

A Decade After the Global Financial Crisis: New Regulatory Challenges to Financial Stability

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Abstract

Since the global financial crisis in 2008 regulatory measures have been taken to strengthen the international financial sector. There are however regulatory challenges that have the potential to destabilise the international financial sector. This article examines three of these challenges: Fintech, Brexit, and Emerging Markets Economies. There is currently no significant analysis of these issues in relation to their effect on global financial stability. This article addresses this gap and analyses why these issues form a threat to financial stability. Fintech is modest but growing exponentially and there is little regulation in place, Brexit is characterised by prolonged uncertainty and potentially significant negative effects on the economy, and Emerging Markets Economies now occupy a far larger part of the international financial sector than in 2008 and their potential effects on global financial stability are also significantly stronger. The analysis leads to the conclusion that the common threat emerging from these challenges is policy uncertainty which leads to increased wariness from investors, which in turn leads to sudden changes in capital flows. This can potentially affect international financial stability. To mitigate these effects a more internationally harmonised approach to policy and regulation is key.

1. Introduction

It has been over a decade since the eruption of the global financial crisis (GFC) in 2008. The GFC was characterised by the failure of large financial institutions, important contagion between financial institutions, and the spread of adverse consequences from the financial system to the real economy. The crisis has had significant ramifications for public finances, cross-border capital flows, trade, the world economy, and people's living standards. In fact, its effects are still being felt. The severity of the GFC has revealed the main weaknesses in the international architecture for financial regulations. This includes preventing, managing, and

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resolving crises in the global financial system. The global financial regulatory community recognised that there were major deficiencies in the way financial institutions and markets had been regulated. This was sufficiently demonstrated by the failure of large banks to manage risk and the unregulated expansion of a shadow banking system.¹ Therefore, in order to rectify the fault lines of the financial system, financial regulators have sought to enact a fundamental set of financial reforms. The reforms are built on the four key elements, which were the main causes of the crisis: making the over-the-counter (OTC) derivatives markets safer; making financial institutions more resilient; ending the problem of financial institutions being too-big-to-fail; and transforming shadow banking into resilient market-based finance.² The financial regulators acknowledged that financial stability is the key objective of these reforms, so they aimed at building a more robust and resilient global financial system. In achieving the financial stability objective, they adopted a system-wide approach, which is based on the key elements of the financial system.³

The evidence shows that reforms since the crisis have boosted the resilience of the financial system by making banks safer, reducing the risk of runs due to maturity transformation.⁴ Significantly, financial regulators have been given new legal powers to effectively monitor and address risks that could emerge outside the regulatory boundary and manage a crisis.⁵

While the post crisis reforms have been designed to fix the abovementioned roots and causes of the GFC, they do not consider emerging regulatory challenges that might threaten the stability of the global financial system and be potential causes of a future financial crisis. This article makes a novel contribution by analysing three potential regulatory challenges to financial stability, namely financial technology (fintech), the UK leaving the European Union (Brexit), and issues arising from emerging market economies (EME). While these emerging challenges have been addressed from different legal, financial and economic aspects, this

¹ See Federal Reserve Bank of Dallas, *Understanding the Risks Inherent in Shadow Banking: A Primer and Practical Lessons Learned* (November 2012) at <<https://www.dallasfed.org/~media/documents/research/staff/staff1203.pdf>> accessed 25 April 2020.

² The G20, 'Global Plan for Recovery and Reform' (2009) <http://www.g20.utoronto.ca/2009/2009communique0402.html> accessed 26 August 2019.

³ Mohammed Alshaleel, *Money Market Funds Reforms in the US and the EU: The Quest for Financial Stability*, 31 EBLR 303 – 335 (2020).

⁴ See, FSB, *Implementation and Effects of the G20 Financial Regulatory Reforms*, 4th Annual Report (2018) <https://www.fsb.org/2018/11/implementation-and-effects-of-the-g20-financial-regulatory-reforms-fourth-annual-report/> accessed 6 September 2019.

⁵ FSB, *Supra* n.4

article uniquely analyses them from a financial stability perspective. Fintech, for example, has been subject to various discussions such as innovations and services offered by fintech start-ups, whether fintech industry should be regulated and the way it should be regulated.⁶ The effects of Brexit on the financial market have been addressed from two different perspectives: effect on the UK and effects on the EU. However, the effects of Brexit on global financial stability have not been analysed in depth.⁷ In addition, the relationship between EME and the financial market are usually discussed by economists and are addressed from the perspective of ensuring *domestic* financial stability on EME markets.⁸ In contrast here we look at the effect of EME on *global* financial stability.

Further when it comes to work on global financial stability, analysts and policy makers have mainly concentrated on addressing the causes of the 2008 crisis; particularly issues related to financial institutions and financial markets.⁹ They have not focussed on newer issues that could in the future represent a challenge to global financial stability. The three issues addressed here do not emerge from financial institutions and financial markets as such; but they nevertheless have the potential to destabilise global finance.

This article argues that what links all three issues (Brexit, fintech and EME) is policy uncertainty: because policy makers are not currently addressing these matters from a global financial perspective there is a risk of gaps in legislation. These gaps can be exploited by (financial) institutions and lead to uncertainty for actors on the international financial market. This uncertainty leads to more volatile markets caused by sudden changes in capital flows which are the result of financial actors taking reactive ad hoc decisions.

This article analyses the arguments as to why these three issues could form a potential threat to global financial stability and builds up the argument as to how these risks are currently

⁶ See for example, Christopher Bradley, *FinTech's Double Edges*, Chi.-Kent L. Rev 61 (2018); Christopher Odinet, *Consumer Bitcredit and Fintech Lending*, 69 Ala. L. Rev. 781 (2018); Charles Mooney, *Fintech and Secured Transactions Systems of the Future*, 81 Law & Contemp. Probs. 1 (2018); and Chris Brummer and Yesha Yadav, *Fintech and the Innovation Trilemma*, 107 Geo. L.J. 235 (2019).

⁷ See for example, Jeremy Cape, *Brexit and Taxes*, 47 Intertax 345 (2019); Christopher McCorkindale, *Brexit and Human Rights*, 22 Edinburgh L. Rev 126 (2018); and Giorgio Sacerdoti and Paulo Mariani, *Brexit and Trade Issues* 11 Eur. J. Legal Stud 187 (2019).

⁸ See for example, Anne Krueger, *The Rise of the Emerging Markets*, 18 Law & Bus. Rev. Am 445 (2012); Claire Hill, *Whole Business Securitization in Emerging Markets*, 12 Duke J. Comp. & Int'l L. 521 (2002); and Ayuli Jemide, *More Appetite for Emerging Markets*, 27 Int'l Fin. L. Rev.70 (2008).

⁹ The G20, *Supra* n.2

underregulated. The article contributes to the literature first by analysing the nature of the stability risks to global finance emanating from Brexit, fintech and EME (e.g.). Second it contributes by examining the commonalities that emerge from these issues to better understand how these should be addressed. Whilst this article does not aim to provide the regulatory solutions that should be implemented it makes a key contribution by identifying these commonalities. The below paragraphs briefly explain why these three issues specifically represent a risk to global financial stability.

Financial technology or fintech indicate technological innovations that influence financial services. Fintech industry has the potential to make substantial changes to the current structure of the financial system and this might have implications for financial stability. The article argues that compared to the exponential growth of fintech, the policy measures are still insufficient. This article investigates the potential risks that fintech could pose to financial stability such as the growth of fintech businesses that offer financial services but fall outside the regulatory boundary, cyber risk and the rise of third-party reliance within the financial system that could cause systemic risk.

Another potential regulatory challenge to financial stability is Brexit. More than three years after the 2016 Referendum it is still not clear what shape the legal relationship of the UK and the EU will be in the future. Given the importance of the UK financial sector on both a European and a global scale, any disruption of the sector could threaten international financial stability. This is because of the imbalance between the financial market in the UK and the other Member States which make it particularly vulnerable to significant changes in the legal framework as well as the policy gaps that are likely to emerge following a hastily negotiated treaty, for instance the loss of passporting rights which will see UK financial institutions treated as third state institutions. This is especially aggravated by the lack of planning and the threat of a chaotic Brexit (which is a risk if the EU and the UK cannot agree on future relations during the transition period.)

Finally, because EME play a more significant role in the global economy due to their growth, threats to financial stability now flow from EME to advanced economies and that could threaten global financial stability. In 2008 the role of EME in the financial market was smaller and therefore they were greatly affected by the financial crisis but the influence of those effects on the global financial market was less significant. Now that EME play a more important role

any major disturbance to their domestic markets are much more likely to affect the international financial market. Such disturbances are more frequent in EME because their domestic policy is often (perceived to be) less stable which creates uncertainty for financial actors, and this leads to a more volatile market.

The analysis of these three issues leads to an understanding of the underlying commonalities. First, these issues are currently not addressed from a global financial stability perspective which leads to legislative gaps. Secondly, in particularly Brexit and EME are subject to a politicised process which means that either issues are not addressed, or they are used as political leverage. This then leads to policy uncertainty which leads to a more unpredictable response from the financial market which causes volatility in capital flows and this in turns affects global financial stability.

The remainder of the article is divided into five parts. First, because this article considers the potential threat of the three emerging regulatory challenges to financial stability, Part 2 lays out the background to the subject and examines the concept of financial stability and the shift from micro-prudential regulations to macro-prudential. It also explains regulatory responses to achieve global financial stability post-the GFC. The purpose of this part is to ensure an understanding of the current international financial market in order to understand why these new regulatory challenges have emerged and why so far these have not been sufficiently acknowledged and addressed in financial regulations. Part 3 discuss the risks that fintech could pose to financial stability, highlighting the regulatory approaches that have been so far emerged as a response to the development of fintech. Part 4 analyses the factors related to Brexit that threaten financial stability, investigating the short-term issues such as the loss of passporting rights and the long-term consequences coming from diverging regulations which are enhanced by the significant role that the UK plays on the global financial market. Part 5 explores the key issues in EMEs that could threaten global financial stability, focusing on abrupt changes in trade policy which is often used as a political tool which leads to volatility on the financial market due to sudden changes in capital flows. Part 6 concludes by summarising key points and identifying the commonalities between these threats.

2. Financial Stability and Macro-Prudential Regulation

In order to understand the potential impact of the three new regulatory challenges on financial stability, this section discusses the concept of financial stability and its importance post the

GFC. It also sheds light on the failure of micro-prudential rules and the move to macro-prudential policy to achieve the financial stability objective before examining the key regulatory responses to achieve global financial stability post the GFC, which are based on macro-prudential approach.

Over a decade has passed since the beginnings of the GFC that resulted in the most severe financial panic in the global financial markets since the Great Depression. It is recognised that financial crises can have devastating effects on the broader economy.¹⁰ The failure of large financial institutions and the crash of financial markets can cause problems in accessing credit, leading to an intense recession. The root causes of the 2008 GFC were summarized by G20 as follows:

During a period of strong global growth, growing capital flows, and prolonged stability earlier this decade, market participants sought higher yields without an adequate appreciation of the risks and failed to exercise proper due diligence. At the same time, weak underwriting standards, unsound risk management practices, increasingly complex and opaque financial products, and consequent excessive leverage combined to create vulnerabilities in the system. Policy makers, regulators and supervisors, in some advanced countries, did not adequately appreciate and address the risks building up in financial markets, keep pace with financial innovation, or take into account the systemic ramifications of domestic regulatory actions.¹¹

Major failures in the financial regulation and supervision were fundamental causes of the crisis. Particularly, the GFC showed many deficiencies in the pre-crisis approach to financial stability regulation.¹² The economic and social costs of the crisis showed that the theory of the self-correcting nature of capital markets is not anymore adequate.¹³ To illustrate, in the self-

¹⁰ See, Robert W. Kolb, *Lessons from the Financial Crisis: Causes, Consequences, and Our Economic Future*, 135 (New Jersey; John Wiley & Sons, 2010).

