph Hüller, Martin Reimann and Caleb Warren, 'When Financial Platforms Become Gamified, Consumers' Risk Preferences Change' (2023) 8(4) Journal of the Association for Consumer Research 429, 429, 431, 437.

10.14324/111.444.2052-1871.1851

winning the game, they no longer become risk-takers and instead begin to save, but argue that financial risk taking doubles in an effort to win the game.[151] There is limited research in this area, however, with Hüller et all calling for more studies to show how consumers' goals are changed due to gamification techniques.[152] Nonetheless, the FCA has begun to address these issues with the new Consumer Duty which aims to address the problem behaviours of MTAs.[153] The FCA seems to be most concerned with the gamification features attracting consumer attention, whilst not conveying information that may improve trading and market quality.[154] Duterme, however, cites Jarrow and Li who suggest that retail investor coordination through the use of online forums could improve market quality.[155] Similarly in the US, the SEC has voted to hold online brokers to the same regulatory requirements as traditional investment advisors.[156] Essentially, the SEC noted a conflict of interest between the gamification of MTAs due to the data harvested and frequency of investors trading, leading to more brokerage fees collected.[157] Whilst not explicitly stated in in Duterme's paper, it can be inferred that many retail investors use MTAs to engage in investment activities. Furthermore, this paper has shown how MTAs are almost exclusively used by retail investors.

b) *Access to complex financial products*

MTAs claim to have democratised access to the financial markets reducing barriers of access through the user-friendly interfaces and low-cost commission trading.[158] As Kelleher, Grimes, and Chovil argue, however, the true democratisation of finance must be more than a 'delightful' or fun experience.[159] They argue that MTAs have enabled retail investors to enter an unfair competition in which they lose to more professional, better-equipped players.[160]

This unfair competition, and retail investor inexperience, is exacerbated by the ability to trade complex financial products, including options, futures, swaps, and leveraged exchanged-traded funds (ETFs).[161] Yet, access to these complex financial products is often

[151] ibid.
[152] ibid 437.
[153] John Gathergood and others, 'Research Note: Digital Engagement Practices: A Trading Apps Experiment' (*Financial Conduct Authority*, June 2024) 3 <https://www.fca.org.uk/publication/research-notes/research-note-digital-engagement-practices-trading-apps-experiment.pdf> accessed 31 July 2024.
[154] ibid.
[155] Tom Duterme, 'Bloomberg and the GameStop Saga: The Fear of Stock Market Democracy' (2023) 52(3) Economy and Society 373, 374.
[156] Mack Wilowski, 'SEC's New Rules Target Algorithms and Gamification Tools That Encourage Trading' (*Investopedia*, 26 July 2023) <https://www.investopedia.com/the-sec-s-new-rules-target-trading-apps-that-use-predictive-algorithms-7565878> accessed 21 June 2024.
[157] ibid.
[158] Kelleher, Grimes and Chovil (n 95) 51.
[159] ibid 92.
[160] ibid 95.
[161] ibid 92.

10.14324/111.444.2052-1871.1851

coupled with user inexperience and misunderstanding of these products.[162] This was tragically highlighted by the case of 20-year-old Alex Kearns, who tragically took his own life after accruing losses of approximately $730,000 on option trading via the app Robinhood, despite believing his maximum loss would be $10,000.[163] In his suicide note, he stated, 'I also ha[d] no clue what I was doing.'[164]

As discussed above, the design of MTAs helped facilitate the ease of transactions through casino like methods, which lead to easy access to complex financial products. Building on this, the ease of access to complex financial products serves as another risk driver threatening financial stability. As seen with the GameStop saga, billions were lost by large institutions that threatened the financial markets, leading the Federal Reserve to issue caution noting the large amount of retail investors cannot be ignored.[165] Whilst this could be said to be a coordinated attack, retail investors eventually lost money, too, with the Financial Times reporting that over 70% of retail investors lose money self-investing.[166]

c) *Investor education and influence of social media*

Social media platforms have become a community for retail investors. Between stock picking forums and AI-bots that help develop investment strategies and recommend stocks, retail investors have no shortage of information to absorb when deciding to invest.[167] The challenge, however, is that this information is not always accurate or transparent, and a source of potential manipulation.[168] For example, the SEC uncovered that the website SeekingAlpha was publishing fraudulent and fake news to manipulate stock prices.[169] Guan argues that social media's reach and role in disclosing information may incentivise predatory behaviours.[170] Even if the information was accurate and transparent, retail investors still may not have the experience to digest the information correctly.[171]

