Financial Conduct Authority

Research Note

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The growth gap: a literature review of regulation and growth

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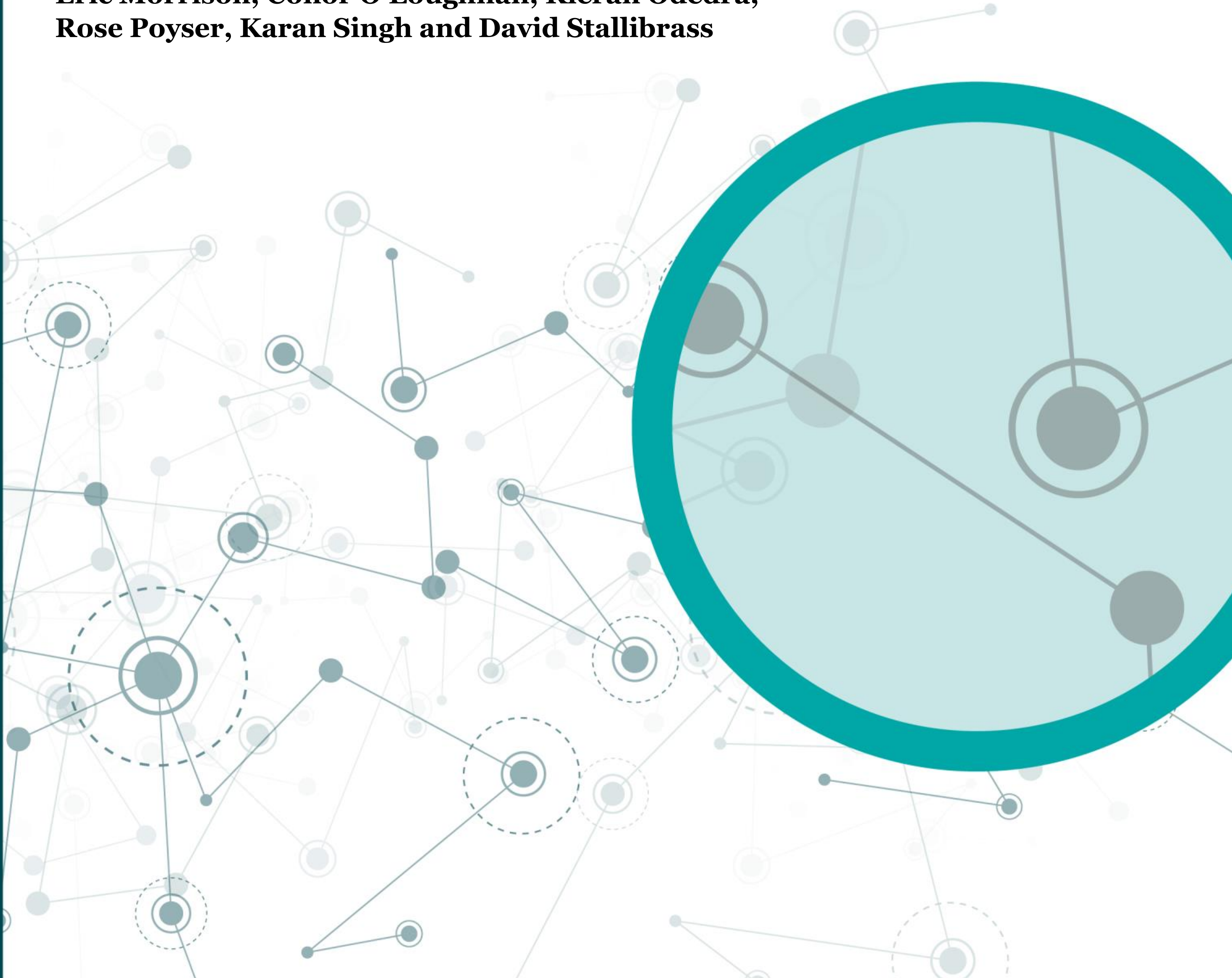

FCA research notes in financial regulation

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1 Executive summary

The FCA's role is to ensure that financial markets work well for consumers, participants, and society as a whole. This is central to a productive and growing economy.

The link between the FCA, financial regulation, and economic growth has always been present. It is implicit in the primary objectives of the FCA – market integrity, competition, and consumer protection - and was made explicit with the introduction of our secondary statutory objective on international competitiveness and growth in August 2023.[1]

Our current 3-year strategy concludes in March 2025. As we prepare for the next phase, we are conducting research to better understand the role of regulation in enabling financial services to support growth and competitiveness in the UK economy.

This literature review focuses on three key routes to support growth:

1. Increasing exports by enhancing the international competitiveness of financial services,
2. Increasing the productivity of the UK financial services sector,
3. Supporting broader economic growth in the real economy by delivering high-quality and value-driven services, investment, and oversight to where they are most needed.

The review is wide and is not constrained to issues that the FCA is able to intervene in. However, understanding the broader context will help the FCA prioritise further research more directly related to our tools and mandate.

What we know from the literature

This note summarises what we understand to be the current evidence base connecting financial services regulation to economic growth. This is primarily sourced from academia, but also from think-tanks, international organisations, and other research bodies.

The financial services sector (FSS) encompasses a broad range of services provided by institutions and companies that manage, invest, and facilitate the flow of money. It includes investment and corporate banking, asset management, capital markets, insurance, retail banking, and consumer finance.

Regulation refers to the policies and actions taken by government authorities (generally independent regulators) to achieve certain objectives in the markets they regulate. For example, the FCA regulates around 42,000 businesses in the financial services sector through its Handbook of rules and guidance, and through its Authorisation, Supervision and Enforcement functions. The FCA's actions also extend to broader services such as

[1] FCA. (2023). *Secondary international competitiveness and growth objective*. Available at: https://www.fca.org.uk/publication/corporate/secondary-international-competitiveness-growth-objective-statement.pdf

providing advice and information, and coordinating different regulatory and market actors (e.g., on standards).

We summarise the literature under the following questions. These separate out domestic- and international-facing FSS where appropriate, to reflect the different dynamics and associated policy levers which affect them differently.

UK FSS competitiveness

- How do regulatory systems compete? Is the UK ahead or behind the pack?
- What aspects of regulation shape the UK FSS' international competitiveness?
- What can agglomeration theory tell us about how to make the UK's FSS more attractive?
- How has the competitiveness of the UK's FSS evolved by sector since the global financial crisis (GFC)?
- What steps can promote the adoption of new technologies by firms in the UK's international FSS?

UK FSS productivity

- What explains post-GFC productivity in the UK's domestic FSS? What has been the role of regulation?
- What drives innovation in the UK's domestic FSS, and how can regulation support it?

Growth in the real economy

- What role can regulation play in ensuring that real economy firms are able to access suitable finance at competitive prices?
- How does consumer use of financial services drive economic growth, and what role does financial inclusion play in this process? What strategies can enhance these factors?
- Which real economy sectors are the biggest enablers of growth and what financial services regulatory action could help to support firms in those sectors?
- What types of FSS activities could potentially undermine long-term UK growth?
- What explains macroeconomic movements in debt and investments since the GFC? What does this tell us about where regulators should focus?
- What is the impact of financial services regulation on the incentives that rest-of-economy firms face to be efficient, productive, innovative, and to grow?

While the existing research is high quality, it often lacks the practicality, the relevance to the UK context, and the interconnections necessary to provide robust, actionable recommendations for the FCA. This is not surprising, as much of the research is conducted independently and does not align with the specific challenges faced by the FCA.

Next steps

For each research question above, we suggest specific areas of further research that the FCA is particularly interested in pursuing.

We note that nothing in this document should imply the FCA has the ability, mandate, or inclination to intervene in any given market in any given manner. Indeed, most policy interventions implied by the research are likely to require co-operation across organisations and, potentially, across jurisdictions.

However, by prioritising research that addresses identified gaps while also consolidating existing knowledge, the FCA can better understand the broader context in which it operates and co-operates. This should enable more targeted and effective strategies to enhance competitiveness and growth.

Areas for future research will be explored through our internal research program and a public competition to fund further academic research.

We welcome comments and suggestions – especially about literature or areas of active research we may have missed. To do this, please contact growtheconomics@fca.org.uk.

2 The FCA and economic growth

How the FCA thinks about financial services and growth

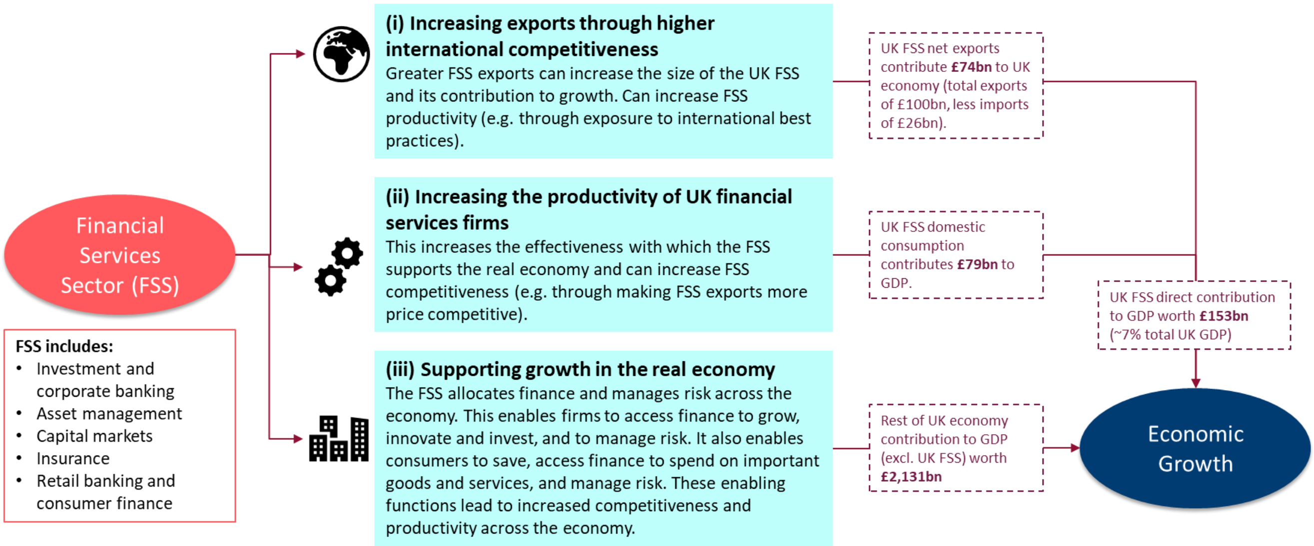
The UK Financial Services Sector (FSS) is a crucial component of the UK economy. The sector employs around 8% of the UK workforce, with two-thirds of these positions based outside London, and on average pays employees more than any other sector.[2] It generates a significant trade surplus and directly contributes around 7% to UK output.[3]

The UK's FSS is also the most productive out of any UK sector, generating £104 worth of output per hour worked, compared to the UK sector average of £39.[4]

The UK's FSS supports growth through three routes:

(i) increasing FSS exports through higher international competitiveness;
(ii) increasing the productivity of UK financial services firms; and
(iii) supporting growth in the real economy.[5]

Figure 1: How the UK Financial Services Sector supports growth



All figures come from ONS 2021 Supply-Use tables (most recent year available). UK FSS direct contribution to GDP calculated by summing exports and domestic final demand (£179bn), less imports (£26bn).