¹¹ The G20, *G20 Special Leaders Summit on the Financial Situation* Washington DC (2008). Available at <http://www.g20.utoronto.ca/summits/2008washington.html> accessed 16 June 2019.

¹² Hilary Allen, *A New Philosophy for Financial Stability Regulation* 45 *Loy. U. Chi. L. J.* 174-230 (2013).

¹³ Jeffrey Friedman & Wladimir Kraus, *Engineering the Financial Crisis: Systemic Risk and the Failure of Regulation*, 119 (Pennsylvania; University of Pennsylvania Press, 2011).

correction process, the market price either rises or decreases in response to a deficiency or an excess to restore the balance between quantity demanded and quantity supplied.¹⁴ This process works automatically to adjust from disequilibrium to equilibrium without the need for government intervention to regulate the market. This process assumes that market actors are rational, and they act efficiently for the most part. However, the collapse of the financial system in 2008 demonstrated that this assumption is false. As a result, the enhancement of financial regulation was placed as a core position to strengthen financial system and regulatory regimes and to avoid future crises. remarkably, since the GFC, the goal of financial stability has become the dominant idea of any financial reform nationally or internationally.¹⁵ Further, since the stability of the financial system has become a pre-condition to any reform after the GFC, it is essential to define financial stability. In spite of the increased focus on the importance of financial stability issues, there is, as yet, no generally accepted agreement on what financial stability precisely means. Reviewing the financial stability literature, two schools of thought are manifestly discernible. While the first school focusses on defining financial *instability*, the second school's representatives attempt to define financial *stability*.

In the first school of thought, Chant, for example, characterised financial instability as ‘...conditions in financial markets that harm or threaten to harm an economy’s performance through their impact on the working of the financial system’.¹⁶ The definition proposes that financial instability should be evaluated with regard to the potential impact of changes in financial conditions on the real economy. Further, Mishkin suggested that ‘*financial instability occurs when shocks to the financial system interfere with information flow so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities*’.¹⁷ The definition affirms the substantial role of information failures in causing financial instability.

¹⁴ Ismael Hossein-zadeh, *Beyond Mainstream Explanations of the Financial Crisis: Parasitic Finance Capital*, 12 (New York; Routledge, 2014).

¹⁵ Niamh Moloney, *The legacy Effects of the Financial Crisis on Regulatory design in the EU* in *The Regulatory Aftermath of the Global Financial Crisis*, 118 (New York; Cambridge University Press, 2012).

¹⁶ Bank of Canada, *Essays on Financial Stability*, Technical Report No. 95 (2003) available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.172.8150&rep=rep1&type=pdf> accessed 16 June 2019.

¹⁷ Frederic S. Mishkin, *Global Financial Instability: Framework, Events, Issues* 13 *Journal of Economic Perspectives* 3-20 (1999).

In the second school of thought, Schinasi defined financial stability as ‘*A financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events*’.¹⁸ While the definition does not view financial stability as a single or static condition, it stresses that financial stability is a continuum. Further, Crockett stated that financial stability requires ‘*that the key institutions in the financial system are stable, in that there is a high degree of confidence that they continue to meet their contractual obligations without interruption or outside assistance; and that the key markets are stable...*’.¹⁹ The definition focuses only two components of the financial system: financial institutions and markets. However, it does not include the third main element of the financial system which is financial infrastructure.

In 2012, the European Central Bank (ECB) defined financial stability as:

*A condition in which the financial system—comprising of financial intermediaries, markets and market infrastructures—is capable of withstanding shocks and the unraveling of financial imbalances, thereby mitigating the likelihood of disruptions in the financial intermediation process which are severe enough to significantly impair the allocation of savings to profitable investment opportunities.*²⁰

The significance of the ECB definition comes from the fact that it considers financial stability as a broad concept, encompassing the three core components of the financial system: financial institutions, markets and infrastructure. Considering the close interlinkages between all of these components, expectations of disruptions in any of the individual elements can impact the overall stability. To illustrate, disruptions may initially arise and develop in a single institution and subsequently spread to other elements of the financial system. Therefore, the regulatory intervention to attain financial stability should be comprehensive, addressing the three key components. Leaving any gap in these elements will result in the instability of the financial system. This approach is called the macro-prudential approach. In the aftermath of the GFC,

¹⁸ Garry J. Schinasi, *Defining Financial Stability* IMF Working Paper No. WP/04/187, (2004) available at <https://www.imf.org/external/pubs/ft/wp/2004/wp04187.pdf> accessed 16 June 2019.

¹⁹ Andrew D. Crockett, *Why is Financial Stability a Goal of Public Policy?* 6 *Economic Review* 5-22 (1997).

²⁰ European Central Bank, *Financial Stability Review* (2012) available at <https://www.ecb.europa.eu/pub/pdf/other/financialstabilityreview201212en.pdf?f73875a2aa7884337314f4f1c4db5a7d>

there seems to be a consensus among regulators and academics that financial regulation needs to follow the macro-prudential approach.

Prior to the GFC, the presumption that the resilience of individual financial institutions is both an essential and adequate condition to guarantee the resilience of the whole financial system was incorrect because events during the GFC have demonstrated that the resilience of individual institutions is insufficient to avoid instability in the financial system.²¹ Micro-prudential rules failed to consider the influence of individual financial institutions' risk-taking on the broader financial system and economy, and how the interconnectedness of financial institutions could largely spread systemic risks across the financial system.²² For instance, in times when risk is recognised to be high, selling an asset might be seen as a prudent response by an individual financial institution. But if many financial institutions apply this approach, there will be collapse in asset prices, which in turn could lead to huge volatility in asset markets. Therefore, to achieve the financial stability objective, it was necessary to focus on the resilience and robustness of the financial system as a whole. This holistic approach adopted by many financial regulators is called macro-prudential policy. The European Systemic Risk Board (ESRB) states that *'the ultimate objective of the macro-prudential policy is to contribute to the safeguard of the stability of the financial system as a whole, including by strengthening the resilience of the financial system and decreasing the build-up of systemic risks, thereby ensuring the sustainable contribution of the financial sector to economic growth'*.²³ It is significant to mention that macro-prudential policy has become one of the main features of the post-crisis international financial regulatory reform agenda.

Further, macro-prudential policy uses a range of tools to achieve its ultimate objective because applying a single tool is unlikely to be sufficient to address the different sources of systemic risk.²⁴ This can include mandatory capital buffers, liquidity fees, suspension of redemption and

²¹ See, Rainer Masera, *CRR/CRD IV: The Trees and the Forest*, 67 PSL Quarterly Review 381-422(2014).

²² See, Andreas Krause, *Systemic Risk, in Investment Risk Management*, 189 (New York; Oxford University Press, 2015).

²³ European Systemic Risk Board, *Recommendation of The European Systemic Risk Board of 4 April 2013 On Intermediate Objectives And Instruments of Macro-Prudential Policy* (ESRB/2013/1), C 170/1. (2013) Available at https://www.esrb.europa.eu/pub/pdf/recommendations/2013/ESRB_2013_1.en.pdf accessed 16 June 2019.

²⁴ Systemic risk is defined by the OECD as "the risk that the inability of one institution to meet its obligations when due will cause other institutions to be unable to meet their obligations when due. Such a failure may cause significant liquidity or credit problems and, as a result, could threaten the stability of or confidence in markets". OECD, *Glossary Of Statistical Terms* (2004) available at <https://stats.oecd.org/glossary/detail.asp?ID=6796>

stress tests. Stress tests play an important role in assessing the vulnerability of the financial system to adverse shocks.²⁵ Mandatory capital buffers are another important tool that macroprudential authorities can use to address specific vulnerabilities. These require financial institutions, in addition to minimum capital requirements, to maintain higher capital to asset ratios to ensure that they continue to operate in the event of adverse shocks in the financial markets without the need to shrink assets.²⁶

2.1 Regulatory Responses to Achieve Global Financial Stability Post-the Global Financial Crisis

The GFC that began in the US had a direct spill over to the rest of the world financial markets. Immediately in the aftermath of the GFC, political leaders recognised that there were critical deficiencies in the way financial markets and institutions had been regulated.²⁷ In response, in April 2009 in London, the G20 announced a comprehensive global reform agenda to tackle the causes of the crisis.²⁸ The G20 agenda was initially agreed in the 2008 G20 Washington Action Plan and developed in subsequent key summits, including the April 2009 London Summit and the September 2009 Pittsburgh Summit. The reform Agenda aimed at establishing a more robust and resilient global financial system that can promote the real economy in times of stress and diminishing the chance and costs of future financial crises in the most effective way. Further, to achieve financial stability and implement its agenda, the G20, in April 2009, established the Financial Stability Board (FSB) as the successor to the Financial Stability Forum (FSF). The FSB was delegated a variety of tasks including: (1) monitoring and advising on market developments and their implications for regulatory policy; (2) promoting information-sharing among supervisors; (3) supporting contingency planning for cross-border crisis management; (4) identifying and assessing the problems in the global financial system; and (5) collaborating with the International Monetary Fund (IMF) to conduct Early Warning Exercises.²⁹

In addition, the G20 reform programme, coordinated by the FSB, is built on the four pillars of: making financial institutions more resilient; ending the problem of financial institutions being

²⁵ Damodaran Krishnamurti & Yejin Carol Lee, *Macroprudential Policy Framework: A Practice Guide*, 50 (Washington; World Bank Publications, 2014).

²⁶ See, Matthias Haentjens & Pierre Gioia-Carabellese, *European Banking and Financial Law*, 102 (New York; Routledge, 2015).

²⁷ The G20, *Supra* n.2

²⁸ The G20, *Supra* n.2

²⁹ FSB tasks available at <https://www.fsb.org/about/>

too-big-to-fail; making over-the-counter (OTC) derivatives markets safer; and transforming shadow banking into resilient market-based finance. A complete discussion and analysis of these pillars is beyond the scope of this article, but brief discussion of the key elements is necessary to assess whether the global financial system is stable.

A. Making financial institutions more resilient

One of the core elements of the post- crisis reform was making financial institutions more resilient, with higher capital and liquidity requirements and more efficient supervision. Therefore, the central banking and supervisory community, coordinated with the FSB, recognised that reforming banking regulation was essential. At the heart of this pillar is the Basel III initiative to boost the existing regulatory framework for internationally active banks, by increasing the quantity and quality of bank capital.³⁰ The crisis demonstrated that previously permitted capital levels were inadequate given the maturity transformational nature of banking.³¹ In December 2010, the Basel Committee on Banking Supervision (BCBS) released Basel III. In December 2017, BCBS finalized Basel III, after agreeing on rules that restrict the potential for unwarranted variability of internal model-based risk weights across countries so the capital ratios might be applied more equally across jurisdictions. For instance, Basel III also introduced two elements of liquidity regulation: the liquidity coverage ratio and the net stable funding ratio.³² While the liquidity coverage ratio aims at promoting the short-term resilience of the liquidity risk profile of banks, the main aim of the net stable funding ratio is to reduce funding risk over a longer time.³³ Another important initiative to make financial institutions more resilient is the International Association of Insurance Supervisors (IAIS) lead to develop a global risk-based Insurance Capital Standard (ICS) for internationally active insurance groups and strengthening supervisory effectiveness, through its ComFrame project.³⁴

B. Ending too-big-to-fail

³⁰ FSB, *Supra* n.4.

³¹ The term *maturity transformation* refers to the difference in the residual contractual maturity between assets and liabilities.

³² Basel Committee on Banking Supervision, *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools* (2013). Available at www.bis.org/publ/bcbs238.htm accessed 16 June 2019.