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[162] ibid; Michael Kaplan, 'Alex Kearns Died Thinking He Owed Hundreds of Thousands for Stock Market Losses on Robinhood. His Parents Have Sued over His Suicide.' *CBS News* (8 February 2021) <https://www.cbsnews.com/news/alex-kearns-robinhood-trader-suicide-wrongful-death-suit/> accessed 21 May 2023.
[163] Kelleher, Grimes and Chovil (n 95) 92; Kaplan (n 162).
[164] ibid.
[165] Liz Moyer, 'Fed Says Meme Stocks Pose Risks to Financial Stability' *Barrons* <https://www.barrons.com/articles/fed-meme-stocks-financial-stability-51636420320> accessed 7 June 2023.
[166] Capital.com, 'New Research: Success Is Limited until DIY Investors Break Bad Habits - Financial Times - Partner Content by Capital.Com' *Financial Times* (29 May 2023) <https://www.ft.com/partnercontent/capital-com/new-research-success-is-limited-until-diy-investors-break-bad-habits.html> accessed 7 June 2023.
[167] John P Anderson, Jeremy Kidd and George A Mocsary, 'Expressive Trading, Hypermateriality, and Insider Trading' (2022) 23 Tennessee Journal of Business Law 443, 1–2; Chiu and Yahya (n 3) 88.
[168] Tierney (n 132) 36.
[169] Guan (n 130) 2086.
[170] ibid 2087.
[171] ibid 2093.

10.14324/111.444.2052-1871.1851

Financially illiterate investors are unlikely to make money participating in frequent and risky trading that is, by and large, encouraged through the gamification features of MTAs.[172] Information asymmetry plays a role in this, where one party has more information than the other. Wealthy, experienced, and professional investors can access a more advanced technology when determining which trades to execute. Furthermore, professionals are able to see 'real time' flows of securities, including futures and swaps.[173] Whilst this holds true generally, social media platforms such as Reddit, and the sub-reddit WallStreetBets, were able to convince retail investors they could combat wealthy investors by executing a short squeeze on GameStop.[174] Whilst for a time this seemed to work, even though many retail investors did not understand the dynamics behind a short squeeze, many retail investors lost money when the share price collapsed.[175]

MTAs can play a positive role, however. They can educate retail investors through push notifications providing investors with learning resources, tips, and other education content all within the app.[176] As such, MTAs can play a large role in increasing financial literacy.[177] The downside, however, is that these educational resources may be biased or oversimplified and can lead to investor overconfidence or misunderstanding of financial products.[178] Moreover, due to the competitive environment, mobile trading firms have incentive to focus on gaining new customers rather than protect existing ones.[179]

3. *Systemic risk, investor protection, and market concentration implications*

The three key risk drivers identified in this paper, Gamification and Behavioural Biases, Access to Complex Financial Products, and Investor Education and Influence of Social Media, form a complex web of interactions that help influence systemic risk, investor protection, and market concentration, which ultimately determine financial stability and consumer protection.

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172 Kelleher, Grimes and Chovil (n 95) 94; Hayes and others (n 125).
173 Kelleher, Grimes and Chovil (n 95) 94.
174 Chiu and Yahya (n 3) 54, 91.
175 Abram Brown, 'Reddit Traders Have Lost Millions Over GameStop. But Many Are Refusing To Quit.' *Forbes* (4 February 2021) <https://www.forbes.com/sites/abrambrown/2021/02/04/reddit-traders-have-lost-millions-over-gamestop-but-many-are-refusing-to-quit/> accessed 21 May 2023.
176 Leah Golob, 'Study Finds "gamified" Apps Push DIY Traders to Make Riskier Investments' (*Investment Executive,* 18 January 2022) <https://www.investmentexecutive.com/news/research-and-markets/study-finds-gamified-apps-push-diy-traders-to-make-riskier-investments/> accessed 21 May 2023; Alex Clere, 'Has the "Gamification" of Investing Apps Gone Too Far?' *FinTech Magazine* (1 December 2022) <https://fintechmagazine.com/articles/has-the-gamification-of-investing-apps-gone-too-far> accessed 21 May 2023.
177 ibid.
178 ibid; Hugo Ljungkvist and Marcus Moore, 'Gamification and Its Effect on Investor Behaviour' (Thesis, Umeå University 2022) 15.
179 Woolard, 'Competition and Innovation in Financial Services' (n 43).