[2] TheCityUK. (2023). *Key facts about UK-based financial and related professional services 2023.* Available at: https://www.thecityuk.com/media/vbhjnbmx/key-facts-about-uk-based-financial-and-related-professional-services-2023.pdf. ONS. (2024). *EARN03: Average weekly earnings by industry (October 2024)*. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/averageweeklyearningsbyindustryearn03

[3] ONS. (2023). *Input-output supply and use tables* (Annual, 2021). Available at: https://www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/inputoutputsupplyandusetables

[4] ONS. (2024). *Output per hour worked, UK*. Table 12 (Annual, 2023). Available at: https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/outputperhourworkeduk

[5] This framework builds on our seven drivers of productivity work. The seven drivers link primarily to the two routes on increasing FSS exports through higher international competitiveness and increasing the productivity of the UK's FSS firms. More detail on the seven drivers of productivity can be found from page 4 onwards here: FCA (2023) *Secondary international and growth objective.* Available at: https://www.fca.org.uk/publication/corporate/secondary-international-competitiveness-growth-objective-statement.pdf.

The UK's FSS firms are extremely diverse, providing many different services and products to a range of markets and sectors. In particular, the challenges facing firms that compete and sell internationally are likely to be very different to those selling to domestic businesses and consumers.

We are interested in how to optimise the above routes to growth across the full range of markets, both domestic and international. Given the size of the UK's FSS, and its importance across the economy, the sum of multiple small increases in growth and productivity has the potential to lead to a significant and sustained macroeconomic effect.

Increasing exports through higher international competitiveness

Competitiveness is how attractive, compared to other jurisdictions, it is for firms to be based, or for business to be done, in the UK.

Increasing the UK's FSS competitiveness should lead to greater exports of financial services, and to more international FSS firms located and investing in the UK.

Given the size and productivity of the FSS, increasing its exports could significantly boost UK macroeconomic growth. Export growth brings in foreign revenue, creating jobs and stimulating consumer demand. Moreover, greater exposure to international markets, competition and best practices can enhance broader productivity across the UK's FSS.

International competitiveness is likely facilitated by:

- Regulation that adds value to firms doing business in the UK without adding unnecessary costs.
- Good governance and provision of public goods (e.g., rule of law, certainty and stability, trust, promotion of economic freedom).
- Favourable fiscal policies, including competitive tax rates and incentives that encourage investment and growth.
- Access to foreign markets and customers for UK firms, and greater ability to do business in the UK for foreign firms.
- The benefits of time zone and language.
- The benefits of geographic concentration of different financial service and related professional service hubs (agglomeration benefits).
- Access to shared infrastructure, such as technological platforms and processes.

FCA case study – promoting the UK as a centre for sustainable finance

We are working to maintain the UK's position as a global leader in sustainable finance. To do this, we have implemented the Sustainability Disclosure Requirements and investment labels regime to provide reliable consumer information for sustainable investment products. We have also facilitated the development of an industry-led, internationally interoperable Code of Conduct for ESG data and ratings providers. We have already seen Hong Kong aligning their Code with this. By improving access to trustworthy information, we hope to boost the development and attractiveness of sustainable investment products in the UK.

Increasing the productivity of UK financial services firms

Productivity is how much value a financial services firm creates from a given set of inputs, such as people.

Increasing the productivity of the international-facing FSS will help competitiveness. All else equal, it will make it more attractive to do business in the UK compared to other jurisdictions because firms will create more value with the same inputs. This in turn will make UK FSS exports more price competitive.

Increasing the productivity of the domestic-facing FSS will help growth by supplying more value to the UK economy.

FSS productivity is likely facilitated by:

- Similar drivers to international competitiveness, such as high-value regulation, agglomeration benefits, and shared infrastructure.
- The dynamic process of competition and innovation leading to value-creating business models, technologies and products replacing older, less efficient ones. These changes can either occur through displacement by new firms and products, or through diffusion of innovations into existing firms and products.

FCA case study – supporting FSS innovators

We have increased our support of innovative firms within the FSS. Our regulatory sandboxes allow firms to test innovative products and services in a controlled environment. This support is coupled with our Innovation Pathways services, which help innovative firms navigate the authorisation process. Over 95 global regulatory peers have adopted the sandbox model. Fintechs that use regulatory sandboxes are 50% more likely to raise capital, and are also likely to raise 15% more capital as a result of using the sandboxes.[6] In addition to this, our Early and High Growth Oversight programme provides enhanced supervision for newly authorised firms. This is a useful way for innovative firms, who may not have the same resources as more traditional financial services firms, to engage with and understand regulation.

[6] Cornelli, G., Doerr, S., Gambacorta, L., & Merrouche, O. (2024). 'Regulatory Sandboxes and Fintech Funding: Evidence from the UK'. *Review of Finance*, 28(1), pp.203-233, https://doi.org/10.1093/rof/rfad017.

Supporting growth in the real economy

The 'real' economy refers to the production and distribution of non-financial goods and services. Financial services can support growth and innovation in the real economy in several important ways.

It can facilitate investment by firms through:

- Increasing the availability of credit for investment.
- Allocating capital efficiently between different firms and different investment projects.
- Reducing market frictions through increasing information, and reducing search and transaction costs.
- Allowing firms to manage risk more effectively.
- Facilitating trade and exchange.

For individuals, financial services can provide opportunities to invest in education and skills, manage income shocks through borrowing or income protection insurance, and allow for longer job searches. These factors can promote growth both through increasing the quality of human capital and by increasing the engagement of individuals in labour markets. This may also increase the income and consumption of lower income groups, which can impact directly and positively on economic growth.

FSS support of the real economy is likely facilitated by:

- Similar drivers to international competitiveness and productivity, such as high-value regulation, competition, and innovation.
- Reductions in information, search, and transaction costs between FSS and the real economy.
- Reductions in regulatory, informational, or behavioural barriers for firms and consumers accessing and using appropriate financial services.
- Efficient allocation of capital and investments across the economy.
- Provision of appropriate incentives for firms to support sustained macroeconomic growth.

There may also be risks to an overreliance on financial services within an economy, such as the creation of inefficient incentives or the crowding out of activity that is more productive over the longer term.

FCA case study – improving firm growth opportunities
We are supporting growth in the real economy by enabling private companies to innovate and scale through the creation of PISCES (Private Intermittent Securities and Capital Exchange System). We are working with the Treasury to facilitate the development of this secondary-trading platform that aims to offer enhanced liquidity for private companies and new opportunities for investors.

3 Literature review

Methodology

To conduct this literature review, we examined a wide range of sources, including academic papers, reports from think-tanks and international organisations, and internal FCA documents.

We prioritised material that addressed the relationship between regulation, financial services, and economic growth, with a focus on UK-specific studies where available. The review was structured to assess gaps in the current knowledge base and identify where further research is needed to inform FCA decision-making.

UK FSS Competitiveness

- Competitiveness is how attractive, compared to other jurisdictions, it is for financial service firms to be based, or for business to be done, in the UK.
- Increasing UK FSS competitiveness should lead to greater exports of financial services, and to more international FSS firms located in and/or investing in the UK.
- Given the generally high productivity and large size of the financial services sector, increasing the size of the sector through exports will meaningfully contribute towards UK macroeconomic growth.
- Answering the questions below will help the FCA regulate in a manner that supports the competitiveness of UK FSS, and thus macroeconomic growth, while continuing to deliver against our primary objectives.

Q1: How do regulatory systems compete? Is the UK ahead or behind the pack?

Motivation

- The competitiveness of the UK's FSS is in part dependent on the comparative value of UK regulation – its benefits, costs, and constraints. Understanding how the benefits and costs of UK financial regulation compare to competing locations for doing business is helpful for understanding how the FCA can optimise regulation to support competitiveness, including striking an appropriate balance between market integrity, consumer protection, competition in the interests of consumers, and international growth and competitiveness.

Literature review

- While the literature gives broad coverage to the effect of regulation on short-term firm decisions such as location, there is less emphasis on the consequences that regulation may have on long-term investment and innovation.
- The literature tends to focus primarily on individual regulations and rules, emphasising specific compliance requirements and enforcement mechanisms

within regulatory frameworks.[7] This focus may not fully capture broader themes, such as the distinction between principles-based versus outcomes-based regulation or the internal consistency of the regulatory model.