³³ Basel Committee on Banking Supervision, *Progress Report on Implementation of the Basel Regulatory Framework* (2013). Available at <http://www.bis.org/publ/bcbs247.pdf> accessed 16 June 2019.

³⁴ See, Georges Ugeux, *International Finance Regulation: The Quest for Financial Stability*, 65 (New Jersey; John Wiley & Sons, 2014).

The phrase “too big to fail” indicates the threat to the real economy of a tragic failure of a financial institution. The GFC showed that national authorities were not able to deal with the failures of large cross-border financial institutions safely and without recourse to public funds. For instance, the failure of Lehman Brothers was bailed out using public funds.³⁵ As a result, in 2011, the G20 endorsed a set of policy rules to address the risks to the global financial system from systemically important financial institutions (SIFIs), with a specific focus on global SIFIs (G-SIFIs)³⁶ to manifest the greater risks that these institutions pose to the global financial system.³⁷ In November 2018 the FSB published an updated list of global systemically important banks (G-SIBs) using an assessment methodology designed by BCBS.³⁸

C. Making derivatives markets safer

The OTC derivatives markets is one of the most internationally active markets, allowing the transmission of risks across markets, institutions, and cross-borders. Prior to the GFC, deficiencies in OTC derivatives markets contributed to the increase in systemic risk and the damage caused by the crisis.³⁹ As a consequence, improvements to OTC derivatives markets are a key pillar of the G20 reform agenda. These improvements aim at mitigating systemic risk, reducing market abuse and increasing transparency. The reforms, for example, include trade reporting, exchange or platform trading of standardised contracts, central clearing of all standardised OTC derivatives contracts, and margining standards and higher capital requirements for non-centrally cleared contracts. The majority of FSB jurisdictions- which cover more than 90% of OTC derivative transactions- now have in force frameworks for determining when standardised OTC derivatives should be centrally cleared.⁴⁰

D. Transforming shadow banking into resilient market-based finance

³⁵ See, Eric. Posner, *Last Resort: The Financial Crisis and the Future of Bailouts*, 35 (Chicago; University of Chicago Press, 2018).

³⁶ A systemically important financial institution or systemically important bank is a bank, insurance company, or other financial institution whose failure might trigger a financial crisis.

³⁷ See, FSB, *Global Systemically Important Financial Institutions (G-SIFIs)*, (2019). Available at <https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/> accessed 16 June 2019.

³⁸ FSB, 2017 list of global systemically important banks (G-SIBs), (2018). Available at <https://www.fsb.org/2018/11/2018-list-of-global-systemically-important-banks-g-sibs/> accessed 16 June 2019.

³⁹ FSB, *Supra* n.4

⁴⁰ See, FSB, *OTC Derivatives Market Reforms: Twelfth Progress Report on Implementation*, (2017). Available at <https://www.fsb.org/2017/06/otc-derivatives-market-reforms-twelfth-progress-report-on-implementation/> accessed 16 June 2019.

The GFC revealed many systemic problems arising from so called shadow banking activities. In 2012, the FSB defined shadow banking as “credit intermediation involving entities and activities (fully or partially) outside the regular banking system”.⁴¹ Unlike traditional banks, shadow banks are outside the scope of traditional banking regulation. The shock caused by the exploding of the housing bubble and sub-prime mortgage crisis caused a run on the shadow banking system. However, shadow banks did not have the traditional deposit insurance to protect them from this run.⁴² In 2011, the FSB announced a comprehensive framework – the Shadow Banking Roadmap – to strengthen regulation and oversight of shadow banking, including strengthening money market funds, improving securities financing markets, reducing interconnectedness between banking and nonbank sectors and improving securitization markets. The most significant achievement in the area of shadow banking is the new set of rules governing money market funds (MMFs). In the US, on July 23, 2014, the Securities and Exchange Commission (SEC) adopted a substantial reform to the regulatory framework governing MMFs.⁴³ The reform came into force on October 2016. The main components of the reform are the introduction of the floating net assets value (FNAV), and the liquidity fees and redemption gates. In the EU, the new European MMFs regulation was published in the EU Official Journal on 30 June 2017 and came into force on 21 July 2017.⁴⁴ The EU reform follows the US reform in adoption of liquidity fees and redemption gate; however, the distinctive attribute of this reform is the introduction of Low Volatility NAV (LVNAV) MMFs. Further, In January 2017 the FSB finalised its recommendations to address structural vulnerabilities and reduce liquidity mismatches associated with asset management.⁴⁵

Remarks on the post-crisis reforms

The foregoing discussion demonstrates that the post GFC reforms have made significant progress. They have principally addressed the fault lines that caused the crisis. Banks are considerably better capitalised, more liquid and less leveraged. Reforms to the OTC derivatives

⁴¹ See, FSB, *Strengthening Oversight and Regulation of Shadow Banking*, (2013). Available at https://www.fsb.org/wp-content/uploads/r_130829b.pdf accessed 16 June 2019.

⁴² See, IMF, *Shadow Banking and Market Based Finance* (2017). Available at <https://www.imf.org/en/News/Articles/2017/09/13/sp091417-shadow-banking-and-market-based-finance> accessed 25 April 2020.

⁴³ See, SEC, *SEC Adopts Money Market Fund Reform Rules* (2014) available at <https://www.sec.gov/news/press-release/2014-143>

⁴⁴ See, Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds [2017] OJ L 169/8.

⁴⁵ Available at <https://www.fsb.org/2017/01/policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/> accessed 16 June 2019.

markets have created a more transparent and robust system, and implementation of too-big-to-fail (TBTF) reforms is advancing. The elements of shadow banking that contributed to the financial crisis have declined significantly. In general, the financial system is more resilient and diversified. However, it is significant to highlight two key points. First, while the benefits from the post-crisis banking regulatory framework are obvious, extensive regulations have had a key impact on the shrinkage of bank's profitability. Since the global financial crisis, bank profitability has declined across countries.⁴⁶ At least partially, this reflects lower leverage created by the regulatory reforms. Further, International bank lending has dropped since the crisis and its business structure has shifted from cross-border towards more stable regionally-funded lending.⁴⁷ Secondly, the post GFC framework focuses on established business models that caused the GFC whether in conventional or shadow banking and was, therefore, unprepared for disruption by explosion in the application of different technologies in financial services by both regulated and unregulated fintech businesses offering niche financial products.

3. Fintech and Financial Stability

This section examines the exponential growth of fintech and the potential benefits of fintech for the financial system. However, it then goes on to provide original analysis as to specific risks posed by fintech that might threaten the global financial stability: namely unregulated fintech businesses, cyber risk and the rise of third-party reliance within the financial system that could cause systemic risk. It also discusses the regulatory responses to fintech and how these responses are still insufficient given the rapid growth of the fintech sector.

What is Fintech?

Financial technology or fintech refers to technological innovations that affect financial services. The term "fintech" has become widely used within the past few years. The potential of reducing costs, increasing efficiency, improving access to financial services makes fintech so attractive.⁴⁸ There is no industry-wide consensus about the definition of fintech. Nonetheless, the FSB's definition for fintech is very useful in light of the development of the fintech industry. The FSB defines fintech as '*technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated*

⁴⁶ Bank for International Settlements, *Structural changes in banking after the crisis*, (2018) CGFS Papers No 60 available at <https://www.bis.org/publ/cgfs60.htm> accessed 24 February 2020.

⁴⁷ Bank for International Settlements, *Supra* n.46.

⁴⁸ See, Pranay Gupta & T. Mandy Tham, *Fintech: The New DNA of Financial Services*, 39 (Berlin; Walter de Gruyter GmbH & Co KG, 2018).

material effect on financial markets and institutions and the provision of financial services'.⁴⁹ Further, the fintech industry encompasses a variety of tech-fuelled innovations. Many of these innovations tend to be start-ups that usually focus on applying a specific technology to promote or transform a particular process or financial service. Examples include smart contracts, robo-advice, distributed ledger technology, big data applications and peer-to-peer (P2P) lending. Generally, the fintech sector can be categorized into five broad areas: (1) payments; (2) financing (lending/crowdfunding); (3) asset management services; (4) insurance; and (5) other fintechs such as security, and data and analytics.⁵⁰ Robo-advisors, for example, are automated interfaces that provide investment advice and investment management services without any human intervention by using algorithms and asset allocation models which are advertised as being tailored to each individual's investment needs.⁵¹ Because human intervention is eliminated, robo-advisors services are substantially cheaper than those of traditional management companies.

Fintech has grown rapidly in recent years. A KPMG report shows that, in 2018, global venture investment in fintech companies reached \$111.8 billion across 2,196 deals, up from \$50.80 billion in 2017 and \$ 25 billion in 2016.⁵² This rapid growth is driven by different factors such as technological advances, higher customer expectations for cost, convenience and speed, and the substantial changes in the financial regulations post the GFC.⁵³ This exponential growth raises an important question about the impact of fintech on financial stability. It might be argued that fintech sector is still too small relative to the overall financial system to present a compelling risk to financial stability. However, the industry's fast-paced development means that financial regulators should consider this sector in their financial stability risk assessment to guard against future risks. In order to identify the potential implications of fintech for financial stability, it is necessary to assess fintech's potential benefits and risks. Fintech holds great promise for the financial system because it has the potential to transform the financial system across a great variety of products and services. This variety in the financial services can

⁴⁹ See, FSB, *Financial Stability Implications from FinTech, Supervisory and Regulatory Issues that Merit Authorities' Attention* (2017) available at <https://www.fsb.org/wp-content/uploads/R270617.pdf>

⁵⁰ FSB, *Supra* n.49.

⁵¹ Ihy Chiu, *Fintech and Disruptive Business Models in Financial Products, Intermediation, and Market-Policy Implications for Financial Regulators*, 21 J. TECH. L. & POL'Y 55-112 (2016).

⁵² KPMG, *The Pulse of Fintech 2018* (2018). Available at <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf> accessed 26 June 2019.

⁵³ See, Gregor Dorfleitner, Lars Hornuf, Matthias Schmitt & Martina Weber, *FinTech in Germany*, 1 (Berlin; Springer, 2017).

create a more efficient and resilient financial system. Applying productivity enhancing technologies, such as robo-advice, could enhance business models of incumbent financial institutions.⁵⁴ Adoption of machine learning and artificial intelligence (AI) could also promote improvements in decision-making processes, by enhancing the models that financial institutions and investors use. Fintech has also the potential to support growth by enabling more individuals to access financial services. For instance, robo-advisory services have the potential to increase access to wealth management for households who could not obtain similar traditional asset management services due to different reasons such as high fees paid to professional management.⁵⁵

At the same time, it is undeniable that the development of fintech outside the boundaries of the supervisory and regulatory framework can pose risks to financial stability. Fintech businesses that offer financial services but fall outside the regulatory boundary or are subject to minimum regulatory standards may not be subject to the same level of monitoring of their governance to which regulated financial institutions are subject.⁵⁶ The growth of these businesses could become a risk to the financial system. Fintech businesses could develop risky investment practices to generate more profits and if these practices are not subject to risk management regulations, they might pose serious risk to financial stability.

Another important risk that fintech can pose to financial stability is cyber risk. When the systems of different institutions are connected to each other and there is a weak link, the vulnerability of financial activities to cyber-attacks is likely to be higher.⁵⁷ Reliance of fintech firms on technology could also increase numbers and the range of entry points into the financial system, which hackers could attack. The case of Dwolla in the US is a clear example of the cyber risk. Dwolla is a fintech start up that offered payment and money transfer solutions. Dwolla confirmed to its customers that their personal data will be safe and secure. Nonetheless, because its cybersecurity system was outdated, the firm faced a cyberattack that put their customers' data privacy in danger. Therefore, the US Consumer Financial Protection Bureau (CFPB) undertook a "data security enforcement action" against Dwolla, which then led to

⁵⁴ For further information about robo-advice see, Paolo Sironi, *FinTech Innovation: From Robo-Advisors to Goal Based Investing and Gamification*, 51 (Chichester, John Wiley & Sons, 2016).