10.14324/111.444.2052-1871.1851

a) *Systemic risk*

The European Central bank defines systemic risk as the ‘probability for a systemic event to materialise in the financial system, over a specified time period.’[180] The 2008 financial crisis serves as an important reminder of the importance of monitoring and mitigating systemic risk, which can arise even in small sectors such as the subprime mortgage market.[181] As MTAs continue to grow in popularity, retail investors play a larger role in amplifying systemic risk. For instance, the gamification of investing, discussed above, is a key feature in MTAs and drives increased trading and risk-taking behaviour, contributing to market volatility.[182] For example, panic selling which triggers rapid selloffs, and perhaps amplified by algorithmic trading, pose a systemic risk to the financial system.[183] Whilst institutional investors tend to be the cause of systemic issues rather than retail investors, the GameStop saga has shown that a collective group of undereducated retail investors can cause systemic risk by successfully attacking a large institutional investor.[184]

As previously discussed, MTAs contribute to market volatility through gamification and behavioural biases.[185] This is because the users of MTAs typically take on more risk.[186] Whilst the market expects some sort of volatility, extreme volatility can become a systemic risk. Langvardt and Tierney argue that using gamification features like push notifications that show ‘biggest mover’ securities, entices unsophisticated retail investors to overtrade.[187] This was evidenced by the coordinated movement to buy and hold GameStop shares to execute a short squeeze on Melvin Capital. Concerningly, the result drove GameStop shares to

[180] Mattia Montagna, Gabriele Torri and Giovanni Covi, ‘On the Origin of Systemic Risk’ (*European Central Bank*, 2020) ECB Working Paper Series No 2502 <https://data.europa.eu/doi/10.2866/99190> accessed 21 May 2023.
[181] James Bullard, Christopher J Neely and David C Wheelock, ‘Systemic Risk and the Financial Crisis: A Primer’ (2009) 91(5) Federal Reserve Bank of St Louis Review 403 <https://research.stlouisfed.org/publications/review/2009/09/01/systemic-risk-and-the-financial-crisis-a-primer> accessed 19 May 2023.
[182] Ankit Kalda and others, ‘Smart(Phone) Investing? A within Investor-Time Analysis of New Technologies and Trading Behaviour’ (2021) SAFE Working Paper No 303, 2 <https://dx.doi.org/10.2139/ssrn.3765652> accessed 31 July 2024; Ali Shalchi, ‘The Rise of Armchair Retail Trading: Risks and Regulation’ (*House of Commons Library*, 26 February 2021) <https://commonslibrary.parliament.uk/the-rise-of-armchair-retail-trading-risks-and-regulation/> accessed 19 May 2023; Gregory W Eaton and others, ‘Retail Trader Sophistication and Stock Market Quality: Evidence from Brokerage Outages’ (2022) 146(2) Journal of Financial Economics 502, 503.
[183] D Sornette and S von der Becke, ‘Crashes and High Frequency Trading: An Evaluation of Risks Posed by High-Speed Algorithmic Trading’ (*UK Government Office for Science*, 2011) 6; Elvis Picardo, ‘4 Big Risks of Algorithmic High-Frequency Trading’ (*Investopedia*, 1 January 2022) <https://www.investopedia.com/articles/markets/012716/four-big-risks-algorithmic-highfrequency-trading.asp> accessed 19 May 2023.
[184] Moyer (n 165).
[185] Kalda and others (n 182) 2; Shalchi (n 182); Eaton and others (n 182) 503.
[186] Chapkovski, Khapko and Zoican (n 138) 1.
[187] ibid; Langvardt and Tierney (n 133) 737

10.14324/111.444.2052-1871.1851

unprecedented levels, resulting in extreme market volatility. Furthermore, through gamification features, the encouragement to trade helps encourage irrational decision-making and herd behaviour, both of which contribute to market volatility, which can increase systemic risk. The troubling takeaway from the GameStop saga is the spread of information on social media platforms. Whilst the coordinated attack could be said to have served its purpose, the losses sustained by institutional investors, if large enough, could have triggered a broader financial collapse in the market.

Moreover, the accessibility of complex financial products, such as options and futures, to unsophisticated investors, further contributes to market volatility, and ultimately systemic risk.[188] The IOSCO, and others, report that new investors typically were younger, male, had lower incomes, and were mostly from more vulnerable groups, which asks the question whether this group is more susceptible to false or misleading information, such as that peddled on WallStreetBets.[189] As such, Chapkovski, Khapko, and Zoican argue that financial literacy must be prioritised for today's easily accessible markets.[190] The issue, however, is that increased accessibility through the use of MTAs leads to an increase in interconnectedness, as more participants can trade using a broader range of financial products.[191] Whilst liquidity and market inclusivity are benefits of interconnectedness, the potential for rapid contagion in the event of distress raises systemic risk concerns.[192] Due to the complex products on offer, and the level of skill required to understand them, if losses were to occur, it could potentially destabilise the market.[193]

The influence of social media further exacerbates systemic risk. Social media platforms can create havoc by spreading inaccurate or misleading information causing extreme market reactions, causing herd behaviour.[194] This is evidenced by the GameStop saga which depicts how a sharp correction of inflated security prices can trigger financial crises.[195]

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188 Chapkovski, Khapko and Zoican (n 138) 21.