- The literature suggests that competition between FSS regulatory systems often hinges on factors such as the speed of authorisations, the flexibility of regulations, and the overall ease of doing business within a jurisdiction.[8] Theories of regulatory arbitrage and jurisdictional attractiveness are central to understanding how systems compete.[9]
- Comparative studies indicate that regulatory competition, which refers to jurisdictions competing to create attractive regulatory environments for businesses, is shaped by the broader economic strategies of firms, regulators, and governments, as well as by geopolitical stability. Market access can be both a strategic choice—where firms intentionally decide how to enter a market (e.g., through partnerships or direct investment)—and an outcome of competition, as firms vie for limited opportunities. This can lead to dynamics where only certain players can effectively enter and thrive based on factors like innovation, pricing, and regulatory influences.[10]
- Following its departure from the EU, the UK has greater regulatory autonomy, presenting new opportunities for regulatory innovation. However, UK and EU financial markets remain highly interconnected, complicating that autonomy.[11]
- Analysis of post-GFC regulatory reform points to UK FSS maintaining a competitive edge in regulatory innovation and legal infrastructure. However, it also highlights issues regarding regulatory alignment, and the potential for risks to regulatory independence to emerge, particularly as the UK navigates its post-Brexit regulatory landscape.[12]

Research the FCA Would Benefit From

- Investigation of the longer-term consequences of regulation, especially on innovation and investment. Understanding what regulatory elements could help the UK maintain or strengthen its position, especially in relation to major financial hubs like New York, or growing hubs such as San Francisco, Dubai, and Singapore.
- Research to identify opportunities for both enhancements to the existing regulatory framework, and comprehensive reforms aimed at boosting the competitiveness of the UK FSS.

[7] NAO. (2021). *Principles of effective regulation*. Available at: https://www.nao.org.uk/wp-content/uploads/2021/05/Principles-of-effective-regulation-SOff-interactive-accessible.pdf
[8] Maggetti, M., & Ewert, C. (2018). 'Comparative Regulatory Regimes and Public Policy'. In E. Ongaro, & Van Thiel, S. (eds), *The Palgrave Handbook of Public Administration and Management in Europe* (pp.635-651). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-55269-3_33
[9] Gloukhovtsev, A., Schouten, J., & Mattila, P. (2018). 'Toward a General Theory of Regulatory Arbitrage: A Marketing Systems Perspective'. *Journal of Public Policy and Marketing*, 37(1), pp.142-151. https://doi.org/10.1509/jppm.16.0178
[10] World Bank Group (2020). *Doing Business 2020*. World Bank. https://doi.org/10.1596/978-1-4648-1440-2. License: Creative Commons Attribution CC BY 3.0 IGO. Etienne, J., McEntaggart, K., Chiricho, S., Schnyder, G. (2018). *Comparative Analysis of Regulatory Regimes in Global Economies.* BEIS Research Paper Number 19. Department for Business, Energy and Industrial Strategy. Available at: https://assets.publishing.service.gov.uk/media/5bea9751ed915d6a1e83911f/CAoRR_final_report1.pdf
[11] Jancic, D. (2022). 'Regulatory strings that bind and the UK Parliament after Brexit'. *Comparative European Politics,* 20, pp.566-584. https://doi.org/10.1057/s41295-022-00296-3
[12] Ferran, E. (2023). 'International Competitiveness and Financial Regulators' Mandates: Coming Around Again in the UK'. *Journal of Financial Regulation*, 9(1), pp.30-54. https://doi.org/10.1093/jfr/fjad001

Q2: What aspects of regulation shape UK FSS international competitiveness?

Motivation

- In addition to understanding the relative international position of UK regulation, it is helpful to understand what aspects of regulation are particularly important for UK FSS international competitiveness.

Literature review

- While there is extensive literature on the relationship between regulation and competitiveness there is less work in the context of the UK's FSS, especially outside the fintech sector. Regulation of the UK's FSS has a number of objectives including market integrity, consumer protection, competition in the interests of growth, and international growth and competitiveness. Sometimes these objectives align.
- One of those trade-offs explicitly considered in the Independent Commission on Banking report was between financial stability and competitiveness. The report argued that increasing financial stability was good for growth, and that improvements in stability would have a neutral impact on UK competitiveness.[13]
- The FSS literature tends to focus on specific regulations and their direct effects on competitiveness, rather than how they interact or their collective impact.[14]
- The relationship between regulation and competitiveness in general is complex.[15] The literature indicates that while stringent regulations may initially seem to reduce competitiveness, they can enhance market stability, correct market failures, and increase investor confidence in the long run.[16] Additionally, analysis of OECD countries has found that regulation can have a positive impact on innovation.[17] For example, strong intellectual property rights can increase incentives for firms to spend on R&D, while environmental protections can create incentives for firms to invest in new products and production methods.
- However, analysis of EU product markets suggests that regulation can also reduce dynamism. Stringent regulation can reduce firm churn (for example, by increasing barriers to entry), leading to lower productivity growth as competitive pressures are reduced.[18] These differing findings about the impact of regulation highlight the difficulty of generalising across different regulatory designs, as well as demonstrating some of the trade-offs regulators face.
- Comparative studies suggest that jurisdictions with clear, stable and transparent regulations tend to attract more international business.[19] However, regulation that

[13] Independent Commission on Banking. (2011). *Independent Commission on Banking Report*. Available at https://webarchive.nationalarchives.gov.uk/ukgwa/20120827143059/http://bankingcommission.independent.gov.uk///

[14] CMA. (2020). *Regulation and Competition: A Review of the Evidence*. Available at: https://assets.publishing.service.gov.uk/media/5e184a9940f0b65dbfbc1c4b/Regulation_and_Competition_report_-_web_version.pdf

[15] OECD. (2020). *How do laws and regulations affect competitiveness: The role for regulatory impact assessment*. OECD Regulatory Policy Working Papers No.15. https://doi.org/10.1787/24140996

[16] OECD. (2020). *How do laws and regulations affect competitiveness: The role for regulatory impact assessment*. OECD Regulatory Policy Working Papers No.15. https://doi.org/10.1787/24140996

[17] Blind, K. (2012). 'The influence of regulations on innovation: A quantitative assessment for OECD countries'. *Research Policy*, 41, pp.391-400. https://doi.org/10.1016/j.respol.2011.08.008

[18] Anderton, R., Di Lupidio, B., Jarmulska, B. (2019). *Product market regulation, business churning and productivity: evidence from the European Union countries*. European Central Bank Working Paper Series No. 2332. Available at: https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2332~53142f69bc.en.pdf

[19] TMF Group. (2023). *Global compliance challenges and business complexity*. Available at: https://www.tmf-group.com/en/news-insights/articles/global-business-complexity/global-compliance-challenges-business-complexity/

imposes high costs for firms and regulatory U-turns can deter firms from entering the market.
- Discussions around the post-Brexit landscape focus on the balance between regulatory autonomy and the need to align with international standards to avoid creating barriers to cross-border financial flows.[20]

Research the FCA would benefit from
- Research into how specific financial services regulations have either enhanced or hindered international competitiveness, especially in relation to exports, and attracting or retaining firms located in the UK.
- Investigation into the extent different regulatory approaches impact long-term innovation and competitiveness in the UK financial services sector, and how these effects compare to those observed in other major financial hubs. Research could also explore future regulatory adjustments to enhance competitiveness, keeping in mind potential trade-offs between regulatory certainty and innovation, and between short-term costs and longer-term benefits.

Q3: What can agglomeration theory tell us about how to make the UK's FSS more attractive?

Motivation
- The UK hosts a number of highly liquid international markets and has a broad and deep professional services market including world-class legal, accounting, and financial services firms.
- In the past, the physical co-location of markets, financial services firms, and their advisors was important to creating spatial economies of scale and scope – also called agglomeration effects. Agglomeration theory aims to understand these effects and study their causes.
- Increased digitisation and globalisation have likely changed the nature of these effects. Understanding how agglomeration might impact the competitiveness and productivity of the international FSS could help the FCA and other policy partners co-operate in their collective mission to promote economic growth.

Literature review
- Agglomeration theory highlights the benefits of geographic clustering, which can lead to increased innovation, knowledge sharing, and economies of scale.[21] In the context of financial services, major global hubs such as London benefit from such agglomeration effects.[22]
- Theories of agglomeration also indicate that the infrastructure and digital capabilities of a city or region play a critical role in maintaining attractiveness.[23]

. Oman, C. (2000). *Policy Competition for Foreign Direct Investment: A Study of Competition among Governments to Attract FDI*. Development Centre Studies. HYPERLINK "https://doi.org/10.1787/9789264181083-en"https://doi.org/10.1787/9789264181083-en

[20] Jancic, D. (2022). 'Regulatory strings that bind and the UK Parliament after Brexit'. *Comparative European Politics*, 20, pp.566-584. "https://doi.org/10.1057/s41295-022-00296-3"https://doi.org/10.1057/s41295-022-00296-3. Egan, M. and Webber, M. (2023) 'Brexit and 'Global Britain': role adaptation and contestation in trade policy'. *International Politics*. https://doi.org/10.1057/s41311-023-00503-2

[21] Carlino, G., & Kerr, W. R. (2014). *Agglomeration and Innovation*. NBER Working Paper Series, No. 20367. https://doi.org/10.3386/w20367

[22]Kuah, A. (2008). *Clustering in the UK financial services: The quest for the enigmatic pecuniary externality*. Manchester Business School Working Paper, No. 56034. DOI: 10.10419/50695. Available at: https://www.econstor.eu/bitstream/10419/50695/1/584756704.pdf

[23] Xiao, S., Zhou, P., Zhou, L., & Wong, S. (2024). 'Digital economy and urban economic resilience: The mediating role of technological innovation and entrepreneurial vitality'. *PLoS ONE*, 19(6), Article e0303782. https://doi.org/10.1371/journal.pone.0303782

- Analysis of European regions shows that the presence of a skilled workforce, a supportive regulatory environment, and access to global markets contribute to agglomeration in the UK's FSS.[24]
- Existing literature covers the weaknesses in UK's infrastructure and its effect on the economy, although there is less analysis of digital infrastructure in the UK.[25] However, there is limited analysis of the impact of this on the UK's FSS, and of infrastructural weaknesses that might be uniquely harmful to the sector.
- Moreover, the interaction between regulation and agglomeration in the UK's FSS has received little attention.[26]

Research the FCA would benefit from

- Exploring regulatory policies to enhance the roles of London and other UK cities as global FSS hubs.
- Understanding of the potential for the development of product or sector hubs, such as in tokenisation or transition capital, to enhance the UK's broader financial services ecosystem.