⁵⁵ Sironi, *Supra* n.45, 50.

⁵⁶ FSB, *Supra* n.49.

⁵⁷ See, Douglas Arner, Janos Nathan Barberis & Ross Buckley, *FinTech, RegTech, and the Reconceptualization of Financial Regulation* 37 *Nw. J. Int'l L. & Bus.* 371-414 (2017).

Dwolla being fined with \$100 thousand.⁵⁸ It is significant to know that from 2013 to 2018 cyber-attacks on Fintech firms resulted in at least \$1,450 Million in losses due to fraud.⁵⁹ While most jurisdictions address cyber-resilience through the lens of IT and general operational risk, there is typically a lack of explicit references to cybersecurity risk. A survey by the International Monetary Fund (IMF) shows that although awareness of cybersecurity risks is generally high and most countries have frameworks in place to protect the resilience of the financial system, gaps in mapping cyber risks are common, particularly among emerging markets and developing economies (EMDE).⁶⁰ Further, another survey conducted by the European Banking Authority (EBA) on supervisory practices around cybersecurity in the EU financial sector demonstrates that there are many differences in the process of testing of regulated entities' vulnerability and resilience to cyber risk and the cross-border cooperation with regards to such testing.⁶¹

Further, some activities offered by fintech firms could increase third-party reliance within the financial system. Third-party service providers to financial institutions are rapidly becoming more important and vital, especially in the areas of cloud computing and data services. Cloud computing services, for example, could be provided by a small number of parties. Robo-advice, for instance, may rely on a set of third-party data providers that might be extremely concentrated.⁶² Disruptions to these third-party services, maybe due to operational issues, are more likely to pose systemic risks, which in turn could destabilise the financial system. To illustrate, systemic risk is best characterized by connectedness. When financial institutions become more connected, the systemic risk increases. The more points of connectedness between financial institutions there are, the more points of vulnerability to the financial system.

⁵⁸ Consumer Financial Protection Bureau, *Administrative Proceeding*, (2016). Available at https://files.consumerfinance.gov/f/201603_cfpb_consent-order-dwolla-inc.pdf.

⁵⁹ IMF Working Paper, *Cyber Risk for the Financial Sector: A Framework for Quantitative Assessment*, (2018) available at <https://www.imf.org/en/Publications/WP/Issues/2018/06/22/Cyber-Risk-for-the-Financial-Sector-A-Framework-for-Quantitative-Assessment-45924> accessed 25 April 2020.

⁶⁰ International Monetary Fund and World Bank Group, *Fintech: The Experience So Far*, (2019) available at <https://www.imf.org/en/Publications/Policy-Papers/Issues/2019/06/27/Fintech-The-Experience-So-Far-47056> accessed 25 February 2020.

⁶¹ The European Supervisory Authorities, *Joint Advice on the Costs and Benefits of a Coherent Cyber Resilience Testing Framework for Significant Market Participants and Infrastructures*, (2019) available at [https://eba.europa.eu/sites/default/documents/files/documents/10180/2551996/d229589f-a855-45f2-ad5a-411792792e60/JC%202019%2025%20\(Joint%20ESAs%20Advice%20on%20a%20coherent%20cyber%20resilience%20testing%20framework\).pdf](https://eba.europa.eu/sites/default/documents/files/documents/10180/2551996/d229589f-a855-45f2-ad5a-411792792e60/JC%202019%2025%20(Joint%20ESAs%20Advice%20on%20a%20coherent%20cyber%20resilience%20testing%20framework).pdf) accessed 26 February 2020.

⁶² Sironi, *Supra* n.54, at 51.

Therefore, the failure of a cloud provider could be disastrous to the financial system and the economy.

The foregoing discussion about the benefits and risks of fintech raises a question about how fintech industry should be regulated to mitigate the financial stability risks. In order to answer this question, it is important to discuss how fintech fits within existing regulatory frameworks. As discussed earlier, the financial regulatory reforms enacted since the GFC has focused on traditional financial institutions. Particularly, they have been premised on addressing the roots of the crisis caused by the traditional financial institutions. Taking into consideration the fact that majority of the fintech firms are not regarded as traditional financial institutions, the reforms have failed to consider the rise of fintech and its potential to alter financial service attributes and market structure. This implies that, generally, the current regulatory frameworks concerning financial institutions' operations and activities do not apply to all fintech firms' activities and that may exert a negative effect on the stability of the entire financial system.

For instance, a recent survey by the European Securities and Markets Authority (ESMA) shows that the main area where regulatory gaps and issues have been identified by National Competent Authorities (NCAs) and where fintech firms do not fit neatly within the existing rules is related to crypto-assets, Initial Coin Offering (ICOs)⁶³ and Distributed Ledger Technology (DLTs).⁶⁴ In these areas, many NCAs have asked for clarification of EU regulatory requirements. NCAs, for instance, claim that there is a lack of clarity in relation to the definition of financial instruments and the legal nature of crypto assets.

Another important survey by IMF and World Bank Group (WBG) reviewing fintech developments across the membership finds that nearly two-thirds of the countries responding to the survey identified gaps in which fintech issues are not adequately addressed by their current legal frameworks, especially the legal framework for financial sector related to peer-to-peer lending, crypto-assets, robo-advisory services, mobile money, algorithmic trading, and lending activities using AI.⁶⁵

⁶³ An Initial Coin Offering is a method of raising funds using cryptocurrencies. It is often a form of crowdfunding

⁶⁴ The European Securities and Markets Authority, *Report on the Licensing of FinTech Business Models*, (2019) available at https://www.esma.europa.eu/sites/default/files/library/esma50-164-2430_licensing_of_fintech.pdf accessed 25 February 2020.

⁶⁵ International Monetary Fund and World Bank Group, *Supra* n.60.

It is also significant to emphasise that traditional regulatory frameworks and regulatory institutions might be too slow and inflexible to properly regulate fintech. A careful balance, therefore, needs to be struck between enabling fintech and addressing challenges to financial stability. This balance is necessary not only to preserve financial stability but also to avoid stalling the development of fintech.

Three regulatory approaches have so far emerged as a response to the development of fintech. The first approach is “wait and see” or doing nothing and this approach could be characterised as a laissez-faire approach.⁶⁶ While adopting this lenient regulatory approach may be beneficial for the development of fintech, it entails different risks. Since reforming financial regulations after the GFC, traditional financial institutions work under strict regulatory requirements and a ‘wait and see approach’ for fintech would give fintech firms an unfair competitive advantage. This regulatory approach may also drive financial intermediation into a sector where financial regulators only have limited influence. The second regulatory approach is a formal approach, where financial regulators reform the existing regulations or enact new regulations in order to provide a more proper and effective framework for new fintech firms and new activities.⁶⁷ For instance, Mexico enacted Fintech Law in 2018 to promote financial inclusivity and technological innovation. In the EU, the Payment Services Directive (PSD2), which entered into application on 13 January 2018, facilitates innovative financial technology companies, competition and efficiency. The PSD2 sets the rules on what type of organisations can provide payment services within the European Economic Area (EEA).⁶⁸

The third approach is the experimentalist approach, which involves introducing innovation facilitators such as accelerators, innovation hubs and regulatory sandboxes.⁶⁹ Accelerators aim at supporting particular tasks of policy relevance with funding support.⁷⁰ An innovation hub is a platform established by the regulatory authority where the developers of fintech start-ups

⁶⁶ See, Douglas Arner, Janos Nathan Barberis, Dirk A. Zetzsche & Ross Buckey, *FinTech and RegTech: Enabling Innovation While Preserving Financial Stability*, 18 *Geo. J. Int'l Aff.* 47-58 (2017).

⁶⁷ See, European Securities and Markets Authority, *Financial Technology: ESMA's Approach*, 4th Luxembourg FinTech Conference (2018). Available at https://www.esma.europa.eu/sites/default/files/library/esma71-99-1051_speech_on_cryptoassets_-_pa.pdf accessed 8 July 2019.

⁶⁸ Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366> accessed 8 July 2019.

⁶⁹ See, FSB, *Regulatory and Supervisory Issues from FinTech*, (2017) available at <https://www.fsb.org/wp-content/uploads/Cambridge-Centre-for-Alternative-Finance-Regulatory-and-Supervisory-Issues-from-FinTech.pdf> accessed 9 July 2019.

⁷⁰ Gupta and Tham *Supra* n.48, at 27.

receive guidance from the regulator and, sometimes, from each other. The main function of innovation hub is to promote innovations and to provide advice to newly established firms for a fixed period.⁷¹ In Australia, for example, an Innovation Hub was introduced in 2015, with the aim of making it easier for the creators of fintech innovations to understand the regulatory framework of financial intermediation.⁷² A sandbox creates a testing environment or safe place for fintech innovations to test products with less risk of being punished by the regulator. The main aim of sandbox is to remove unnecessary regulatory barriers to innovations by allowing them to test their financial product or business model for a predetermined period on real consumers.⁷³ In the UK, the Financial Conduct Authority (FCA) first introduced the sandbox concept through an initiative called "Project Innovate". The Project Innovate aimed at allowing fintech firms to introduce their innovative services, products, and business models to the financial market, without subjecting them to the full set of regulatory restrictions imposed by the FCA.⁷⁴ The FCA also minimized costs and administrative barriers to fintech firms and new entrants. In order to ensure the success of the project, the FCA established "sandbox unit" to deal with sandbox applications and supervise the testing process by the fintech companies. Inspired by the success of the FCA's sandbox in the UK, many other countries around the world, such as, Canada, Thailand, Australia, Malaysia, Bahrain, UAE, US, Hong Kong, and Singapore, have developed similar forms of a regulatory sandbox.⁷⁵

Further, while some jurisdictions have taken or plan to take policy measures on fintech, the scope and scale of changes or planned changes vary substantially. Generally, these measures are still insufficient given the rapid growth of the fintech sector and its potential threat to global financial stability and most of these measures do not take into account the fact that majority of the fintech companies are not regarded as traditional financial institutions. This can be attributed to the lack of the regulators knowledge about Fintech industry. It is also necessary to emphasise the fact that the majority of the countries adopt "do nothing" approach to the development of fintech either intentionally or otherwise.⁷⁶ Even in the countries that have taken

⁷¹ Magyar Nemzeti Bank, *Innovation and Stability Overview of Fintech in Hungary*, consultation document (2017) available at <https://www.mnb.hu/letoltes/consultation-document.pdf> accessed 8 July 2019.

⁷² Australian Securities and Investments Commission, 'ASIC's Innovation Hub and our approach to regulatory technology' (2017) available at <https://download.asic.gov.au/media/4270022/rep523-published-26-may-2017.pdf> accessed 8 July 2019.

⁷³ See, Christopher G. Bradley, *FinTech's Double Edges*, 93 Chi.-Kent L. Rev. 61-95 (2018).

⁷⁴ For further information see, FCA, *Regulatory sandbox*, (2019) available at <https://www.fca.org.uk/firms/regulatory-sandbox> accessed 8 July 2019.

⁷⁵ Magyar Nemzeti Bank, *Supra* n. 71.

⁷⁶ European Securities and Markets Authority, *Supra* n.67.

important steps in regulating fintech, there are still some regulatory gaps that should be addressed. The EU, for example, has introduced two key regulations in the form of the General Data Privacy Regulation (GDPR) and PSD2, both of which came into force in 2018. While the GDPR aims at protecting individual privacy by regulating the processing and transfer of personal data, the PSD2 compels banks to give third-party providers access to customers' bank accounts, if requested by the customer. This would foster competition and innovation in financial services. Nonetheless, as mentioned above, certain fintech services and products offered in the EU such as crypto- assets, ICOs and DLTs are still not regulated.