189 International Organisation of Securities Commissions, 'IOSCO Identifies Sound Education Practices for Securities Regulators to Consider in a Crisis Situation to Support Investor Protection' (Madrid, 30 November 2022) <https://www.iosco.org/news/pdf/IOSCONEWS674.pdf> accessed 19 May 2023; Marc Arnold, Matthias Pelster and Marti G Subrahmanyam, 'Attention Triggers and Investors' Risk-Taking' (2022) 143(2) Journal of Financial Economics 846, 869; Chapkovski, Khapko and Zoican (n 138) 22.

190 Chapkovski, Khapko and Zoican (n 138) 22.

191 Vincenzo Pacelli, Federica Miglietta and Matteo Foglia, 'The Extreme Risk Connectedness of the New Financial System: European Evidence' (2022) 84 International Review of Financial Analysis 102408, 3.

192 ibid 11.

193 ibid.

194 European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 107–110.

195 Jonathan Ponciano, 'GameStop Crash Wipes Out $5 Billion In Market Value, But One Market Expert Says Shares Could Skyrocket Again' (24 March 2021)

10.14324/111.444.2052-1871.1851

b) *Investor protection*

Investor protection measures are aimed at promoting transparency, fairness, informed choices, and confidence in the financial markets.[196] However, as previously noted in chapter C, the regulatory framework is being outpaced by the evolution of MTAs due to the pace at which firms are innovating.[197] As discussed above, the gamification techniques embedded in MTAs often make investing seem more like a game than a serious financial decision. This impacts investor protection and therefore, in chapter E, it is crucial to examine whether existing regulation is robust enough to protect investors. Furthermore, coupled with social trading, where users can see and mimic other users' trades, using complex financial instruments can lead to investors taking on risks they do not fully understand.[198] As such, the need for investor education and more robust suitability assessments are of a paramount concern and will be discussed in chapter E.[199]

MTAs utilise gamification and behavioural biases to exploit investors and subsequently cause harm. Multiple studies have shown that through these techniques, a younger, more at risk demographic of investor are more susceptible to trading outside of their risk appetite.[200] Chapkovski, Khapko, and Zoican argue that positive reinforcements of gamification features lead investors to make trades they typically would not make and subsequently take on more risk. Furthermore, the authors argue that leaderboards that depict the largest stock price changes in the last 24 hours will be focused on by investors, and ultimately lead to poorer returns.[201]

This issue is exacerbated by the ease of access to complex financial products.[202] Whilst democratising access to financial markets can be positive, providing access to complicated financial products puts a retail investor in harm's way.[203] As previously noted, retail investors that utilise MTAs tend to be financially illiterate and unqualified to trade in complicated

<https://www.forbes.com/sites/jonathanponciano/2021/03/24/gamestop-crash-wipes-out-5-billion-reddit-fueled-surge/> accessed 21 May 2023.

[196] International Organisation of Securities Commissions (n 189) 3; European Securities and Markets Authority, 'About ESMA' <https://www.esma.europa.eu/about-esma> accessed 19 May 2023.

[197] Hayes and others (n 125); Pascual and Natalucci (n 27).

[198] Hayes and others (n 125); European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 109–117.

[199] Hayes and others (n 125); European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 22–25.

[200] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 134–35.

[201] Chapkovski, Khapko and Zoican (n 138) 5.

[202] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) para 108.

[203] ibid 107–08.

10.14324/111.444.2052-1871.1851

products, ultimately harming investors, even when companies warn their shares may not be worth their current trade value.[204] For example, AMC and Hertz did just that during the meme stock craze, but did not deter investors from buying in.[205]

Another concern is the herding behaviour of unsophisticated investors, fuelled by social media influence like WallStreetBets that heighten the attention of investors to certain securities.[206] Without the skills to fundamentally analyse different securities, investors are susceptible to make decisions based on what others are doing.[207] In the Barber et al study, they authors conclude that Robinhood users, or other MTAs, were more likely to contribute to buy-side herding events through concentrated trading than other retail investors. Unfortunately, this typically led to negative returns.[208] A further concern that stems from herding behaviour is the potential for market manipulation. As shown by the GameStop saga, a large group of retail investors can influence stock prices if such coordination can occur.[209] With the availability of Reddit, other online forums, and access to the securities market, it is increasingly likely that manipulation may occur as these forums provide good opportunity for rumours and false information.[210]

c) *Market concentration*

Although empirical data on the level of market concentration in the mobile trading app industry is currently limited, the quadrupling of yearly revenue from the MTAs in the past five years, and the surge in FinTech app downloads due to the COVID-19 pandemic, suggest a competitive industry.[211] Given the diversity of available platforms, and the rapid pace of innovation in the FinTech space, it can be inferred that market concentration is relatively low.[212] This increased competition has led to lower transactional costs, thereby increasing accessibility for consumers.[213] Whilst this situation can be viewed positively, especially when compared to a scenario of high market concentration leading to less competition and potential