Q4: How has the competitiveness of the UK's FSS evolved by sector since the GFC?

Motivation

- Understanding what has happened to the competitiveness of the UK's FSS since the GFC, and what has driven those changes, will help the FCA understand what changes might be made in the future.

Literature review

- The literature suggests a strong recovery in some areas since the GFC, particularly in wealth management and fintech, meanwhile traditional banking has faced more challenges and has struggled to recover as strongly.[27]
- There are differences in growth rates between FSS sectors post-GFC. The UK maintains a global lead in fintech, and subsectors within fintech have gained momentum.[28] This has partly been driven by regulatory innovations like the

[24] Xiao, S., Zhou, P., Zhou, L., & Wong, S. (2024). 'Digital economy and urban economic resilience: The mediating role of technological innovation and entrepreneurial vitality'. *PLoS ONE*, 19(6), Article e0303782. https://doi.org/10.1371/journal.pone.0303782

[25] For example, Seidu, R.D., Young, B., Robinson, H. and Michael, R. (2020). 'The impact of infrastructure investment on economic growth in the United Kingdom', *Journal of Infrastructure, Policy and Development,* 4 (2), pp. 217-227. https://doi.org/10.24294/jipd.v4i2.1206. Jones, R., Llewellyn, J. (2019) 'Improving Infrastructure', *National Institute Economic Review*, 250(1), R61-R68. Available at: https://doi.org/10.1177/002795011925000119

[26] City of London Corporation & HM Treasury. (2022). *State of the sector: Annual review of UK financial services 2022*. Available at: https://assets.publishing.service.gov.uk/media/62d8296f8fa8f50bfe0edd65/State_of_the_sector_annual_review_of_UK_financial_services_2022.pdf

[27] Ernst & Young. (2023). *2024 EY Report: Global Wealth Management Industry Report*. Available at: https://www.ey.com/content/dam/ey-unified-site/ey-com/en-gl/insights/wealth-asset-management/documents/ey-gl-global-wealth-mgmt-industry-report-04-2024.pdf.

GlobalData. (2020). *United Kingdom (UK) Retail Banking 2020 - Review, Forecasts, and Future Opportunities*. Available at: https://www.globaldata.com/store/report/united-kingdom-uk-retail-banking-2020-review-forecasts-and-future-opportunities/

[28] KPMG UK. (2024). *Pulse of Fintech – UK perspective*. Available at: https://kpmg.com/uk/en/home/insights/2024/02/pulse-of-fintech-uk-perspective.html. Chang, B., Ziegler, T., Mammadova, L., Johanson, D., Gray, M., Yerolemou, N. (2018). *5th UK Alternative Finance Industry Report* . Cambridge Centre for Alternative Finance & University of Cambridge Judge Business School. Available at: https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2018-5th-uk-alternative-finance-industry-report.pdf. Haque, F. (2023) *Fintech: A Comparison Between the Subsectors*. Beauhurst. Available at: https://www.beauhurst.com/blog/fintech-subsectors-comparison/

introduction of regulatory sandboxes.[29] In contrast, retail banking has seen slower growth.[30]

- Data-driven analyses highlight that gains in fintech have been a bright spot, with the UK maintaining a leadership position globally.[31] The literature suggests that as fintech firms have become important participants in FSS, they have increased competitive pressure on traditional firms, and accelerated regulatory change due to their rapid and frequent innovations.[32]
- However, the Corporation of the City of London has highlighted that London faces increasing competition from other financial centres, partly due to concerns around cost and access post-Brexit.[33]

Research the FCA would benefit from

- Research into the specific regulatory factors that explain sectoral differences in competitiveness post-GFC, as well as insights into successful regulatory practices from other jurisdictions that could inform our approach.
- Greater understanding of how primary listings influence the broader competitiveness of the UK's FSS, particularly regarding the interaction with regulatory frameworks.

Q5: What steps can promote the adoption of new technologies by firms in the UK's international FSS?

Motivation

- The shared adoption of new technologies can help reduce costs, facilitate innovation, and intensify the benefits of agglomeration and co-location.
- Understanding how regulation can promote adoption of value-creating technology will help the FCA understand how it can support the international attractiveness of the UK as a place for FSS firms to do business.

Literature Review

- The literature on technology adoption highlights the ambiguous role of regulatory frameworks in either enabling or hindering innovation. For example, regulation can create incentives for innovation or reduce barriers to entry, but it can also bring increased compliance costs that reduce the resources available for innovation.[34]
- The Kalifa Review suggested that the UK has led the way globally in its approach to fintech, including with the creation of the FCA's Innovation team, the open

[29] Cornelli, G., Doerr, S., Gambacorta, L., & Merrouche, O. (2024). 'Regulatory Sandboxes and Fintech Funding: Evidence from the UK'. *Review of Finance*, 28(1), pp.203–233. https://doi.org/10.1093/rof/rfad017.

[30] GlobalData. (2020). *United Kingdom (UK) Retail Banking 2020 - Review, Forecasts, and Future Opportunities*. Available at: https://www.globaldata.com/store/report/united-kingdom-uk-retail-banking-2020-review-forecasts-and-future-opportunities/

[31] Department for International Trade & HM Treasury, Innovate Finance. (2019). *UK FinTech: State of the Nation*. Department for Business and Trade & Department for International Trade. Available at: https://www.gov.uk/government/publications/uk-fintech-state-of-the-nation

[32] Divya, Mathur, A., Mathur, A. & Gupta, V. (2024). 'Fintech Disruption in Traditional Financial Services: Analyzing the Impact of Fintech Startups on Traditional Banking and Financial Institutions'. In B. Awwad, (ed). *The AI Revolution: Driving Business Innovation and Research*. Springer Cham. https://doi.org/10.1007/978-3-031-54379-1_52

[33] City of London Corporation & HM Treasury. (2022). *State of the sector: Annual review of UK financial services 2022*. Available at: https://assets.publishing.service.gov.uk/media/62d8296f8fa8f50bfe0edd65/State_of_the_sector_annual_review_of_UK_financial_services_2022.pdf

[34] Regulatory Horizons Council. (2021). *The future of technological innovations and the role of regulation*. Department for Science, Innovation and Technology & Department for Business, Energy & Industrial Strategy. Available at: https://www.gov.uk/government/publications/future-of-technological-innovations-and-the-role-of-regulation

banking framework, and the introduction of regulatory sandboxes.[35] However, the UK may need to further improve its support of firms in the scale-up phase, including by further removing barriers to investment in the pre-IPO phase, and promoting greater interoperability between fintechs and incumbent firms.[36]
- Some studies (though not specific to FSS competitiveness) of innovation performance and technology adoption also point to the importance of digital infrastructure and talent availability in enabling technological competitiveness.[37]

Research the FCA would benefit from

- Research identifying regulatory barriers that hinder the widespread adoption of new technologies in FSS.
- Identification of regulatory activities that promote innovation or technology, such as the coordination and adoption of technologies by the regulator. Moreover, research could investigate regulatory actions that might support the scale-up of innovative firms.
- Identification of how the effectiveness of the Enhanced Global Outreach initiative, launched in response to the Kalifa Review, could be increased.
- Investigation into which technologies hold the greatest potential for boosting competitiveness and growth in international markets.

UK FSS Productivity

- Productivity can be defined as how much value a financial services firm creates from a given set of inputs, such as people.
- Increasing the productivity of international FSS will help competitiveness. All else equal, it will make it more attractive to do business in the UK compared to other jurisdictions because you will get more value with the same inputs.
- Answering the questions below will better help the FCA regulate in a manner that increases the productivity of the UK's FSS, and thus macroeconomic growth.

Q1: What explains post-GFC productivity in the UK's domestic FSS? What has been the role of regulation?

Motivation

- Headline figures suggest that the UK's FSS has become significantly less productive since the GFC. In the run-up to the crisis, FSS had the fastest-growing labour productivity of any sector at 5% per year. In the decade after the crisis, FSS productivity fell by 2.1% per year.[38]

[35] HM Treasury. (2021). *The Kalifa Review of UK Fintech*. Available at: https://www.gov.uk/government/publications/the-kalifa-review-of-uk-fintech. Woolard, C., Bull, T. & Hill, T. (2024). *How scale-up FinTechs can drive sustainable growth*. Ernest & Young. Available at: https://www.ey.com/en_uk/insights/banking-capital-markets/how-scale-up-fintechs-can-drive-sustainable-growth

[36] Eversheds Sutherland. (2020). *The future of the UK fintech industry*. Available at: https://www.eversheds-sutherland.com/en/united-kingdom/insights/the-future-of-the-uk-fintech-industry. HM Treasury. (2021). *The Kalifa Review of UK Fintech*. Available at: https://www.gov.uk/government/publications/the-kalifa-review-of-uk-fintech

[37] Hussain, H., Jun, W. & Radulescu, M. (2024). 'Innovation Performance in the Digital Divide Context: Nexus of Digital Infrastructure, Digital Innovation, and E-knowledge'. Journal of the Knowledge Economy. https://doi.org/10.1007/s13132-024-02058-w. Sarangi, A.K. & Pradhan, R.P. (2021). 'ICT infrastructure and economic growth: a critical assessment and some policy implications'. *Decision*, 47, pp. 363–383. Available at: https://doi.org/10.1007/s40622-020-00263-5. Doucette, R., & Parsons, J. (2020). *The importance of talent and culture in tech-enabled transformations*. McKinsey & Company. Available at: https://www.mckinsey.com/industries/industrials-and-electronics/our-insights/the-importance-of-talent-and-culture-in-tech-enabled-transformations

[38] Tenreyo, S. (2018). *The fall in productivity growth: causes and implications.* Bank of England. Available at: https://www.bankofengland.co.uk/-/media/boe/files/speech/2018/the-fall-in-productivity-growth-causes-and-implications

- Understanding what has happened to the productivity of the UK's FSS since the GFC, and what has driven those changes, will help the FCA understand what changes might be made in the future.
- It is important to differentiate between Labour Force Productivity (LFP) and Total Factor Productivity (TFP) when analysing the post-GFC productivity landscape in the UK's financial services sector. LFP focuses on output per worker, which is relatively easy to measure. TFP considers the efficiency of all inputs in the production process, providing a more comprehensive view of productivity dynamics.