Since the fintech growth presents a global challenge in financial regulation, a dynamic, proactive, and responsive regulatory response might be supported by close international cooperation. Because financial regulators in most of the countries do not currently necessarily have appropriately experience to develop effective and comprehensive regulation in the fintech sector, international cooperation led by international bodies- especially FSB- is crucial for the development of fintech regulation and ensuring the global financial stability. On June 27, 2017, the FSB published a report that examines the potential impacts of fintech on financial stability.⁷⁷ The report concluded that given the small size of fintech sector, there were no compelling financial stability risks from emerging fintech innovations. On February 14, 2019, the FSB published another report about fintech developments and potential financial stability implications.⁷⁸ Although the FSB's report demonstrates the same findings of the 2017 report, it suggests that fintech has the potential to change the current structure of the financial system and as a result it may have implications for financial stability. However, experience shows that risks can emerge quickly if left unchecked. The role of unregulated shadow banking sector during the GFC in amplifying the crisis is a clear evidence of how risks can evolve very quickly. Therefore, the FSB approach should be proactive rather than reactive to mitigate the potential risks that fintech could have on financial stability.

Further, given the lack of precise data and information about fintech and the small size of the industry, financial stability has never been cited as an objective for recent regulatory measures or reforms around fintech. Other than the financial stability, which is the main perspective of analysing the implications of fintech in this article, relevant lenses for policymakers and

⁷⁷ See, FSB, *Supra* n.49.

⁷⁸ FSB, *FinTech and market structure in financial services: Market developments and potential financial stability implications*, (2019) available at <https://www.fsb.org/wp-content/uploads/P140219.pdf> accessed 8 July 2019.

academics such as: (1) market integrity; (2) consumer and investor protection; (3) financial inclusion; and (4) competition are at the fore. However, it is important to emphasise that the article does not undermine the significance of these regulatory lenses, but rather it goes beyond these concerns to demonstrate the significance of the financial stability when considering the implications of the fintech industry. In fact, there might be overlaps and trade-offs between those regulatory lenses and financial stability concern. Therefore, a careful balance needs to be struck between financial stability and other policy concerns.

In sum, as explained above, fintech innovations bear various features of systemic risk, and the level of such risk is more likely to increase as the size of the fintech activities grows, although there is no clear evidence of such an effect at present. The post GFC reform of the financial industry has focused on different sectors of the market and has largely ignored the unique risks and problems associated with fintech. As a consequence, financial regulators have neither the tools nor the expertise necessary to deal with fintech risks and challenges to financial stability.

4. Brexit and Financial Stability

This section analyses the potential effects of Brexit on global financial stability. Its main conclusion is that the continuing uncertainty is potentially disruptive for global financial stability as it does not leave institutions the time to properly prepare for changes in regulation. Furthermore, there is a risk that the UK will either leave with no treaty after the transition period or with a hastily agreed treaty that leaves significant issues to be decided in the future. This will lead to several challenges with regards to global financial stability, which are analysed in this section.

This section discusses first the important position of the UK on the global financial market. It then analyses the loss of passporting rights which is an issue of immediate concern as this will immediately affect financial firms and limit their operations. The third issue this section analyses is the long-term effects of a diverging legislative framework between the UK and the EU. The fourth part looks at several auxiliary issues which are likely to have an impact such as financial firms moving to other Member States and the position of the UK as a clearing house for euros. The concluding part analyses the importance that the agreement on the financial framework continues to champion harmonised legislation.

Overall, it points to the political uncertainties that dominate Brexit and which could influence international financial stability due partly to sudden changes in capital flow in the short term and divergent regulations between the EU Member States and the UK in the long term. It is argued below that these issues are closely connected with the overarching issue of policy uncertainty which represents a risk for global financial stability. Global legal harmonisation can counter policy uncertainty as it would limit the effect that Brexit has on the international financial market. This is of course a long-term solution and in the short-term governments might need to implement domestic legislation to counter the effects of Brexit on domestic financial stability.

4.1 The Key Position of the UK Financial Sector

The UK financial sector is one of the most internationally intertwined and globally competitive. It represents nearly one fifth of the global banking sector.⁷⁹ The banking sector is the most Europeanised and internationalised of the EU Member States⁸⁰ and it is the largest financial sector in the EU⁸¹ and the largest financial exporter in the world.⁸² Assets held by the banking sector were nearly 450% of UK GDP in 2013.⁸³ The sector is heavily international with about half of those assets held by foreign banks.⁸⁴ Half of the assets of the banking sector consist of loans to non-banks which highlights the important role the UK banking sector plays in intermediating global capital.⁸⁵ EU banks have concentrated most of their wholesale activities in the UK.⁸⁶ The financial sector in the UK is thus significant on both a European and a global scale and any disruption to the sector threatens international financial stability. Furthermore, the overrepresentation of the financial sector in the UK economy in comparison to the rest of the EU means that in the other EU Member States the financial sector is underrepresented compared to the size of the economy. This has caused a reliance in these states on larger banks for investments and this makes their financial stability more dependent upon a smaller number

⁷⁹ Jakob Miethe & David Pothier, *Brexit: What's at Stake for the Financial Sector?* 6 DIW Economic Bulletin, 364,364 (2016).

⁸⁰ David Howarth & Lucia Quaglia, *Brexit and the Single European Financial Market*, 55 J. Common Mark. Stud. 149, 155 n.1 (2017).

⁸¹ Howarth, *Supra* n.80 at 152.

⁸² David Howarth & Lucia Quaglia *Brexit and the battle for financial services*, 25 J. Eur. Public Policy, 1118, 1118 n.8 (2018)

⁸³ Miethe, *Supra* n.79, at 364.

⁸⁴ Miethe, *Supra* n.79, at 367.

⁸⁵ Miethe, *Supra* n.79, at 369.

⁸⁶ John Springford & Philip Whyte, *the Consequences of Brexit for the City of London*, Centre for European Reform (2014)

<https://www.cer.eu/publications/archive/policy-brief/2014/consequences-brexit-city-london>

of large financial institutions.⁸⁷ Thus financial risks are concentrated in a limited number of players which makes the market more vulnerable should there be any (potential) bankruptcy of one of these institutions.

The above means that Brexit is likely to disrupt the financial stability in both the UK and the other EU Member States, which in turn could pose a threat to global financial stability. This is especially aggravated by the lack of clarity. Over three years after the referendum a transition deal was concluded for one year, ending on the 1st of January 2021. There currently is no deal for beyond that date and negotiations are ongoing. Serious doubts have been raised on whether it is possible to conclude a trade agreement in this period.⁸⁸ The European Commission President has warned that one year will not be enough to conclude an agreement on every area and any special arrangements for the financial sector will have to wait until beyond 2020.⁸⁹ Both the IMF and the World Bank have identified the no-deal scenario as a threat to financial stability as the uncertainty could lead to risk aversion which will affect capital flows in the market.⁹⁰ This would lead to political tensions, trade disruptions, volatile currencies, and damage investors' confidence.⁹¹ Until a trade agreement is concluded the relationship between the UK and the EU will be characterised by policy uncertainty. It is precisely this uncertainty that the IMF warns about as it makes the market more volatile.

4.2 Loss of Passporting Rights

The key immediate concern for the financial market following Brexit would be the loss of passporting rights. The effect of this will be felt immediately and is therefore the first issue of

⁸⁷ John Armour, *Brexit and financial services*, 33 Oxf. Rev. Econ. Policy 54, 56 n1 (2017)

⁸⁸ See for instance: Jennifer Rankin, *Get Brexit Done? The reality will be far more difficult and tortuous*, The Guardian, (25 November 2019).

<https://www.theguardian.com/politics/2019/nov/25/get-brexit-done-reality-far-more-difficult-tortuous-european-union>

Stephen Bush, *How limiting EU trade deal negotiations to one year may cause problems for Boris Johnson* New Statesman (17 December 2019).

<https://www.newstatesman.com/politics/brexit/2019/12/how-limiting-eu-trade-deal-negotiations-one-year-may-cause-problems-boris>

⁸⁹ Kate Proctor, Peter Walker and Daniel Boffey, *Brexit: Boris Johnson will amend bill to outlaw extension*, The Guardian, (17 December 2019)

<https://www.theguardian.com/politics/2019/dec/16/boris-johnson-will-amend-brexit-bill-to-outlaw-extension>

⁹⁰ IMF, *Global Financial Stability Report: Vulnerabilities in a Maturing Credit Cycle*, April 2019, XI

Available online at: <https://www.imf.org/en/Publications/GFSR/Issues/2019/03/27/Global-Financial-Stability-Report-April-2019>

⁹¹ IMF, *Supra* n.90, at 10

major concern for financial stability. A passport is a licence for a financial institution to conduct business in any other Member State without need for further regulations.⁹² Around 5,500 UK firms rely on these passporting rights. Through passporting UK firms can access the Single Market. These require for the Member States to ensure application of the EU ‘single rulebook.’ Passporting rights are especially important for the wholesale financial market which covers derivatives, foreign exchange trading, private and public bond trading, equity trading, and commodities trading.⁹³ The EU can grant regulatory equivalence which would allow UK financial firms to continue to operate in the same way. The Financial Stability Board (FSB) has promoted global regulatory equivalence as a tool to achieve financial stability.⁹⁴ This process is not automatic; it takes time and is often politicised. This raises uncertainty for UK financial firms as they cannot yet anticipate when and how regulatory equivalence will be agreed.

Passporting rights would not be carried over following Brexit. Only if the UK remains in the Single Market would passporting rights be maintained. Passporting rights are important for the UK financial sector but loss of these will also affect the global financial market. For instance, the EU investment fund, “*Undertakings for the Collective Investment in Transferable Securities*” (UCITS), which is worth around 8,000 billion euros is managed from the UK and half of the world’s financial firms have based their EU headquarters in the UK.⁹⁵

Third country institutions must apply for admission in each Member State and are subject to both the legislation of their home state and the host state.⁹⁶ This is costly and burdensome. There are some exceptions to this rule in the form of regulatory equivalence. Regulatory equivalence would give UK financial firms some access to the Single Market. The rights are not as extensive as passporting rights and do not affect all financial services. For instance, the scope for retail and commercial banking and primary insurers is limited.⁹⁷ It is therefore not a perfect solution and it will leave uncertainty unless these services are covered in additional agreements between the UK and the EU.

⁹² Based on two EU Directives: Capital Requirements Directive (CRD; 2013/36/EU) and the Markets in Financial Instruments Directive (MiFID; 2004/39/EC).

⁹³ Dirk Schoemaker, *The UK Financial Sector and EU Integration after Brexit: The Issue of Passporting 9* (N (2016) (Nauro Campos & Fabrizio Coricelli ed., Palgrave Macmillian 2016).

⁹⁴ Matthias Lehmann & Dirk Zetzsche, *How Does it Feel to be a Third Country? The Consequences of Brexit for Financial Market Law, Brexit: the International Legal Implications*, Paper No.14 Brexit: The International Legal Implications 5-6 (2018).

⁹⁵ Michael McMahon, *The implications of Brexit for the City 80* The CAGE Background Briefing Series 2 (2017).

⁹⁶ Lehmann, *Supra* n.94, at4.

⁹⁷ Armour, *Supra* n.87, at 65.