[204] Guan (n 130) 2107.
[205] ibid.
[206] ibid 2087.
[207] ibid 2067–68.
[208] Barber and others (n 146) 3167.
[209] Guan (n 130) 2077.
[210] Sornette and von der Becke (n 183) 14.
[211] David Curry, 'Stock Trading & Investing App Revenue and Usage Statistics' (*Business of Apps*, 9 January 2023) <https://www.businessofapps.com/data/stock-trading-app-market/> accessed 19 May 2023; Financial Stability Board, 'FinTech and Market Structure in the COVID-19 Pandemic Implications for Financial Stability' 6, 8, 15 <https://www.fsb.org/wp-content/uploads/P210322.pdf> accessed 19 May 2023.
[212] Curry (n 211); Financial Stability Board (n 211) 6, 8.
[213] Financial Stability Board (n 211) 1.

10.14324/111.444.2052-1871.1851

consumer damage, there is still risk.[214] Specifically, firms might aggressively market their apps or compromise their risk controls to attract or retain uses, which could pose broader systemic risks.[215]

As outlined in chapter C, whilst trading apps have, arguably, democratised access to financial markets, they have introduced new risk drivers which impact systemic risk, investor protection, and market concentration. As discussed above, these risk drivers pose a challenge to regulators like the FCA which must balance the benefits of MTAs on one hand, and the risks to financial stability and consumer protection on the other.[216] These risk drivers discussed can also affect market concentration, which is when a few entities dominate the market and create competition issues.[217]

As previously noted, due to the gamification of MTAs, specifically push notifications, users tend to trade the most hyped stocks resulting in unhealthy market concentration.[218] This is exacerbated when herd trading behaviour is demonstrated as previously explained, as encouraged by MTAs.[219] Furthermore, the access to complex financial products granted to investors help lead investors to invest in products they do not fully understand.[220] Likewise, social media can influence investors in the same way. Through social media platforms, certain stocks are promoted in the hope investors follow a trend.[221] This concentration helps create assess bubbles and increases the potential for market manipulation.[222] WallStreetBets founder, Jamie Rogozinski, however, argues that there is nothing wrong with 'people coming together and saying let's just push this price to the moon and being really transparent.'[223] The issue,

[214] Social Market Foundation, 'Consumers and the Economy Are Getting a Bad Deal Because Companies Don't Face Enough Competition' (2 October 2017) <https://www.smf.co.uk/consumers-economy-getting-bad-deal-companies-dont-face-enough-competition-event/> accessed 19 May 2023; Pascual and Natalucci (n 27); OECD, 'Digital Disruption in Banking and Its Impact on Competition' (2020) 29 <https://www.oecd.org/competition/digital-disruption-in-banking-and-its-impact-on-competition-2020.pdf> accessed 19 May 2023.
[215] ibid; Pascual and Natalucci (n 27); Clere (n 176); Chiu, 'A Rational Regulatory Strategy for Governing Financial Innovation' (n 65) 756.
[216] OECD (n 214) 29.
[217] Feyen and others (n 125) 35.
[218] Barber and others (n 146) 3142; Hayes and others (n 125).
[219] European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 107–110.
[220] Hayes and others (n 125); European Securities and Markets Authority, 'Final Report On the European Commission Mandate on Certain Aspects Relating to Retail Investor Protection' (n 101) paras 109–17.
[221] Guan (n 130) 2053.
[222] Brian Sozzi, 'WallStreetBets Founder: Meme Stock Trading Isn't Market Manipulation' *Yahoo Finance* (11 June 2021) <https://uk.finance.yahoo.com/news/wall-street-bets-founder-meme-stock-trading-isnt-market-manipulation-162823566.html> accessed 21 May 2023.
[223] ibid.

10.14324/111.444.2052-1871.1851

however, is as noted with SeekingAlpha, these unregulated forums allow for misinformation to be spread, which creates the opportunity for market manipulation.

4. *Summary*

This chapter explored the importance of systemic risk, investor protection, and market concentration within the Mobile Trading App industry. By examining the impact of the risk drivers associated with MTAs, this chapter was able to directly show that the risk drivers raised systemic risk, lowered investor protection, and increased market concentration. These increased risks have potential to undermine the FCA's objective of maintaining financial stability and ensuring consumer protection. Before this paper's concluding remarks, chapter E will first analyse what powers the FCA has to mitigate the risk drivers mentioned.