Literature Review

- One explanation for low post-GFC productivity is that in the lead up to the GFC, headline productivity statistics were inflated by unsustainable growth in the supply of housing loans, financed using wholesale markets and short-run debt. In Spain, once the drivers of growth that led to the GFC are excluded from economy-wide productivity figures, productivity pre-GFC measured only 50% of the official productivity statistic.[39]
- Another explanation for low post-GFC growth is that the losses suffered by banks on their international loan books during the GFC forced them to cut back on the supply of loans to domestic businesses. A study of German banks found there was a causal relationship between the decision of banks to reduce the supply of business loans, and low and negative economic growth.[40]
- The literature suggests that, while productivity levels in the FSS remain high compared to the rest of the UK economy, the reduction in output in the sector has led to an overall weakening of UK productivity growth compared to the pre-GFC trend.[41]
- Discussions of the potential causes of low domestic FSS productivity highlight reduced risk-taking, and the effects of regulation. These effects include heightened staffing requirements to manage new infrastructure, systems, and regulatory requirements, as well as the need to reduce leverage and increase capital. The generally declining contribution of IT systems to labour productivity may also have reduced productivity growth in a sector that relies heavily on technology.[42] However, direct testing and weighing of these hypotheses is limited.
- Measures of output in financial services often fail to account for quality adjustments, potentially leading to an understatement of actual output, and therefore of productivity. Additionally, historically high risk-taking may have led to overestimates of pre-GFC productivity.[43]

[39] Martín-Oliver, A., Ruano, S., & Salas-Fumás, V. (2013). 'Why high productivity growth of banks preceded the financial crisis'. *Journal of Financial Intermediation*, 22 (4), pp. 688-712. https://doi.org/10.1016/j.jfi.2013.04.004

[40] Huber, K. (2018). 'Disentangling the Effects of a Banking Crisis: Evidence from German Firms and Counties'. *American Economic Review*, 108 (3), pp. 868–98. https://doi.org/10.1257/aer.20161534

[41] Douch, M., Edwards, H. & Mallick, S. (2023). 'Productivity Debacle in the UK: Do Post-crisis Firm Cohorts Explain the Performance Puzzle?'. *British Journal of Management*, 34, pp. 1459-1487. https://doi.org/10.1111/1467-8551.12641

[42] Goodridge, P., Haskel, J. & Wallis, G. (2018). 'Accounting for the UK Productivity Puzzle: A Decomposition and Predictions'. *Economica,* 85(339), pp.581-605. https://doi.org/10.1111/ecca.12219. Riley, R., Rincon-Aznar, A. & Samek, L. (2019). 'Below the Aggregate: A Sectoral Account of the UK Productivity Puzzle', NIESR Discussion Paper No. 508. Available at: https://www.niesr.ac.uk/publications/below-aggregate-sectoral-account-uk-productivity-puzzle?type=discussion-papers. Crafts, N. & Mills, T.C. (2020). 'Is the UK Productivity Slowdown Unprecedented?'. *National Institute Economic Review*, 251, R47-R53. http://dx.doi.org/10.1017/nie.2020.6

[43] Bean, C. (2016). *Independent Review of UK Economic Statistics*. HM Treasury. Available at: https://www.gov.uk/government/publications/independent-review-of-uk-economic-statistics-final-report

Research the FCA would benefit from

- Suggestions on how to measure or estimate productivity (or changes in productivity) that account for issues like inflation, risks such as hidden financial instability, and retained consumer surplus (the extra value consumers gain from goods or services that isn't reflected in their market price).
- Targeted research that directly tests hypotheses about the causes of low productivity growth in domestic financial services.

Q2: What drives innovation in the UK's domestic FSS, and how can regulation support it?

Motivation

- In most industries and markets, productivity increases are driven by innovations in technology, business models, processes, and products.
- Financial services are likely no different. Understanding what drives, and impedes, innovation in the UK's FSS and how regulation can support it has a direct link to how regulation can support productivity increases, and thus macroeconomic growth.

Literature Review

- There is limited discussion of the relationship between competition and innovation in FSS. One study of the banking industry in the US suggests that there is an inverted-U relationship between competition and innovation. [44] This finding has been replicated in a study of the Taiwanese banking sector.[45]
- Analysis of the US banking industry also found that deregulation lowered competition by increasing banks' ability to consolidate. US banks had consolidated beyond their optimal innovation level, and hence deregulation led to lower innovation in the US' FSS.[46]
- The diffusion of digital technologies can drive the growth and competitiveness of SMEs by enabling them to integrate into broader markets and improve their productivity. According to diffusion of innovation theory, technologies with clear advantages and high compatibility spread faster, allowing SMEs to adopt innovations that enhance operational efficiency and create new opportunities in sectors like e-commerce and digital services.[47]
- A case study of mobile payment innovation suggests that regulation can either support or impede innovation. Effective regulation reduces uncertainty, sets clear standards, and reduces barriers. Moreover, this case study highlights the importance of cooperative, rather than defensive, behaviour from firms in the diffusion of innovation, both within FSS and with firms in other sectors.[48] For

[44] Bos, J.W.B., Kolari, J.W., & Van Lamoen, R.C.R. (2013). 'Competition and innovation: Evidence from financial services'. *Journal of Banking & Finance*, 37(5), pp.1590-1601. https://doi.org/10.1016/j.jbankfin.2012.12.015.

[45] Huang, T.H., Hu, C.N., Chang, B.G. (2018). 'Competition, efficiency, and innovation in Taiwan's banking industry — An application of copula methods'. *The Quarterly Review of Economics and Finance*, 67, pp.362-375, https://doi.org/10.1016/j.qref.2017.08.006.

[46] Bos, J.W.B., Kolari, J.W., & Van Lamoen, R.C.R. (2013). 'Competition and innovation: Evidence from financial services'. *Journal of Banking & Finance*, 37(5), pp.1590-1601. https://doi.org/10.1016/j.jbankfin.2012.12.015.

[47] Xiao, S., Zhou, P., Zhou, L., & Wong, S. (2024). 'Digital economy and urban economic resilience: The mediating role of technological innovation and entrepreneurial vitality'. *PLOS ONE*, 19(6), e0303782. https://doi.org/10.1371/journal.pone.0303782

[48] Liu, J., Kauffman, R.J., & Ma, D. (2015). 'Competition, cooperation, and regulation: Understanding the evolution of the mobile payments technology ecosystem'. *Electronic Commerce Research and Applications*, 14(5), pp. 372-391. https://doi.org/10.1016/j.elerap.2015.03.003

example, in the US the creation of Apple Pay required cooperation from payment networks for the technology firm to innovate and deliver a new payment method.[49]

- Interviews with risk managers from a small sample of banks and insurers in the UK suggest that regulation plays a large role in shaping risk culture. The interviews highlighted the possibility that compliance costs could crowd out actual risk management and creative thinking, reducing the resources dedicated to innovation around risk management.[50] However, a larger study of banks in developed nations found that the effect of regulation on risk-taking is ambiguous, depending on the type of regulatory instrument and firm characteristics.[51]
- There is a debate in the literature on the relationship between competition and FSS risk-taking, with conflicting results on the impact of competition on risk-taking behaviour by financial services firms. While some studies find that increased competition increases bank risk-taking, others find evidence of a U-shaped relationship.[52]

Research the FCA would benefit from

- Investigation into the relationship between competition, contestability and risk-taking - about which there is already a considerable general literature - and regulation, productivity and innovation in the UK's FSS. For example, it would be valuable to know if there is an inverted-U relationship between competition and innovation in the UK's FSS, and, if so, where sub-sectors within the UK's FSS currently sit in relation to the point of 'optimal' competition.
- Research looking at the incentive and ability of firms to innovate and increase productivity.
- Inquiry into the determinants of cooperative vs defensive behaviour in FSS. This could include discussion of how regulation could encourage innovation-enhancing cooperation between firms in a way that does not undermine competition and is compatible with competition law.