The decision on whether to grant regulatory equivalence is taken by the EC. The EC has the right to withdraw equivalence at a short notice (30 days) if regulations diverge too much. The interpretation of 'too much' lies with the EC and is a political decision. As financial legislation is currently aligned the main issue for the UK will be that regulatory equivalence can easily be used as a political negotiation tool as happened for instance when Switzerland did not receive clearing system equivalence when it restricted the free movement of EU workers.⁹⁸ The EC takes into account the wider circumstances, including policy concerns when making a decision on granting equivalence.⁹⁹ This means that it is not only whether a third state meets the legislative criteria but also whether this decision promotes the coherence and integrity of the Single Market. Given that this is a political decision no legal appeal against the decision is possible.¹⁰⁰

The UK would still need to follow the 'single rulebook' (much of which is based on international financial agreements).¹⁰¹ Currently, there are 39 regulatory equivalences under 14 different laws.¹⁰² These would all need to be followed and they are subject to change with new rules added on a regular base.¹⁰³ Following Brexit, the UK would lose its influence on shaping the single-rulebook. This means that the financial interests of the City will not be represented within the law-making process.¹⁰⁴ An example is that in 2011 the European Central Bank (ECB) decided that Euro dominated transactions should be cleared in the Eurozone. At the time the UK successfully appealed this policy in the European Court of Justice (ECJ). Following Brexit, the UK will have no influence if the EU decided to implant this policy (or any others.)¹⁰⁵

In principle there should not be a legal issue in granting the UK regulatory equivalence, given the current regulatory convergence. There is a risk that the equivalence process will be politicised in the course of the trade agreement negotiations, especially if these are not straightforward (and events of the last three years have proven that these negotiations are anything but easy).¹⁰⁶ Given the seemingly complete lack of absence of any planning for Brexit

⁹⁸ Lehmann, *Supra* n.94, at 7.

⁹⁹ Lehmann, *Supra* n.94, at 7.

¹⁰⁰ Lehmann, *Supra* n.94, at 17.

¹⁰¹ Niamh Moloney, *Financial Services, the EU, and Brexit: An Uncertain Future for the City?*, 17 *German Law Journal* 75, 80 (2016).

¹⁰² Armour, *Supra* n.87, at 61.

¹⁰³ Armour, *Supra* n.87, at 61.

¹⁰⁴ Moloney, *Supra* n.101. at 81.

¹⁰⁵ Armour, *Supra* n.87, at 62.

¹⁰⁶ Armour, *Supra* n.87, at 62.

in the UK there is a risk that regulatory equivalence would not be agreed and implemented in time before the end of the transition agreement. For instance, for Australia, Hong Kong and Singapore it took two years for the legislation to come into force.¹⁰⁷

The financial sector argues that loss of passporting rights will result in higher costs and higher risks for customers and investors¹⁰⁸ Investment becomes more expensive but also riskier because the flexibility of financial institutions decreases as more requirements are placed on these with regards to location (need to establish a presence in an EU Member State), requirements to clear assets in euros, and a limited access to the Single Market.

The period between loss of passporting rights and regulatory equivalence is specifically a risky period. UK financial institutions will face significant upheaval during that time. As stated above the IMF warns of risk aversion from investors which leads to a more volatile financial market. The global significance of the UK financial market means that the effects of the higher risks and costs will not be restricted to the UK or even the EU but will also be globally felt. The longer that this uncertainty lasts the greater this effect will be on the financial market that will seek to compensate for that uncertainty through charging higher costs and a loss of investment.

It should also be noted that EU and non-EU financial firms could also have potential difficulty accessing the UK financial market depending on what policies the UK will implement following Brexit. Therefore, firms from Member States and third countries will also face uncertainty as to their position in the UK financial market which is also a risk for global financial stability.

It is unlikely that the UK will choose to throw up significant barriers for access as this would affect their own financial institutions disproportionately. However, there is no guarantee that no new rules will be adopted. Furthermore, due to the difficulties of negotiating the overarching Brexit framework less attention is paid by the Government and Parliament to specific sections of that legal framework. This means that whilst regulations that blocks access might not be likely, there will be regulatory gaps as there will have been no time to vote in new legislation

¹⁰⁷ Armour, *Supra* n.87, at 63.

¹⁰⁸ Howarth, *Supra* n.82, at 1122

to fill these gaps. This risk can of course be addressed by immediately starting the process for regulatory equivalence, but that cannot be done until there is further clarity on the future legal framework between the UK and the EU. The main risk factors from loss of passporting rights are therefore the uncertainty as to the future relationship between the EU and the UK, the gaps to regulatory equivalence, and the politicisation of the equivalence process which means that there could be a delay before any legal solutions are adopted.

4.3 The Financial Legal Framework

Following the GFC, the EU introduced a significant amount of new regulations, including for previously unregulated organisations such as credit rating agencies and activities such as over the counter derivatives.¹⁰⁹ There is now a near complete legal European framework that regulates financial institutions, and this will not be automatically transposed following Brexit. This means that there will be regulatory gaps, and this creates significant policy uncertainty which is a cause of financial volatility and can thus destabilise the financial market.¹¹⁰ . When the UK leaves the EU, all financial firms in the UK will be treated as located in a third country.¹¹¹ This means that they will then be subject to the EU financial laws that apply to firms from third countries. This represents a significant shift for UK based financial firms and they will need to adjust to the changes.

As discussed, most of the current legislative framework in the financial sector in the UK is part of the EU legal framework.¹¹² Much of this is international in nature and based on standards set by International Standard Setting Bodies (ISSBs).¹¹³ Therefore, the UK is unlikely to make significant changes to the regulatory framework in the short term, but will roll over these measures as they stand. EU financial law will continue to be relevant for the UK financial sector after Brexit, given that financial institutions will continue to operate on both the EU and the UK financial market. This could enhance the regulatory burdens on companies who will now have to contend with EU law requirements as well as potentially divergent UK law. If UK law remains aligned with EU law and the law is thus harmonised there is a greater potential for

¹⁰⁹ Howarth, *Supra* n.80 at 153.

¹¹⁰ Ansgar Belke, Irina Dubova & Thomas Osowski (2018) *Policy uncertainty and international financial markets: the case of Brexit*, 50 *Applied Economics* 3759 n.34-35 (2018).

¹¹¹ Lehmann, *Supra* n.94, at 16.

¹¹² Moloney, *Supra* n.101. at 75.

¹¹³ Moloney, *Supra* n.101. at 75

financial stability. Legal harmonisation is key in combatting policy uncertainty.¹¹⁴ The effects of this policy uncertainty on the financial market can already be seen. The Financial Times reported that \$4.2bn has been withdrawn from UK equity funds since May 2019 and that total capital outflow since the referendum is already \$29.7bn and with experts agreeing that the uncertainty of a Brexit deal is the major contributor to this capital outflow.¹¹⁵ Investors are worried that if the UK leaves without a deal or only a perfunctory deal that leaves most policies to be negotiated at a later point, there will be no clarity on whether UK and EU financial law will continue to develop in a harmonised manner, or whether divergence will arise and if so what that would look like.

UK financial law is thus largely composed of EU law, some of this based on transnational regulations. Following Brexit, it will be a monumental task to decide which obligations to carry over. There is a risk that regulatory gaps will appear.¹¹⁶ This is especially the case when one considers the law beyond Regulations and Directives which have been incorporated in UK statutory law. The EU has emitted a vast number of guidelines, notes, and other documents, many of which are followed by the UK or at least hold some legal authority because of their provenance from the EU institutions.¹¹⁷ When the UK leaves the EU, this legal authority diminishes (and their position will be less clear) and as these rules are not part of statutory law, they cannot be rolled over as easily. This could lead to legislative gaps. Legislative gaps and the diminished legal authority of EU transitional financial rules which carry no direct legal obligations are again a cause of policy uncertainty.

The UK financial sector has sometimes raised issues with (in their eyes) the overregulation of EU financial service. This reflects the difference of philosophies between the more liberalised viewpoint of the UK and the more market regulatory viewpoint of some of the other Member

¹¹⁴ On issues related to legal harmonisation and uncertainty see for instance:

A. Claire Cutler, *Unification and Harmonisation of Private International Trade Law* 13 *Global Society* 25 (199)
Steve Maguire & Jaye Ellis, *Uncertainty, Precaution and Global Interdependence: Implications of the Precautionary Principle for State and Non-state Actors*, 256 (Biermann et al. ed. *Global Environmental Change and the Nation State*, Proceedings of the 2001 Berlin Conference on the Human Dimensions of Global Environmental Change (2001)

José Angelo Estrella Faria, *Future Directions of Legal Harmonisation and Law Reform: Stormy Seas or Prosperous Voyage?*, 14 *Uniform Law Review* 5 (2009).

¹¹⁵ Chris Flood & Shioban Riding, *Investors pull billions from UK on prospect of no-deal Brexit*, *Financial Times*, 31 Aug. 2019

¹¹⁶ Moloney, *Supra* n.101. at 82

¹¹⁷ Moloney, *Supra* n.101. at 82

States (including Germany and France).¹¹⁸ The UK often advocates for less mandatory regulation.¹¹⁹ The UK has been able to influence the financial legal framework as a member of the EU but will no longer be able to do so in the same capacity when outside the EU. Furthermore, it will be able to draft legislation reflective of its philosophies. This could lead to more regulatory divergence in the future.¹²⁰ The ECB has expressed its concerns that divergence could lead to a regulatory race to the bottom.¹²¹ Whilst deregulation could boost aspects of the financial sector in the short run as it will attract financial institutions, such a competition could in the long run affect international financial stability considerably and would encourage other states (in particular the EU) to limit access to their markets.¹²² Due to the need for regulatory equivalence between the UK and the EU there will likely be no significant divergence in the short term.¹²³ However, due to the different approaches as discussed above and the difficulty of rolling over the soft law framework in its entirety it is likely that divergence will occur in the medium to long term. Financial stability in a globalised market requires coherency between national laws¹²⁴ as international financial stability is dependent upon international cooperation.¹²⁵ The FSB has identified legal fragmentation as a key risk to financial stability.¹²⁶

Therefore, there is a need to ensure that agreements following Brexit ensure close regulatory equivalence. This agreement, whatever shapes it takes, will not deal with the complete myriad of guidelines, rules, and other forms of soft law. This body of law cannot be harmonised as easily. Financial institutions could play a leading role by ensuring they institute harmonised rules and guidelines to fill in any gaps. The market can play an important role in legal harmonisation if this is seen as beneficial for growth. If institutions feel they can benefit from divergence and competition, there will be less incentive for ensuring this harmonisation. It is thus important that states have a strong globally harmonised regulatory framework and that no major gaps arise in the legislation. This also encourages institutions to cooperate so that a harmonised soft law framework continues to exist and develop beyond Brexit. These are long-

¹¹⁸Howarth, *Supra* n.80 at 158

¹¹⁹ Armour, *Supra* n.87, at 56

¹²⁰ Howarth,*Supra* n.80 at 158

¹²¹ Howarth, *Supra* n.82, at 1125

¹²² Springford, *Supra* n.86, at 7

¹²³ Michael Randall, *Brexit and Financial Services: What Comes next*, 22 *Edinburgh L. Rev.* 149, 154 (2018)

¹²⁴ Springford, *Supra* n.86, at 6

¹²⁵ Armour, *Supra* n.87, at 60.

¹²⁶ Lehmann, *Supra* n.94, at 5.

term solutions and the work on these can only start after the future relationship between the UK and the EU is defined. There will thus likely be an uncertain period where issues have not been regulated and this will likely be followed by divergence in the legal framework between the UK and EU. This means financial firms are likely to need to adapt several times to new regulations which would cause further disruption.