E. SUMMARY, REGULATORY RESPONSE AND FUTURE REFORM, AND CONCLUDING REMARKS

1. *Introduction*

This concluding chapter first synthesises the findings of this paper by analysing the enforcement goals and abilities of the FCA whilst identifying any short comings they may have in addressing the discussed risk drivers: gamification and behavioural biases, access to complex financial products, and investor education and influence of social media. Secondly, the chapter goes on to note any future legislative changes that may help the FCA mitigate these risks. Finally, this chapter will conclude with some final remarks highlighting the limitations of the research, this author's suggestions, and where future research may be directed.

2. *The 'FCA's ability to mitigate the risk drivers*

a) *Gamification and behavioural biases*

As mentioned in chapter B, the FCA has a wide range of tools it can use to protect consumers and take action against firms and individuals that do not meet FCA standards.[224] The powers stem from the FSMA 2000,[225] Financial Services Act 2012,[226] and Competition Act 1998.[227] As such, the FCA takes their ability to identify harm and find the correct solution seriously and aims to prevent harm before it occurs.[228] They do so by utilising all data available to them and can apply this data to a broad range of misconduct relevant to MTAs, including market manipulation, mis-selling of unsuitable products to consumers, and failings in a firm's systems

[224] Financial Conduct Authority, 'Enforcement' (n 85).
[225] Section 19 (The General Prohibition), Section 206 (Financial Penalties), Section 206A (Suspension and Restrictions).
[226] Section 9 (Operational Objectives), Section 55L (Power to impose requirements), Section 66 (Disciplinary Powers), Section 132A (Temporary product intervention rules).
[227] Section 18 (Abuse of a dominant position), Section 25 (Investigations), Section 36 (Financial penalties).
[228] Financial Conduct Authority, 'FCA Mission: Our Approach to Competition' (n 12) 8–9.

and controls, including governance.[229] Considering the risk drivers presented by MTAs, this section will focus on how the FCA can use these powers to mitigate the risks, and if they cannot, recommend how they could be changed.

As previously noted in 4.2.1, gamification and behavioural biases in MTAs present a unique set of challenges to the FCA due the gamification elements which induce gambling like behaviour.[230] In late 2022, the FCA acknowledged these issues noting that consumers may be worse off.[231] In their report, they explicitly noted that 3.75% of participants were classified as having ‘problem gambling behaviour,’ which falls in line with online ‘problem gambling’ gamblers’ incidence rate.[232]

To help mitigate this risk, the FCA under FSMA 2000, could impose specific requirements on the design and operation of trading apps to protect consumers.[233] For example, firms could be mandated to include clear risk warnings, limit the frequency and content of push notifications, set rules around the provision of suggested trading amounts, and regulate the practice of offering free stocks for sign up and frequent use. These features, if not properly regulated, can amplify risk-taking behaviours, especially amongst vulnerable individuals who may be prone to addictive behaviours, and be in conflict with the FCA’s consumer protection mandate.[234] Furthermore, under Section 206 of the FSMA 2000, if firms fail to meet the requirements imposed, they may face penalties. This could act as a deterrent for firms wishing to engage in activities that exploit behavioural biases for financial gain. Similarly, the FCA, under the Competition Act 1998, could ensure that firms are not using gamification features to manipulate market behaviours and promote unhealthy competition.[235]

However, the FCA’s ability to mitigate these risks is limited given the global nature of MTAs and the rapid pace at which they evolve.[236] As many app-based trading platforms operate across national borders, and therefore must comply with a multitude of different regulatory frameworks, it can be difficult to coordinate a regulatory response internationaly without opening the possibility of regulatory arbitrage.[237] As such, even if the FCA were to

[229] ibid 8–10.
[230] Newall and Weiss-Cohen (n 122) 4.
[231] Financial Conduct Authority, ‘Young Investors Driven by Competition and Hype’ (n 140).
[232] Hayes and others (n 125).
[233] FSMA 2000, s 137A-137C.
[234] Hayes and others (n 125).
[235] Woolard, ‘Competition and Innovation in Financial Services’ (n 43).
[236] Hayes and others (n 125).
[237] Allen, ‘Sandbox Boundaries’ (n 30) 312.

10.14324/111.444.2052-1871.1851

implement stricter regulations within the UK, British consumers may not be protected whilst using the apps in other countries.[238]

b) *Access to Complex Financial Products*

As discussed in section D.2.b, MTAs have significantly widened retail investor access to a range of complex financial products that were, previously, mostly reserved for sophisticated investors.[239] Leaving aside the benefits, this increased access presents an increased risk of consumer harm as these products are often more difficult to understand and carry greater risks.