[49] Liu, J., Kauffman, R.J., & Ma, D. (2015). 'Competition, cooperation, and regulation: Understanding the evolution of the mobile payments technology ecosystem'. *Electronic Commerce Research and Applications*, 14(5), pp. 372-391. https://doi.org/10.1016/j.elerap.2015.03.003

[50] Power, M., Ashby, S. & Palermo, T. (2013). *Risk Culture in Financial Organisations*. London School of Economics and Political Science. Available at: https://eprints.lse.ac.uk/67978/1/Palermo_Rsik%20culture%20research%20report_2016.pdf

[51] Danisman G.O. & Demirel P. (2019). 'Bank risk-taking in developed countries: The influence of market power and bank regulations'. *Journal of International Financial Markets, Institutions and Money*, 29, pp.202-217. https://doi.org/10.1016/j.intfin.2018.12.007

[52] Schaeck, K., Cihak, M. & Wolfe, S. (2009). 'Are Competitive Banking Systems More Stable?'. *Journal of Money, Credit and Banking*, 41(4), pp.711-734. https://doi.org/10.1111/j.1538-4616.2009.00228.x. Berger, A.N., Klapper, L.F. & Turk-Ariss, R. (2017) 'Bank competition and financial stability'. In J.A. Bikker& Spierdijk, L. (eds). *Handbook of Competition in Banking and Finance*. Edward Elgar Publishing Limited. Available at: https://www.elgaronline.com/edcollchap/edcoll/9781785363290/9781785363290.00018.xml. Boyd, J.H. & De Nicoló, G. (2013) 'How does competition affect bank risk-taking?', *Journal of Financial Stability*, 9(2), pp.185-195. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1572308913000119. Danisman G.O. & Demirel P. (2019) 'Bank risk-taking in developed countries: The influence of market power and bank regulations', *Journal of International Financial Markets, Institutions and Money*, 29, pp.202-217, https://doi.org/10.1016/j.intfin.2018.12.007. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1042443118303147 Berger, A.N., Klapper, L.F. & Turk-Ariss, R. (2017) 'Bank competition and financial stability', in J.A. Bikker& Spierdijk, L. (eds.) *Handbook of Competition in Banking and Finance*. Cheltenham: Edward Elgar Publishing Limited. Available at: https://www.elgaronline.com/edcollchap/edcoll/9781785363290/9781785363290.00018.xml. Boyd, J.H. & De Nicoló, G. (2013) 'How does competition affect bank risk-taking?'. *Journal of Financial Stability*, 9(2), pp.185-195. https://doi.org/10.1016/j.jfs.2013.02.004. Danisman G.O. & Demirel P. (2019) 'Bank risk-taking in developed countries: The influence of market power and bank regulations'. *Journal of International Financial Markets, Institutions and Money*, 29, pp.202-217. HYPERLINK "https://doi.org/10.1016/j.intfin.2018.12.007"https://doi.org/10.1016/j.intfin.2018.12.007

- Investigation of how technology diffusion among firms, particularly SMEs, influences innovation and productivity in FSS, and what regulatory frameworks can support this process.
- Study of the effect of regulation on firm organisation and resource allocation, addressing the possibility of compliance activities crowding out innovation.

Growth in the real economy

- Financial services mobilise and allocate capital across the economy, enabling firms to access the finance they need to invest, innovate, and grow.
- Financial services also support growth through giving firms the information they need to help make the right investments, by reducing transaction and search costs, and by providing opportunities to de-risk operations.
- For individuals, financial services can boost growth through enabling consumers to invest in education and skills, and to support them financially in searching for the job which best matches their skills and needs.
- Financial services can also increase consumer demand through increasing financial inclusion where this allows consumers to access affordable credit.
- Gaining a deeper understanding these transmission mechanisms will help the FCA regulate in a way that promotes growth in the rest of the economy.

Q1: What role can regulation play in ensuring that real economy firms are able to access suitable finance at competitive prices?

Motivation

- Financial regulation can support growth in the real economy by ensuring that markets work efficiently and provide the services firms need.
- This includes measures taken to increase trust and confidence in markets and market institutions, to increase competition and consumer protection, and to ensure market stability.

Literature Review

- The UK Federation of Small Business claims that many firms, particularly SMEs, have had difficulty accessing finance from traditional lenders (such as large banks) which may have become more risk-averse since the GFC.[53] This may mean there is a high prevalence of 'non-borrowers' in the UK, which could be holding back growth. [54]
- There is a large body of work on the barriers to accessing finance. For example, a study of US interstate banking found that higher competition between banks and financial firms gives rest-of-economy firms better access to suitable finance. Where a higher proportion of banks are government-owned, and where credit

[53] Federation of Small Businesses. (2022). *Credit Where Credit's Due.* Available at: https://www.fsb.org.uk/resource-report/credit-where-credit-s-due.html
Lu, L. (2018). 'Promoting SME Finance in the Context of the Fintech Revolution: A Case Study of the UK's Practice and Regulation'. *Banking and Finance Law Review*, 33(3), pp. 317-343. Available at SSRN: https://ssrn.com/abstract=3144767
[54] Lee, N. (2013). 'What holds back high-growth firms? Evidence from UK SMEs', *Small Business Economics*, 43, pp. 183-195. Available at: https://link.springer.com/article/10.1007/s11187-013-9525-5.
Tsuruta, D. (2020) 'SME policies as a barrier to growth of SMEs', *Small Business Economics*, 54, pp. 1067-1106. https://doi.org/10.1007/s11187-013-9525-5.
Enterprise Research Centre. (2023). *The State of Small Business Britain*. Available at: https://www.enterpriseresearch.ac.uk/publications/the-state-of-small-business-britain-2023-a-manifesto-for-small-business-growth-and-productivity/

information is limited, the negative effects of a lack of competition (i.e. a reduction in access to suitable finance) are exacerbated.[55]

- While there is extensive research on the barriers to accessing suitable finance, there is little on how to effectively address barriers through improved regulation.
- A study of the Basel II guidelines found that adoption of internal ratings-based capital regulation by banks (where banks assess their own risk parameters and base the regulatory capital on a fixed fraction of risk-weighted assets) led to a higher probability of firms experiencing deterioration in their access to finance. This was attributed to a knock-on effect of banks increasing fees and changing the volumes of different types of lending. [56]

Research the FCA would benefit from

- Research exploring successful regulatory approaches for addressing barriers to accessing finance from other jurisdictions.
- Research into how to design regulation to reduce the costs associated with lending or investing, including reducing matching and risk costs associated with information asymmetry.

Q2: How does consumer use of financial services drive economic growth,[57] and what role does financial inclusion play in this process? What strategies can enhance these factors?

Motivation

- Financial inclusion means that individuals have access to affordable financial products that meet their needs, including payments, transactions, savings, credit, and insurance.[58]
- It provides consumers with greater opportunities to be able to access goods and services at more affordable prices and to reduce the risks of unexpected bills and employment and health shocks.
- Financial inclusion may also increase growth through providing individuals with opportunities to invest in education and skills, to start their own businesses, and to participate more effectively in the labour market through, for example, being able to search longer or further afield for a job that better matches their skills and needs.
- The impact on growth may be greater where credit is allocated to those consumers that choose to invest in increasing their skills and potential earnings (including repaying more expensive debt). Where credit is instead extended to those who have little realistic possibly of meeting repayments, there is a chance it may act as a drag on sustainable economic growth.

[55] Cornaggia, J., Mao, Y., Tian, X., & Wolfe, B. (2015). 'Does banking competition affect innovation?'. Journal of Financial Economics, 115(1), pp.189-209. https://doi.org/10.1016/j.jfineco.2014.09.001

[56] Tuuli, S. (2019) : Model-based regulation and firms' access to finance, Bank of Finland Research Discussion Papers, No. 4/2019, ISBN 978-952-323-261-7, Bank of Finland, Helsinki, https://nbn-resolving.de/urn:nbn:fi:bof-201902151065

. Love, I. & Martínez Pería, M.S. (2015). 'How Bank Competition Affects Firms' Access to Finance'. *The World Bank Economic Review*, 29(3), pp. 413-448. https://doi.org/10.1093/wber/lhu003

[57] Consumer means any natural person who is acting for purposes which are outside their trade or profession i.e. a retail consumer. As opposed to a commercial customer (i.e. a business which is purchasing financial services).

[58] https://www.worldbank.org/en/topic/financialinclusion/overview World Bank Group (2022) *Financial Inclusion*. Available at: https://www.worldbank.org/en/topic/financialinclusion/overview

Literature Review

- Some studies find that an expansion in consumer credit supply can lead to an increase in growth through boosting consumer demand and employment. [59]
- However, other studies show that elevated household debt can reduce economic growth and amplify the business cycle, which may suggest that increasing growth through boosting consumer demand may not be sustainable unless it leads to an increase in productivity.[60]
- Financial frictions can prevent lower-income households from becoming entrepreneurs which can increase inequality and reduce growth.[61]
- Access to finance can help to reduce the persistence of intergenerational human capital gaps through, for example, allowing better opportunities to access education.[62]
- Many studies on the effects of consumer financial services on growth focus on developing nations. These address this question at a broad level, often concluding that measures to increase financial inclusion, such as encouraging women and lower-income people to use financial services like bank accounts, contributes to economic growth. [63]
- Comparative studies from Tanzania and Kenya indicate that microfinance is important in developing nations, as rural communities would otherwise struggle to access and be educated in finance, with one study finding that savings are much more important in encouraging economic growth than credit. [64]
- However, other literature suggests that while financial inclusion is an important aspect of growth in developing countries, the marginal impact on more developed countries is much lower. [65]
- Literature on the UK is more policy focused. A review of financial inclusion policy in the UK argued that the unprofitability of current accounts meant providers were unlikely to invest in expanding access. It also highlighted how measures to prevent financial crime might reduce access by vulnerable populations.[66] However, the findings of the review may now be outdated, and literature on the UK after the GFC is limited.[67]
- Regulatory actions which encourage responsible lending and ensure fast dispute resolution and fair treatment with enforcement may be associated with an

[59] Mian, R., Sufi, A., & Verner, E. (2019) 'How Does Credit Supply Expansion Affect the Real Economy? The Productive Capacity and Household Demand Channels'. Available at SSRN: https://ssrn.com/abstract=2971086 or http://dx.doi.org/10.2139/ssrn.2971086

[60] Jord`a, O., M. Schularick, and A. M. Taylor (2016). The great mortgaging: housing finance, crises ` and business cycles. Economic Policy 31 (85), 107–152.

[61] See for example, Ross Levine, Yona Rubinstein, Smart and Illicit: Who Becomes an Entrepreneur and Do They Earn More?, *The Quarterly Journal of Economics*, Volume 132, Issue 2, May 2017, Pages 963–1018, https://doi.org/10.1093/qje/qjw044

[62] Levine, M.R., 2021. Finance, growth, and inequality. International Monetary Fund. Available at: https://www.imf.org/en/Publications/WP/Issues/2021/06/11/Finance-Growth-and-Inequality-460698

[63] Demirgüç-Kunt, A. & Singer, D. (2017) *Financial Inclusion and Inclusive Growth*. World Bank Group. Available at: https://documents.worldbank.org/curated/en/403611493134249446/pdf/WPS8040.pdf

[64] Qin, X. & Ndiege, B.O. (2013) 'Role of Financial Development in Economic Growth: Evidence from Savings and Credits Cooperative Societies in Tanzania', *International Journal of Financial Research*, 4(2). Available at: https://www.sciedu.ca/journal/index.php/ijfr/article/view/2660

[65] Rioja, F. and N.Valev (2004a), "Finance and the Sources of Growth at Various Stages of Economic Development", Economic Inquiry, 42(1), 27–40.

