Institution: Brunel University London		
Unit of Assessment: 16 Economics and Econometrics		
Title of case study: Improving risk management at the European Central Bank and Bank of England in light of banking competition and bank regulation		
Period when the underpinning research was undertaken: 2000-2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): E Philip Davis Dilruba Karim	**Role(s) (e.g. job title):** Professor Senior Lecturer in Economics and Finance	**Period(s) employed by submitting HEI:** 10/2000 - Present 09/2005 - Present
Period when the claimed impact occurred: 2014 - 2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact (indicative maximum 100 words)

Professor Philip Davis and Dr Dilruba Karim have conducted research on bank competition, capital and risk. Their research demonstrated a clear link between bank competition and institutional and sectoral risk and also concluded that the leverage ratio is an important indicator of bank risk, which had been widely disregarded by authorities. The innovative research enabled the European Central Bank (ECB) to make significant improvements within their operational structures. The ECB changed their assessment of strategic risk and boosted the focus of their macroprudential surveillance which subsequently mitigated potential harm to the European financial system. Nationally, Prof. Davis and Dr Karim's research has improved the Bank of England's ability to predict a wide range of risks in the banking system by enhancing their approach to risk evaluation. As a result, the Bank of England is now able to interpret better the use of the leverage ratio as a way to reduce banking sector risk.

2. Underpinning research (indicative maximum 500 words)

Prof. Philip Davis and Dr Dilruba Karim have a track record of extensive research in the areas of financial stability and financial regulation as well as on banking crises and their economic impacts (Ref. 1; Ref. 3; Ref. 5). Their research interests focus in particular on the links between banking competition and risks and financial stability (Ref. 2; Ref. 4; Ref. 6).

The banking sector is core to the economy but vulnerable to systemic failure, which can have detrimental economic consequences. Systemic risk was one of the main contributors to the 2008 financial crisis, which triggered severe instability in the economy and inaugurated a decade of fiscal austerity in the UK. This is why central banks and other regulators, both nationally and globally, are keen to improve their ways of monitoring and controlling banking sector risk.

However, current scholarship does not adequately address the nuances of the relationship between bank competition and risk, which are relevant for regulators who assess risks concerning financial stability. Prof. Davis and Dr Karim conducted research that addresses this gap and found both short-and long-run relationships between the competition and risk for banks from 27 EU countries (Ref. 2). Focusing on 2 6-year periods (pre- and post-2007), Prof. Davis and Dr Karim used 2 competition indicators: the H-statistic (which indicates the scope of competition in the country concerned) and the Lerner index (which indicates profit margins bank by bank). They found that both indicators have a positive short-run relationship with risk while long-run effects differ. These findings have important implications for policymaking, because they show that regulators should be cautious in the initial period after a rise in competition (because the indicators show an accompanying rise in bank risk). In the longer term, the likely impact of a given policy shift should be carefully considered (e.g. requiring a shift in certain macroprudential policies) (Ref. 2).

In 2017, the Bank of England commissioned Prof. Davis and Dr Karim to conduct research on bank leverage ratios (which is the relationship of bank capital to assets), competition, and risk globally (Grant 1). The Bank of England were in the process of introducing a minimum leverage ratio of 3% under the “Basel III” global agreement on bank regulation which adopted the leverage ratio as a prudential tool. As research on leverage ratios outside the US is limited, they commissioned Prof. Davis and Dr Karim to find out more about its potential effectiveness.

The research findings demonstrated a clear link between bank competition and institutional and sectoral risk, which had been widely disregarded by authorities, and in addition showed that the leverage ratio is an important indicator of bank risk (Ref. 4; Ref. 6). In more detail, the research assessed the effectiveness of a leverage ratio relative to the more commonly used regulatory risk-adjusted capital ratio (RAR) (which is used to measure a financial institution’s ability to withstand an economic downturn) in predicting individual bank risk in light of competition in the EU and the US (Ref. 4).

In addition to juxtaposing the leverage ratio with the RAR, Prof. Davis and Dr Karim used a dataset of national banking sectors to address a number of unresolved issues in the field of financial stability, which are significant for bank regulators (Ref. 6). Using macro data for approximately 120 countries globally, Prof. Davis and Dr Karim researched the signs of the relationship between bank competition and financial stability; the relation of capital adequacy of banks to risk; the nature of the relation between bank competition and bank capital; and the stability of advanced vs emerging market financial systems. The results detected a strong link between banking competition and crises, and showed that banking crises are more likely if there is a high level of competition, low leverage ratios or regulatory capital ratios, lower deposit/asset ratio, and a higher ratio of credit to assets (Ref. 6).