FSMA 2000 grants the FCA power to make general rules for the purposes of advancing its operational objectives, including financial stability and consumer protection.[240] This empowers the FCA to limit retail investors' access to certain financial products that they deem as overly complex and risky.[241] Moreover, FSMA 2000 can impose restrictions on the sale, marketing, or distribution of certain complex financial products to retail investors.[242] This power has already been utilised when the FCA banned the sale of derivatives and exchange traded notes ('ETNs') that relate to certain types of cryptoassets to retail consumers due to potential harm concern.[243] Specifically, under the Conduct of Business Sourcebook ('COBS') rules, firms are must ensure their communications and financial promotions are 'clear, fair, and not misleading,' including providing adequate risk warnings to customers and ensuring that any promotions for complex financial products are appropriate for their target audience.[244] In addition, Section 137A of FSMA 2000 grants the FCA the power to make general rules for the purposes of advancing its operational objectives, including consumer protection. This can be interpreted as empowering the FCA to limit retail investors' access to certain financial products that it deems as overly complex and risky.

However, the implementation of these rules has its challenges. Like section E.2.a, the global and cross-border nature of many trading apps may mean that users can circumvent national restrictions and gain access to complex financial products through providers based in less regulated jurisdictions.

[238] ibid 301.
[239] Newall and Weiss-Cohen (n 122) 5.
[240] FSMA 2000, s137A.
[241] ibid.
[242] ibid ss 238, 397.
[243] Financial Conduct Authority, 'FCA Bans the Sale of Crypto-Derivatives to Retail Consumers' (6 October 2020) <https://www.fca.org.uk/news/press-releases/fca-bans-sale-crypto-derivatives-retail-consumers> accessed 7 June 2023.
[244] COBS, 4.2.1.

10.14324/111.444.2052-1871.1851

c) *Investor Education and Influence of Social Media*

Addressed in Section D.2.c, the influence of social media on investor behaviour and education presents a new challenge for the FCA. Social media platforms allow for both widespread dissemination of financial information and the rapid spread of misinformation and hype.[245] This has been particularly noticeable in the rise of 'meme stocks', as previously discussed.

Under FSMA 2000, however, the FCA can regulate financial promotions, but finds itself in a grey area in applying these rules to social media platforms and influencers.[246] Under Section 21 of FSMA 2000, any individual or firm that communicates an invitation or inducement to engage in investment activity is carrying out a 'financial promotion', unless an exemption applies, and will be subject to an offence.[247] It seems likely that this could apply to social media influencers promoting specific investments.[248]

However, policing social media presents a unique challenge due to the high volume and pace of information dissemination, and the cross-border nature of these platforms.[249] Moreover, Section 137D of FSMA 2000 enables the FCA to impose limitations or requirements on the manner in which a regulated activity is carried out.[250] With regards to financial promotions, specifying certain standards for risk disclosures or disclaimers in social media posts that discuss investments could be banned. It seems unlikely, though, that the resourced strapped FCA could effectively monitor and enforce these rules against misleading financial promotion.[251]

3. *Limitations and future research*

Whilst this paper attempts to provide a comprehensive analysis of the effect of the FCA's competition mandate on MTAs and the implications on financial stability and consumer protection through systemic risk, investor protection, and market concentration, certain limitations exist. First, the scope of this paper only allowed for a thorough analysis of one jurisdiction, ignoring the large market of the United States. Second, this paper has a large focus

[245] Financial Conduct Authority, 'Young Investors Driven by Competition and Hype' (n 140).
[246] Oliver Bray, 'FCA Gets Tough on Illegal Financial Promotions on Social Media' (*Lexology,* 30 March 2023) <https://www.lexology.com/library/detail.aspx?g=8f572317-cb3e-4e6f-aa38-4ded5403521d> accessed 7 June 2023.
[247] FSMA 2000, s 21.
[248] Osborne Clarke LLP, 'UK Financial Watchdog Tells Firms to Review "Buy Now, Pay Later" Promotions' (26 August 2022) <https://www.osborneclarke.com/insights/uk-financial-watchdog-tells-firms-review-buy-now-pay-later-promotions> accessed 7 June 2023.
[249] International Organization of Securities Commissions, 'Retail Market Conduct Task Force Final Report' (FR/05/2023, 2023) 11, 35 <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD730.pdf> accessed 7 June 2023.
[250] FSMA 2000, s 137D.
[251] Allen, 'Experimental Strategies for Regulating Fintech' (n 15) 3.

10.14324/111.444.2052-1871.1851

on the negative impacts of MTAs and only briefly touches on the positives. As stated earlier, this author believes it is too early to see whether the hypothesised benefits of MTAs will come to fruition. Future research should focus on concrete benefits of MTAs such as fostering financial literacy, widening market access, and stimulating innovation in financial services. It would be helpful if further research could examine how these apps contribute to democratisation as retail investors become shareholders for longer. A further objective could evaluate how gamification could promote financial literacy, too. AI could also be evaluated and used to help mitigate the risks identified, such as suitability requirements.