[66] Mitton, L. (2008). *Financial inclusion in the UK: Review of policy and practice.* Joseph Rowntree Foundation, ISBN 978-1-85935-654-8. (KAR id:78253). Available at: https://kar.kent.ac.uk/78253/

[67] Ozili, P.K. (2021). 'Financial inclusion research around the world: a review'. *Forum for Social Economics,* 50(4), pp. 457-479. https://doi.org/10.1080/07360932.2020.1715238.

increase in GDP, due to the improved access to and confidence in financial services. [68]

Research the FCA would benefit from

- A study of the risks and benefits of increasing financial inclusion, and how any dimensions of inclusion which affect growth and efficiency might be influenced by regulation.
- Investigation into how credit is allocated to low-income households, and whether household intentions to consume or to invest influence affordability criteria.
- Research into regulatory levers to help increase the benefits of inclusion, including the dimensions of inclusion which enable growth and efficiency.

Q3: Which real economy sectors are likely to be the biggest enablers of growth and what financial services regulatory action could help to support firms in those sectors?

Motivation

- While the FCA does not decide or directly influence where investments or lending is made, it may help contextualise FCA action and engagement to understand what areas of the economy are most likely to drive growth and what regulatory actions might be taken to help facilitate growth.

Literature review

- Two studies of innovation in the US conclude that small and new firms are highly important for innovation and contribute more to innovation than larger and older firms.[69]
- There is very little broad research on UK growth sectors and the role of regulation. Some papers focus on specific industries, such as the low-carbon industry, with little relation to growth or the macroeconomic picture.[70] These identify a role for regulators in increasing flows to low-carbon sectors, while emphasising the need to manage expectations. Others are focussed on other nations such as Indonesia with little relevance to the UK.[71]
- Much of the UK literature focuses on factors contributing negatively to growth, rather than promising sectors.[72] Other analyses take a broader view, trying to identify which component of production is responsible for slowed growth.[73]

[68] Weale, M. (2009). 'Growth prospects and financial services'. *National Institute Economic Review*, 207, pp.4-9. https://doi.org/10.1177/0027950109103667. Fethi, S. & Katircioglu, S. (2015) 'The role of the financial sector in the UK economy: evidence from a seasonal cointegration analysis'. *Economic Research-Ekonomska Istraživanja*, 28(1), pp.717-737. https://doi.org/10.1080/1331677X.2015.1084476. Kriese, M., Abor, J.Y. & Agbloyor, E. (2019) 'Financial consumer protection and economic growth'. International Journal of Emerging Markets, 14(5), pp.1060-1080. https://doi.org/10.1108/IJOEM-05-2018-0229

[69] Acemoglu, D., Akcigit, U., Alp, H., Bloom, N. & Kerr, W. (2018) 'Growth through Heterogeneous Innovations', *Journal of Political Economy*, 126(4), pp. 1374-1440. https://doi.org/10.1086/697901. Acemoglu, D., Akcigit, U., Alp, H., Bloom, N. & Kerr, W. (2018) 'Innovation, Reallocation, and Growth', *American Economic Review*, 108(11), pp. 3450-3491. https://doi.org/10.1257/aer.20130470

[70] For example, Demekas, D., Grippa, P. (2022). 'Walking a Tightrope: Financial Regulation, Climate Change, and the Transition to a Low-Carbon Economy'. *Journal of Financial Regulation*, 8(2), pp.203-229, https://doi.org/10.1093/jfr/fjac010. Evain, J., Cardona, M. (2021). *Can Financial Regulation accelerate the low-carbon transition?* Institute for Climate Economics. Available at: 0128-20h-i4ce3371-Rapport_RegltFinTransiBc-VA.pdf. Stern, N. (2023) 'Harnessing creative destruction to the tackling of climate change'. In Akcigit, U. & Van Reenen, J. (eds). *The Economics of Creative Destruction: New research on themes from Aghion and Howitt*. Harvard University Press.

[71] For example, Tambunan, T. (2015) 'Financial Inclusion, Financial Education, and Financial Regulation: A Story from Indonesia'. *ADBI Working Paper 535*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2641734

[72] For example, Coyle, D., & Mei, J.C. (2023) 'Diagnosing the UK productivity slowdown: which sectors matter and why?'. *Economica*, 90, pp.813-850. https://doi.org/10.1111/ecca.12459

[73] For example, Goodridge, P., Haskel, J. & Wallis, G. (2018) 'Accounting for the UK Productivity Puzzle: A Decomposition and Predictions'. *Economica,* 85(339), pp.581-605. https://onlinelibrary.wiley.com/doi/10.1111/ecca.12219.

- An empirical study of 31 countries using difference-in-differences estimations found that FSS innovation helps to exploit growth opportunities in high potential sectors, with the caveat that this takes place in a country with a developed securities market. This also supports the theory that FSS innovation plays a larger, more positive role in a country‘s growth than just serving as regulatory arbitrage.[74]

Research the FCA would benefit from

- Insight into how the FSS in the UK can enable growth in specific sectors, particularly those with high growth potential.
- Targeted research which sets out a framework to identify the real economy sectors that have the most potential for growth and which identifies the financial sector regulatory levers that can best support these diverse sectors. For example, different levers are likely to be relevant to promoting growth in existing SMEs, growth from start-ups, and growth from the increased productivity of large established firms.

Q4: What risks might growth in the FSS pose for long-term UK growth?

Motivation

- Much of this review has examined the how FSS activities can contribute positively to growth. However, there is extensive literature indicating that the degree and speed of growth in the financial services sector, as well as an economy's reliance on it, can lead to negative outcomes in certain situations.

Literature review

- A study of the growth of FSS in the US suggests that FSS growth in 1980-2007 was largely driven by expansions in asset management and credit intermediation. Growth in credit intermediation increased instability from excessive household leverage, and increased system fragility through the rise of shadow banking.[75]
- An extensive literature on ‘financialisation’ focusses on the large and growing share of profits and income absorbed by the FSS. This raises concerns that a large financial sector might crowd out investments aimed at increasing profitability in the non-financial sector. There is some evidence that non-financial firm focus on financial payments to the financial sector crowded out real investment in EU countries, particularly prior to the GFC.[76]
- The ‘competition-stability’ vs. ‘competition-fragility’ debate highlights the potential for competition in financial services to increase macroeconomic instability by increasing risk-taking by financial institutions.[77]

[74] Beck, T., Chen, T., Lin, C. & Song, F.M. (2016). ’Financial innovation: The bright and the dark sides’. *Journal of Banking & Finance*, 72, pp.28-51. https://doi.org/10.1016/j.jbankfin.2016.06.012

[75] Greenwood, R. & Scharfstein, D. (2013) ’The growth of finance‘, *Journal of Economic Perspectives*, 27(2), pp.3-28. Available at: https://www.aeaweb.org/articles?id=10.1257/jep.27.2.3

[76] Engelen, E. (2008) ‘The Case for Financialization’, *Theory, Culture & Society,* 12(2), p.111-119. Available at: https://journals.sagepub.com/doi/abs/10.1179/102452908X289776, Davis, L. (2018) ‘Financialization and Investment: A Survey of the Empirical Literature’, in R. Veneziani & Zamparelli, L. *Analytical Political Economy*. Hoboken: Wiley-Blackwell. Available at: https://onlinelibrary.wiley.com/doi/10.1002/9781119483328.ch8, Barradas, R. (2017) ‘Financialisation and Real Investment in the European Union: Beneficial or Prejudicial Effects?’, *Review of Political Economy*, 29(3), pp. 376-413. Available at:https://www.tandfonline.com/doi/full/10.1080/09538259.2017.1348574

[77] Danisman G.O. & Demirel P. (2019) ’Bank risk-taking in developed countries: The influence of market power and bank regulations’, *Journal of International Financial Markets, Institutions and Money*, 29, pp.202-217,

Research the FCA would benefit from

- More empirical studies to examine the impact of specific activities on financial stability and economic growth in the UK.
- Analysis of the potential for regulation to combat the adverse effects of FSS practices, and to limit adverse incentives from financial market pressures.
- A study of the role of regulation in preventing potential crowding out by the FSS, and more generally in influencing the allocation of capital across the UK economy to further incentivise growth. This research could explore how regulatory frameworks affect supply and demand dynamics, impacting the availability of capital and the responsiveness of firms to opportunities.

Q5: What explains changes in private debt since the GFC? What does this tell us about where regulators should focus?

Motivation

- Private debt bears an important relationship with investment and growth. Firms use debt partly to finance expansion, contributing to overall economic growth. Consumers may use debt to finance investments in human capital, which increase the quality of the labour force and enhance long-run growth prospects.
- Much of the commentary on this question focuses on imperfections in the supply of investment and lending to firms in the economy. However, macroeconomic movements in debt and investment may also have been driven by demand-side factors. Understanding the differing interactions between the demand and supply of credit will help the FCA focus interventions where they are likely to have the largest impact – there is little point in optimising the supply of a product if the demand simply isn't there.

Literature review

- Investment as a percentage of GDP fell after the GFC but has since recovered to pre-GFC levels. However, UK investment remains low compared to the US, OECD, and EU.[78]
- Household and firm debt has mostly been falling as a percentage of GDP since the GFC. Compared to a selection of OECD countries, UK household debt is relatively high,[79] while nonfinancial corporate debt is relatively low.[80,81]
- An extensive literature on the effects of the GFC on firm borrowing points to a variety of mostly supply-side factors affecting private borrowing by firms, including reductions in bank risk-taking, tighter terms for issuing debt, and

https://doi.org/10.1016/j.intfin.2018.12.007. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1042443118303147.