4.4 Additional Disruptive Issues

Financial firms will need to further expand their operations to the EU Member States and therefore Brexit will lead to additional costs for the sector.¹²⁷ Financial services could decide to relocate to other EU Member States.¹²⁸ There is also a possibility that some firms will seek to relocate some of their services outside of the EU, for instance to the US.¹²⁹ The EU Member States are not a monolith and there will be competition between states on attracting financial operations in an attempt to become the main financial hub of the eurozone. This is coupled with the risk of competitive legislation, a race to the bottom (as discussed above), whereby different states will try to attract as many services as possible.¹³⁰ This all leads to an unstable situation and this could affect the confidence of investors. Risk aversion could lead to disinvestment in the short term as investors are likely to wait until the situation stabilises.¹³¹

The UK is the main clearing hub for euros. It is unclear whether the EU will impose legislation that will limit the position of the UK, but it is likely there will be changes. The ECB as well as the French and German governments have already made statements discussing the need to ensure that the Eurozone should be the main clearing area for euros.¹³² This means that UK financial institutions will face restrictions on certain transactions and that they will have to shift operations to the Single Market. This leads to an upheaval in the market and additional costs.

Whilst most of this section focused on the effects of the UK financial sector on international financial stability there is also the issue of how the changes will affect the EU. Research

¹²⁷ McMahon, *Supra* n.95, at 3

¹²⁸ Douglas J. Cumming & Shaker A. Zahra, *International Business and Entrepreneurship Implications of Brexit*, 27 Br. J. Manag, 687, 689 (2016).

¹²⁹ André Sapir, Dirk Schoenmaker, & Nicolas Véron, *Making the Best of Brexit for the EU27*, 1 Bruegel Policy Brief 6 (2017)

¹³⁰ Sapir, *Supra* n.129, at 6

¹³¹ Randall, *Supra* n.123, at 150.

¹³² Howarth, *Supra* n.82, at 1124

indicates that the EU banking sector could be hit even worse than that of the UK.¹³³ This is because of a decline in investment firms in the EU (with banks not being able to support the investments in the firm) and a decrease in total deposits in EU banks which makes the banking sector in the EU more vulnerable.¹³⁴ This means that negative economic consequences of Brexit will be felt within the EU banking sector and lead to the EU banking sector not carrying the real weight of the economy, given that this will no longer be supported by the UK banking sector, which now plays a disproportionately large role.¹³⁵ If there is no deal this will likely cause financial instability which will impact national economies.¹³⁶

4.5 Future Planning

In 2016 the US Treasury Department warned that Brexit could be a threat to the stability of the US financial sector given that there will be a long period of uncertainty about the rules that would now govern transactions.¹³⁷ In 2020 there is still the same uncertainty and a quick resolution seems far away. This article has not discussed the impact of Brexit on the economy as a whole as this is beyond its scope. It is clear that the economy of both the UK and the Member States could be severely impacted by Brexit.¹³⁸ This would also affect the financial sector.

Not all sections of the financial sector will be equally affected by Brexit. Most at risk are the sections which are the most globalised. These would include wholesale banking, investment

¹³³ Aristeidis Samitas Stathis Polyzosb & Costas Siriopoulousa, *Brexit and Financial Stability: An Agent-based Simulation*, 69 *Economic Modelling* 1 (2018).

¹³⁴ Samitas, *Supra* n.133, at 29.

¹³⁵ Samitas, *Supra* n.133, at 31.

¹³⁶ Randall, *Supra* n.123, at 150.

¹³⁷ Douglas, *Supra* n.128, at 689

¹³⁸ UNCTAD has warned of the strong effects of a non-deal Brexit on the economy and predicts this could lead to a 7% drop in exports from the UK to the EU (which is \$16 billion dollars) and that 20% of the UK exports to non-member states are at risk because these non-member states have preferential access to the EU market through trade deals.

(Pamela Coke & Alessandro Nicita, *The trade cost of a no-deal Brexit to the United Kingdom*, 3 Sept. 2019 <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2176>)

Research from UNCTAD also analyses how a no-deal Brexit would hit especially the economies of the UK, the EU, but could also affect non-member states that have strong trading links with the UK (such as for instance Turkey)

(Alessandro Nicita, Ksenia Koloskova & Mesut Saygili, *Brexit. Implications for Developing Countries*, UNCTAD Research Paper No.31 (2019)

See also for the effects of Brexit on the economy:

Patrick Minford, *The effects of Brexit on the UK economy*, 42 *The World Economy*, 57 n.1 (2019)

Gabriel Felbermayr, Clemens Fuest, Jasmin Katrin Gröschl & Daniel Stöhlker, *Economic Effects of Brexit on the European Economy*, *Economic Policy Reports* 4(2017)

John van Reenen, *Brexit's Long-Run Effects on the U.K. Economy*, *Brookings Papers on Economic* 367 (2016)

banking, and derivatives clearing.¹³⁹ At risk are especially non-EU headquartered banks that have a UK subsidiary to ensure EU passporting rights (around 14% of the UK banking sector).¹⁴⁰ These would no longer have a reason to be in the UK and would likely relocate to a Member State.¹⁴¹ The banking sector would thus be impacted, especially given the limited regulatory equivalence that exists for retail and commercial banking.¹⁴² For other sectors such as wholesale financial transactions there likely will be more intensive competition from for instance the United States.¹⁴³

The UK and the EU have already taken some specific measures to avoid disruption to the financial market such as the recent activation of currency swap arrangements between the Bank of England and the ECB to underpin market liquidity. The EU has adopted time-limited equivalence decisions for UK central counterparties and central securities depositories. These types of solutions should be further encouraged but it would be important to ensure these fit in an overarching legal framework and are not just temporary stopgaps.

This section discussed the potential effects of Brexit on global financial stability. These effects are closely linked to uncertainty. The key short-term risk is the loss of passporting rights (especially if there is not immediately a lack of regulatory equivalence) and the key long-term risk is legal divergence which works against financial stability as the latter benefits from legal harmonisation. Policy uncertainty is a net contributor to financial instability, even to eclipse the actual financial volatility event itself.¹⁴⁴ In the UK this effect could be observed following the Brexit referendum and is likely to continue, even in the medium term.¹⁴⁵ The Withdrawal Agreement only concerns the transition period and a further trade deal still needs to be negotiated.¹⁴⁶ Therefore, the continued uncertainty represents a risk to international financial stability. This is aggravated by the politicisation of the process which leads to further delays in establishing long term policy. The UK and the EU will need to come to an agreement on the financial sector as soon as possible and it is important that such an agreement is comprehensive,

¹³⁹ Howarth, *Supra* n.82, at 1123

¹⁴⁰ Armour, *Supra* n.87, at 65.

¹⁴¹ Armour, *Supra* n.87, at 65.

¹⁴² Armour, *Supra* n.87, at 67.

¹⁴³ Armour, *Supra* n.87, at 67.

¹⁴⁴ Belke, *Supra* n.110, at 3759.

¹⁴⁵ Belke, *Supra* n.110, at 3762.

¹⁴⁶ EU (Withdrawal Agreement) Bill Available on: <https://www.gov.uk/government/publications/eu-withdrawal-agreement-bill>

in alignment with international developments, focused not just on the EU and the UK but also taking into account the global financial market in order to foster stability, and is aimed at maintaining legal harmonisation.

5. Emerging Market Economies –Key Issues for Financial Stability

5.1 Introductory Issues

This final part analyses key risks in emerging market economies (EME) that could threaten global financial stability, and which have not yet been sufficiently recognised by policy makers and analysts. The literature has concentrated mainly on the effects of global financial markets on EME and has not analysed how key issues that specifically affect EME would affect global financial stability. This section analyses several of these other issues: specifically, unstable trade policies from major players like the USA, (a perception) of domestic policy uncertainty leading to sudden changes in capital flow, and high foreign currency debts leaving the market more vulnerable to changes in international financial markets. Whilst the effects of these issues on the domestic financial markets in EME have been discussed, there is no in-depth analysis on how in turn this could affect global financial stability. This section will thus analyse how these issues destabilise domestic financial markets in EME from the perspective of how this affects global financial stability.

EME can be defined as low income countries that have a fast pace of development and a government favouring economic liberalisation policies.¹⁴⁷ They have diverse economic environments, but instability is a common factor.¹⁴⁸ As the economies develop further, they become more entwined with the international financial market. The ECB has stated that compared to two decades ago, EME play a significantly more prominent role in the global economy.¹⁴⁹ They now account for more than half of global GDP (at purchasing power parity) and gross capital flows.¹⁵⁰ Thus there now more risk of EME affecting global financial stability because of their larger role in the international economy. EME and advanced economies share

¹⁴⁷ Robert E. Hoskisson, Lorraine Eden, Chung Ming Lau & Mike Wright, *Strategy in Emerging Economies*, 43 Acad. Manag. J. 249, 249 n.3 (2000).

¹⁴⁸ Klaus Meyer & Mike Peng, *Theoretical Foundations of Emerging Economies Business Research*, 47 J. Int. Bus. Stud. 3, 10. n.1 (2016)

¹⁴⁹ Livia Chitu & Dominic Quint, *Emerging market vulnerabilities – a comparison with previous crises*, ECB Economic Bulletin, n.8 (2018)

https://www.ecb.europa.eu/pub/economic-bulletin/focus/2018/html/ecb.ebbox201808_01.en.html

¹⁵⁰Chitu, *Supra* n.148

many similar vulnerabilities that could put international financial stability at risk. EME are highly volatile and investment in EME is characterised as high risk by financial institutions.¹⁵¹ This means that EME are more vulnerable to policy uncertainty and this can potentially have a rippling effect on the global financial market.

Whereas previously a financial crisis affecting advanced economies would strongly affect emerging economies but far less so the other way around, this is no longer the case. Because of the economic growth of EME threats to financial stability now also flow from EME to advanced economies and it is important that policy makers worldwide have appropriate tools to monitor and understand these risks.¹⁵² This is especially so in relation to those risks to which EME are especially vulnerable in comparison to advanced economies.

Obviously, the topic of EME is vast and this article does not include a complete discussion on all issues related to financial stability and EME. It only seeks to highlight several key issues that could affect global financial stability. Furthermore, EME are a diverse group of countries all over the world. It is clear that different factors are at play in each of these economies. This section thus concentrates on several risks common to EME that could threaten international financial stability.

5.2 Trade Policy

Both the World Bank and the IMF have identified trade tensions with the US as a potential risk to worldwide financial stability.¹⁵³ US trade policy is important for the global financial market because of the size of its economy and the role of the dollar as the global reserve currency. Growth of global trade has slowed significantly in recent years.¹⁵⁴ This is mainly due to changes in trade policy. The overall rise in protectionism has led to the integration of international trade slowing down.¹⁵⁵ In itself this does not necessarily threaten financial

¹⁵¹ Ashoka Mody, *What is An Emerging Market?* IMF Working Papers, N. 04/177, 3 (2004).