3. References to the research (indicative maximum of six references)

OUTPUTS:

Ref. 1 Barrell R., Karim D. & Ventouri A. 2017, ‘Interest rate liberalization and capital adequacy in models of financial crises’, *Journal of Financial Stability* 33, 261- 272
https://doi.org/10.1016/j.jfs.2016.09.001

Ref. 2 Davis E. P. & Karim D. 2018, ‘Exploring short- and long-run links from bank competition to risk’, *European Financial Management* 25, 462-488
https://doi.org/10.1111/eufm.12176

Ref. 3 Karim D., Barrell R. & Macchiarelli C. 2018, ‘Towards an understanding of credit cycles: do all credit booms cause crises?’, *European Journal of Finance*
https://doi.org/10.1080/1351847X.2018.1521341

Ref. 4 Davis E.P., Karim D. & Noel D. 2019, 'Bank Leverage Ratios, Risk and Competition – An Investigation Using Individual Bank Data, National Institute of Economic and Social Research (NIESR) Discussion Paper No. 499

Ref. 5 Barrell R. & Karim D. 2019, 'Bank Credit, Capital and Crises", Brunel Economics and Finance Working Paper Series No 19-01

Ref. 6 Davis E.P., Karim, D. and Noel, D. 2020, 'The bank capital-competition-risk nexus - A global perspective', *Journal of International Financial Markets, Institutions and Money* https://doi.org/10.1016/j.intfin.2019.101169

GRANTS:

Grant 1 Davis, E.P (PI) and Dilruba, K. (Co-I) 2017 – 2018. 'Bank leverage ratios competition and risk: Does Basel III go far enough?' GBP3,000. Funded by the Bank of England.

4. Details of the impact (indicative maximum 750 words)

Prof. Davis' and Dr Karim's research findings show a clear link between bank competition to institutional and sectoral risk that authorities had previously disregarded, and identified the leverage ratio as an important indicator of bank risk. This novel assessment has enabled the European Central Bank (ECB) and the Bank of England to increase their focus on banking competition and the leverage ratio and understanding of their links to risks, review their operational structure and influenced thinking of bank authorities in terms of crisis determinants.

The ECB is the central bank of the 19 EU member countries that have adopted the Euro. Its main priority is to maintain price stability in the euro zone and preserve the purchasing power of the single currency. The ECB carries out a series of dedicated tasks in the fields of banking supervision, macroprudential policy and financial stability in order to maintain financial stability within the EU and each member state.

[REDACTED]

[REDACTED]

Prof. Davis' and Dr Karim's research expertise has [REDACTED] directly contributed to mitigating financial harm and maintaining financial stability within the euro area and each EU member state [REDACTED]. This, in turn, helped safeguard the value of the Euro, which consequently benefitted the approximately 340,000,000 citizens living in the 19 countries that make up the euro area.

At national level, Prof. Davis' and Dr Karim's research directly expanded the understanding of competition and influenced attitudes to leverage ratios. These led the Bank of England to review the effectiveness of their operational structures in light of their responsibility for regulating the banking system and conducting monetary policy, and in their interest of avoiding financial instability. Because of these conceptual and operational alterations, the Bank of England was able to evaluate whether to expand their role in influencing banking sector competition in relation to banking sector risks.

[REDACTED]

The PRA supervises approximately 1,500 financial institutions, including banks, investment firms and insurance companies. It ensures that these financial institutions hold their customers' money safely and reduce their chance of encountering financial difficulties.

Prof. Davis' and Dr Karim's research directly shaped the Bank of England's ability to predict a wide range of risks in the banking system, including banking crises; non-performing loans; provisions for loan defaults; rapid loan growth and measures of stability known as the z-score which indicates risks of insolvency at the level of individual financial institutions. [REDACTED]

In earlier work, the Bank of England had looked at relations between competition and risks for UK banks; however, the Brunel work encompasses a wider understanding that includes other countries and a wider range of risk indicators which allowed them to make more informed policy decisions. [REDACTED]

Prof. Davis' and Dr Karim's research also had significant impact on the mind-set of present and future analysts in macroprudential risk assessment, as it influenced the Bank of England's approach to risk evaluation and shaped the thinking that went into the drafting of their biannual report on financial stability. It will continue to inform the drafting and writing of future reports. [REDACTED]

Prof. Davis' and Dr Karim's research has demonstrated its innovative and transformative nature and shown how a change in assessment of banking risks and competition can have a fundamental impact on the prevention of future banking crises. The improved supervision of a wide range of systemic risks enables national and central Banks to reduce the occurrences of systemic failures and consequently leads to improved outcomes for financially vulnerable people who would be most affected by banking crises, consequent recessions and fiscal austerity.

5. Sources to corroborate the impact (indicative maximum of 10 references)

Source 1: Letter from the European Central Bank
Source 2: Letter from the Bank of England
Source 3: Bank of England, Financial Stability Report, December 2019