Schaeck, K., Cihak, M. & Wolfe, S. (2009) 'Are Competitive Banking Systems More Stable?', *Journal of Money, Credit and Banking*, 41(4), pp.711-734. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1538-4616.2009.00228.x, Boyd, J.H. & De Nicoló, G. (2013) 'How does competition affect bank risk-taking?', *Journal of Financial Stability*, 9(2), pp.185-195. Available at: https://www.sciencedirect.com/science/article/abs/pii/S1572308913000119

[78] OECD (2024) Data Explorer: (DSD_NAAG@DF_NAAG) NAAG. Available at:

https://data-explorer.oecd.org/vis?df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_NAAG%40DF_NAAG&df%5bag%5d=OECD.SDD.NAD&df%5bvs%5d=&pd=%2C&dq=A....&to%5bTIME_PERIOD%5d=false&vw=ov&lb=bt

[79] In 2022, UK household debt as a percentage of GDP ranked 7th highest out of 22 OECD countries on which data were available.

[80] In 2022, UK nonfinancial corporate debt as a percentage of GDP ranked 19th highest out of 22 OECD countries for which data were available.

[81] International Monetary Fund (2024) *Global Debt Database.* Available at: https://www.imf.org/external/datamapper/datasets/GDD

increased market noise during recessions.[82] Demand-side factors appear to have become more important in recent years, and may include 'scarred borrowers' and uncertainty.[83]

- There is less literature on the factors driving trends in household borrowing. Survey evidence, as well as information on household access to credit, suggests that low-income households may be facing higher credit constraints, causing them to fall behind on priority bills.[84]
- After rising steeply during the GFC, UK public debt has been falling on average since 2009, with a brief period of growth during the Covid-19 pandemic.[85] Increases in public debt have been found to be associated with lower growth levels at high levels of public debt,[86] but the existence of this 'crowding out' effect remains controversial.[87]

Research the FCA would benefit from

- Research exploring avenues for increasing credit availability for credit-constrained consumers, bearing in mind the trade-off between inclusion and risk.
- A study which weighs the relative importance of factors reducing firms' access to finance and firms' demand for finance, and identification of regulatory measures that could best address these factors.

Q6: What is the impact of financial services regulation on the incentives that rest-of-economy firms face to be efficient, productive, innovative, and to grow?

Motivation

- How investments are funded will have an impact on the incentives that firms face. Debt financing and equity financing both place different constraints and incentives on firms, as does equity raised in public or private markets.
- The ways in which holders of debt and equity influence firm behaviour may also be important.
- Optimising these incentives could have profound impacts on long-run productivity and macroeconomic growth.

[82] Lu, L. (2018) 'Promoting SME Finance in the Context of the Fintech Revolution: A Case Study of the UK's Practice and Regulation', *Banking and Finance Law Review*, 33(3), pp. 317-343. Available at: https://kclpure.kcl.ac.uk/ws/portalfiles/portal/130097861/Lerong_Lu_Promoting_SME_Finance_in_the_Context_of_the_Fintech_Revolution_2018_.pdf, De Haas, R., Van Horen, N. (2010) The crisis as a wake-up call. Do banks tighten lending standards during a financial crisis? *De Nederlandsche Bank Working Paper No. 255.* Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1949065

[83] Cowling, M., Liu, W., & Calabrese, R. (2022) 'Has previous loan rejection scarred firms from applying for loans during Covid-19?' *Small Business Economics*, 59, pp.1327-1350, DOI: 10.1007/s11187-021-00586-2. Available at: https://link.springer.com/article/10.1007/s11187-021-00586-2, BVA BRDC (2024) *SME Finance Monitor: Q4 2023 Report.* Available at: https://www.bva-bdrc.com/wp-content/uploads/2024/03/BVABDRC_SME_FM_Q423_Full_Report.pdf

[84] Odamtten, F., & Pittaway, S. (2024) *In too deep? The impact of the cost of living crisis on household debt.* The Health Foundation & Resolution Foundation. Available at: https://www.resolutionfoundation.org/publications/in-too-deep/, Francis-Devine, B. (2024) *Household debt: statistics and impact on economy*. House of Commons Library. Available at: https://commonslibrary.parliament.uk/research-briefings/cbp-7584/

[85] International Monetary Fund (2024) Global Debt Database. Available at: https://www.imf.org/external/datamapper/datasets/GDD

[86] Reinhart, C.M., Rogoff, K.S. (2010). 'Growth in a time of debt', *American Economic Review*, 100(2), pp.573-578, DOI: 10.1257/aer.100.2.573. Available at: https://www.aeaweb.org/articles?id=10.1257/aer.100.2.573

[87] Ünsal, M.E. (2020) 'Crowding-Out Effect: Evidence from OECD Countries', *Istanbul Journal of Economics*, 70(1), pp.-16, DOI: 10.26650/ISTJECON2020-0001. Available at: https://iupress.istanbul.edu.tr/en/journal/ije/article/crowding-out-effect-evidence-from-oecd-countries

Literature review

- Comparison of the innovation activity of US firms that go public with those that withdraw their IPO and remain private, finds that although going public does not reduce the level of innovation (as measured by number of patents), it changes the nature of innovation, with more conventional research leading to incremental innovations, and fewer breakthrough innovations.[88]
- Institutional investors are increasingly holding more equity in corporate firms. These are managers of assets, who own substantial 'blocks' of shares. As such, they are both owners of capital and agents acting on behalf of other owners. Recent studies have shown that this complex relationship can lead both to poor governance and insufficient innovation incentives which may harm the long-term financial prospects of the firm.[89]
- Financialisation in general may also affect firm management. Analysis of corporate management suggests that a focus on shareholder value can undermine both firm performance and financial stability.[90]
- There is a wide body of research on the effects of service-level regulation (e.g., competition and product regulation)[91], including a study of OECD countries which concludes that market-friendly, lighter regulation leads to higher rates of growth. This study constructed a measure of financial development based on UK firms' exposure to external (bank) credit and found that productivity increased with financial development. [92]
- A study using OECD country-level GDP data found that financial system regulation had a statistically significant influence on output and productivity growth, via the impact on industrial sectors relying more on external funding.[93] Both papers' conclusions infer that enabling wider access to bank capital can be an incentive for productivity growth, as firms can invest with less regard to cashflow.
- Models of firm innovation and R&D subsidies indicate that government funding for R&D may be inefficiently distributed between innovative and less innovative firms. Lowering barriers for less innovative firms to exit the market could improve overall efficiency.[94]
- A study of US TFP finds that the slow growth in productivity since 1980 is largely caused by a lack of capacity to process ideas (i.e., turn ideas into a product, service, or technique). It suggests that regulation could help improve FSS effectiveness so that processing capacity increases, meaning that firms are able to

[88] Bernstein, S. (2015). 'Does Going Public Affect Innovation?'. *The Journal of Finance*, 70(4), pp.1365-1403. https://doi.org/10.1111/jofi.12275

[89] Dasgupta, Fos, and Sautner (2021). *Institutional Investors and Corporate Governance*. ECGI Discussion Paper. Avaailable at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3682800

[90] Froud, J., Haslam, C., Johal, S. & Williams, K. (2000) 'Shareholder value and Financialization: consultancy promises, management moves', Economy and Society, 29(1), pp. 80-110. Available at: https://www.tandfonline.com/doi/pdf/10.1080/030851400360578, Froud, J., Haslam, C., Johal, S. & Williams, K. (2000) 'Shareholder value and corporate governance: some tricky questions', Economy and Society, 29(1), pp. 80-110. Available at: https://www.tandfonline.com/doi/pdf/10.1080/030851400360578

[91] Alesina, A., S. Ardagna, G. Nicoletti and F. Schiantarelli (2005), "Regulation and Investment", Journal of the European Economic Association, Vol. 3, No. 4 (June). pp. 791-825. Available at: https://core.ac.uk/download/pdf/28930225.pdf

[92] Arnold, J.M., Nicoletti, G., & Scarpetta, S. (2008). Regulation, Allocative Efficiency and Productivity in OECD Countries: Industry and Firm-Level Evidence. Available at: https://www.oecd-ilibrary.org/docserver/241447806226.pdf?expires=1728467302&id=id&accname=guest&checksum=9972DF1B2381FA07E12DF28CF70D04CF

[93] de Serres, A., Kobayakawa, S., Sløk, T., & Vartia, L. (2007) *Regulation of Financial Systems and Economic Growth*.OECD Working Paper No. 506. Available at: https://www.oecd-ilibrary.org/economics/regulation-of-financial-systems-and-economic-growth_870803826715

[94] Acemoglu, D., Akcigit, U., Alp, H., Bloom, N. and Kerr, W. (2018) 'Innovation, Reallocation, and Growth', *American Economic Review*, 108(11), pp. 3450-3491. Available at: https://www.aeaweb.org/articles?id=10.1257/aer.20130470

act on and invest in the innovative ideas that they have, to create better products and services.[95]

Research the FCA would benefit from

- Targeted research using UK data to assess the allocation of capital and whether firms have enough access to external financing to incentivise investment.
- Research into the potential benefits of shifting investment incentives from speculative investment to productive investments, and how regulation could encourage this.
- Research into the changing incentives on publicly listed firms from shifts in market dynamics, such as the increase in passive investing, could help the FCA hone public listing rules to better incentivise the performance of publicly listed firms.
- Broader research on how changes in financial services regulation could affect incentives on firms and individuals to deliver sustained growth.

[95] James, Kotak, and Tsomocos (2024), "Ideas, Idea Processing, and US TFP Growth: Testing the Weitzman Conjecture", SRC Working Paper (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4161964)

4 Next steps

We welcome comments and suggestions for research we may have missed, questions we haven't asked, and further areas of research that might be promising. Please contact growtheconomics@fca.org.uk and we will endeavour to respond.

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