4. *Future regulatory reforms*

a) *Introduction*

The fast pace of change in the financial services industry, especially in the domain of digital platforms and social media, poses a continuous challenge to regulators. It means that regulation must keep evolving to stay effective and relevant. This section will discuss potential future regulatory ideas that could help the FCA to mitigate the identified risks better. One of the key proposals being considered is the introduction of a 'Consumer Duty'.

b) *The consumer duty*

The FCA is actively working on the concept of a 'Consumer Duty'. It involves creating a new set of rules requiring firms to take all reasonable steps to avoid causing harm to customers and to enable them to make informed decisions about financial products and services.[252]

This duty, if enacted, would significantly strengthen the FCA's ability to prevent harmful behaviours in the financial markets, including the risk drivers identified in this paper.[253] For example, with the 'Consumer Duty', the FCA would be better equipped to address issues related to the gamification of financial services as firms would be legally required to ensure that their services do not lead to consumer harm, which would include behavioural biases triggered by gamified features.[254]

Similarly, the 'Consumer Duty' could have a positive impact on the access to complex financial products and the influence of social media. Firms would need to ensure that their customers are well-informed and capable of understanding the financial products they are investing in. This could lead to better education initiatives by firms and more transparent communication, mitigating the risks posed by misinformation spread through social media.

[252] Financial Conduct Authority, 'A New Consumer Duty: Feedback to CP21/36 and Final Rules' (PS22/9, 2022) 3 <https://www.fca.org.uk/publication/policy/ps22-9.pdf> accessed 7 June 2023.
[253] ibid 9.
[254] ibid 46.

10.14324/111.444.2052-1871.1851

5. *Concluding remarks*

The FCA's competition mandate, and regulatory changes stemming from MiFID II and eIDAS, has fostered an environment that has allowed mobile trading applications to proliferate, marking an increase in accessibly to financial markets whilst acting as a catalyst for retail investors to become engaged with investing.

The issue, however, is that this landscape of high competition and free market operation has driven MTAs to intensify the gamification of these apps to gain and retain users. Whilst designed to engage users and simplify complex financial transactions, this paper has shown that gamification has inadvertently encouraged impulsive trading behaviour and risk-taking, particularly among inexperienced and financially illiterate investors, using push-notifications, reward systems, and other addictive incentives. This situation is further exacerbated by the access these apps provide to complex financial products. So, whilst the ambition of breaking down access barriers is commendable, the reduction of these barriers, especially with regards to complicated trading activities, inadvertently exposes unsophisticated investors, and the wider community, to significant financial risks. Again, this is exacerbated through social media, with Reddit and Twitter not only being platforms for drivers of market movements, but also becoming conduits for misinformation, which can lead to herd behaviour and increased market volatility, which can potentially destabilise the markets.

As such, this author suggests a more proactive approach with regards to regulation in the mobile trading app industry. MTAs are targeting a new demographic that has not typically been seen before in the financial markets. As The Institute of Chartered Accountants in England and Wales note, free trade mobile apps have significant experience in viral marketing campaigns and as such, stands to reason that the younger demographic they have targeted will likely be loyal customers throughout their adult years and into retirement.[255] With this in mind, the FCA should take an aggressive stance in educating young and existing investors in an attempt to curb their risky behaviours demonstrated on this app, after all, the FCA has a mandate to promote public understanding of the financial system.[256] Therefore, they could develop investor education programmes or campaigns that aim to improve retail investors' understanding of financial markets, the nature of investing, and the associated risks. There is merit to this idea, as the Financial Times reported that a second wave of retail investors are

[255] Nick Levine, 'Exploring the Rise of Commission Free Trading Apps' (10 March 2020) <https://www.icaew.com/technical/financial-services/2020/exploring-the-rise-of-commission-free-trading-apps> accessed 7 June 2023.
[256] FSMA 2000, s 1M.

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again trading, but with their bets more widespread now.[257] In fact, retail investors are being credited for the market rebound of early 2023 whilst institutional investors remained mostly bearish on the market.[258]

Yet, the effectiveness of these efforts in mitigating the risks posed by the influence of social media on investor behaviour is limited. They can only reduce, not eliminate, the risks associated with misinformation and herd behaviour. From a regulatory perspective, however, it seems clear there should be a coordinated, international response to the use of MTAs and the gamification features that continue to be developed. This would prevent 'forum shopping' where firms seek out the friendliest regulatory jurisdiction.[259] Furthermore, cooperation between regulators, social media platforms, and financial firms may be necessary to ensure that regulations keep pace with the rapidly evolving digital landscape.

[257] Jennifer Hughes, 'Meme-Stock 2.0: Wall Street's Retail Trading Boom is Back' *Financial Times* (17 February 2023) <https://www.ft.com/content/0ffaea2b-ba38-4dbc-bb52-499cdb0e1662> accessed 7 June 2023.
[258] ibid.
[259] Nouy (n 70).