<https://www.imf.org/en/Publications/WP/Issues/2016/12/31/What-is-An-Emerging-Market-17598>

¹⁵² Etienne Lepers & Antonio Sánchez Serrano, *Decomposing financial (in)stability in emerging economies*, 9 Working Paper Series European Systemic Risk Board (2017)

¹⁵³ IMF, *Global Financial Stability Report: A Decade after the Global Financial Crisis: Are We Safer?*, 5 (2018).
[:https://www.imf.org/en/Publications/GFSR/Issues/2018/09/25/Global-Financial-Stability-Report-October-2018](https://www.imf.org/en/Publications/GFSR/Issues/2018/09/25/Global-Financial-Stability-Report-October-2018)

¹⁵⁴ IMF, *Supra* n.90, at IX

¹⁵⁵ Vanessa Gunnella & Lucia Quaglietti, *The economic implications of rising protectionism: a euro area and global perspective*, 3 ECB Economic Bulletin (2019)

stability. However as discussed in previous sections, for the financial market to be stable, policy certainty is key. Whilst this is a global threat it is more likely to affect EME because they are less shock-resistant to policy uncertainties because of domestic policy uncertainty and they are more vulnerable to sudden changes in capital flow.¹⁵⁶

The trade policy of the US has become more volatile in recent years. Policies of the current administration are difficult to predict and anticipate. This could affect stability because it is hard for financial institutions to predict effects of a policy if there is no clarity on what that policy will be. Especially the trade tensions between the US and China have the possibility of affecting financial stability given the size of the Chinese economy. This is even more of an issue because of the financial fluctuations in China's economy and the currently less predictable and more unstable growth of the Chinese economy.¹⁵⁷ The lack of a consistent trade policy makes it difficult to adjust and this creates uncertainty among both states and businesses. Whilst the exact effects are difficult to predict, the financial market reacts to changes in trade policy. For instance, the optimism about negotiations between China and the US were one of the causes of the rebound of the financial market at the start of 2019.¹⁵⁸

Under the current US administration led by President Trump, the approach to global trade is characterised by further protectionism and frequent policy changes that are more political than economic in nature. This has, for instance, resulted in the imposition of higher trade tariffs on an assortment of goods (including steel and aluminium) and on goods from certain states (notably China). Of course, trading partners respond to these changes by levying their own tariffs. Trade policy is used as a political tool. In June 2019 the Trump Administration threatened to impose 5% tariffs on Mexican imports unless Mexico stopped migrants from crossing the US southern border. If Mexico did not respond the tariffs would go up to 25% by October 2019.¹⁵⁹ Clearly, these tariffs serve no economic purpose and were meant as a political tool to pressure the Mexican government in compliance. Using trade policy in this way is likely

https://www.ecb.europa.eu/pub/economic_bulletin/articles/2019/html/ecb.ebart201903_01~e589a502e5.en.html

¹⁵⁶ IMF, *Supra* n.90, at IX

¹⁵⁷ IMF, *Supra* n.90, at IX

¹⁵⁸ IMF, *Supra* n.90, at IX

¹⁵⁹ Sarah Nassauer & Heather Haddon, *Tariffs on Mexican Imports Would Hit More Than Avocados in Grocery Stores*, 1 Jun. 2019, *The Wall Street Journal*

to cause unrest on the market as the decisions are unpredictable and there is no economic logic behind them.

The attitude of the Trump Administration towards international trade is that of a zero-sum, adversarial approach, where there is a winner and a loser.¹⁶⁰ As evidenced by the refusal of the Trump Administration to nominate candidates to the appellate dispute resolution body of the World Trade Organisation (WTO) and the attacks on the North America Free Trade Association (NAFTA) and the support of Brexit there is a mistrust within the Administration for the organisations that seek to regulate international trade. If the US operates mainly outside of the confines of the international institutions their policy becomes less predictable. The US could use the size of its economy to push for more advantageous, less balanced trade deals with other states which could diminish the flow of capital between states, and states with emerging markets are more vulnerable to this.¹⁶¹ The operation of the Trump Administration outside institutional confines threatens economic stability because these organisations provide mechanisms to limit the effect on shocks to the financial market.¹⁶² This could also weaken the position of the IMF which is an institution that promotes economic growth and financial stability.¹⁶³ Trading outside the bounds of international institutions which are characterised by a rule-based approach to trade means a less structured, more volatile, and less predictable approach to international trade. This could particularly affect EME who on average have less financial resilience to cope with changing policies and who have on average weaker domestic institutions that could not take over the role that international institutions currently fulfil.

Haley discusses how trade agreements (bilateral and multilateral) often have currency manipulation clauses which push out IMF policy and how these clauses put smaller economies at a disadvantage as they would have more to lose in case of a dispute that threatens the flow of trade.¹⁶⁴ Possible effects could include businesses deciding to diminish their exports or not entering foreign markets at all.¹⁶⁵

¹⁶⁰ James A Haley, *Trump Trade Policy, Exchange Rate Surveillance and the IMF: Back to the Future?*, Centre for International Governance Innovation, No. 224 CIGI Papers 1 (2019)

<https://www.cigionline.org/sites/default/files/documents/no.224web.pdf>

¹⁶¹ Haley, *Supra* n.160, at 1.

¹⁶² Haley, *Supra* n.160, at 11.

¹⁶³ Haley, *Supra* n.160, at 10.

¹⁶⁴ Haley, *Supra* n.160, at 9.

¹⁶⁵ Gunnella, *Supra* n.157.

Information asymmetry is a key obstacle for well-functioning and stable financial system as information flows interfere with the financial system and this ‘*can then no longer perform its function of mobilising savings, facilitating the exchange of goods and services, reducing risks and allocating resources to productive sectors.*’¹⁶⁶ This points to the importance of reliable information to inform state policy and to inform decisions made by financial firms. A volatile trade policy encourages information asymmetry and would thus be a risk factor for states (which cannot predict changes in trade policy as easily) and for financial firms (which have no reliable information to inform their decisions).

If trade tensions escalate further this could lead to eroding confidence in the global economy.¹⁶⁷ Model based simulations from the IMF and the ECB indicate that the escalation of trade tensions causes additional financial stress on the market.¹⁶⁸ The market cannot predict the changes in policy and risk averse investors will be slower to invest and quicker to withdraw funds. Depending on how predictable and sudden the changes are this can affect international financial stability. EME are more vulnerable to these sudden changes because of several factors: they have less ability to cope with changes in trade policy as their infrastructure is less developed, their financial markets are characterised by high foreign currency debts which makes them more vulnerable to changes in the global economy, and investors are already more risk averse when it comes to EME. If trade policy tensions destabilise the financial market this disproportionately affects EME which in turn can affect global financial stability.

5.3 The Flow of Capital

A second important risk to financial stability in EME is a sudden change in capital flows. To further develop the financial market in EME capital flow across borders is encouraged. However, capital flow also brings risk to financial stability.¹⁶⁹ It leaves the economy more

¹⁶⁶ Enowbi Batuo, Kupukile Mlambo & Simplice Asongu, *Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa*, African Governance and Development Institute, No. 82641 MPRA Paper, 7 (2017).

https://mpr.ub.uni-muenchen.de/82641/1/MPRA_paper_82641.pdf

Roger Gordon & A. Lans Bovenberg, *Why is capital so mobile internationally? Possible explanations and implications for capital income taxation*, 86 Am. Econ. Rev 1057 n.5 (1996).

¹⁶⁷ Gunnella, *Supra* n.155.

¹⁶⁸ Gunnella, *Supra* n.155.

¹⁶⁹ Ulrich Volz (ed.), *Financial Stability in Emerging Markets: Dealing with Global Liquidity*, German Development Institute 4 (2012)

https://www.researchgate.net/publication/256017592_Financial_Stability_in_Emerging_Markets_-_Dealing_with_Global_Liquidity

vulnerable to external shocks and this can have a cumulative effect on global financial stability.¹⁷⁰ If an economy has limited exposure to international capital flows the economy is less at risk to external shocks and volatility is low.¹⁷¹ The lack of integration with the wider financial market ensures a cushion against global financial instability and provides a barrier against domestic financial instability affecting the international financial market. As the capital flows across borders with EME have grown these have become more vulnerable to financial instability. EME are particularly vulnerable to changes in capital flow if they also have low reserves, high leverage, or high foreign currency exposures.¹⁷² The liberalisation of the financial markets in EME has led to their further integration in the international financial market.¹⁷³ The merits of this further integration have been analysed and there is no clear definite answer on how beneficial this is.¹⁷⁴ This discussion falls beyond the scope of this article but suffice to say that the further liberalisation and integration of EME has led to increased capital flows and that this creates a greater risk to global and domestic financial stability.

In 2011 the flow of capital to EME was \$910 billion compared to \$149 billion in 2002.¹⁷⁵ This means the markets are now closer linked and therefore an internal financial crisis risks affecting other financial markets. The IMF identified that concerns about policy credibility of EME could cause significant capital outflow which is a risk to financial stability.¹⁷⁶ Policy credibility means that investors trust that the domestic policies of a country are designed to protect their investments. Investors can perceive EME financial policies as arbitrary and not necessarily working for their best interest.¹⁷⁷ This is partly due to the high volatility of the economy and partly because of the transitional state of EME which means that the political and economic landscape is perpetually changing and policy is thus in a constant state of flux.¹⁷⁸ Investors

¹⁷⁰ E Han Kim & Vijay Singal, *The Fear of Globalizing Capital Market*, 1 Emerg. Market. Rev. 183 (2000).

¹⁷¹ Batuo, *Supra* n.166, at 4.

¹⁷² IMF, *Supra* n.90, at VIII.

¹⁷³ Batuo, *Supra* n.166, at 4.

¹⁷⁴ See for instance:

S.A Asongu, *Liberalisation and Financial Sector Competition: A Critical Contribution to the Empirics with an African Assessment* 83 South African Journal of Economics 425 (2015).

Geert Bekaert, Campbell R. Harvey, Christian Lundblad, *Growth Volatility and Financial Liberalisation*.

Journal of International Money and Finance, 25 J. Int. Money Finance 370 n.3 (2006)

Norman Loayza & Romain Ranciere, *Financial Development, Financial Instability and Growth*, CESifo Working Paper No. 684 (2002)

¹⁷⁵ Volz, *Supra* n.169, at 4.

This is a continuing trend apart from the 2008-2009 period when the flow of capital was down and the pre-crisis year 2007 which spiked at USD 1,244 billion.

¹⁷⁶ IMF, *Supra* n.153, at 4,5.

¹⁷⁷ Mody, *Supra* n.151, at 6.

¹⁷⁸ Mody, *Supra* n.151, at 6.

cannot anticipate the policies in an effective manner, and this increases investment risks. This is coupled with the perception that policies are more corrupt in EME which decreases transparency, raises business costs, and makes investors wary.¹⁷⁹ This can especially discourage long-term investments.¹⁸⁰ This makes the economy and the financial market of EME more unstable. The high volatility of EME is partly caused by this domestic policy instability which can hamper economic growth and lead to more abrupt changes in capital flow.¹⁸¹

A financial crisis can suddenly diminish the flow of capital to the affected country and even the whole region.¹⁸² Whilst there is a significant linkage between capital flows and financial stability there is no conclusive evidence on how this linkage works.¹⁸³ Not all capital flows are as vulnerable to external factors during financial crises: dollar debts are more vulnerable than local currency debts and equity portfolio investments for instance.¹⁸⁴ The influence on banking flows and portfolios is also much stronger than on Foreign Direct Investment.¹⁸⁵ Drivers of capital flow vary across components and should therefore be categorised to understand where the economy is particularly vulnerable.¹⁸⁶ This makes it difficult to have effective regulation to counter the risks. Some of the financial factors that play a role in this linkage: the size of the banking sector, the credit to deposit ratio, and the liquid assets to deposit ratio, and macro-economic factors such as real GDP per capital, trade openness, rate of inflation, and the exchange rate regime.¹⁸⁷ The effects also vary per country so there is a risk if EME are treated as an entity that the regulations are not effective given the different concerns that exist in

¹⁷⁹ Chi Keung Marco Lau, Ender Demir & Mehmet Huseyin Bilgin, *Experience-based corporate corruption and stock market volatility: Evidence from emerging markets* 17 *Emerg. Markets Rev.*, 1 (2013)

¹⁸⁰ Beata S Javorick & Shang-Jin Wei, *Corruption and cross-border investment in emerging markets: Firm-level evidence*, 28 *J. Int. Money Finance* 605 (2009).

¹⁸¹ Mody, *Supra* n.151, at 6.

¹⁸² Marcel Förster, Markus Jorra & Peter Tillmann, *The comovement of international capital flows: evidence from a dynamic factor model*, 19 (Volz (ed.) German Development Institute (2012)

https://www.researchgate.net/publication/256017592_Financial_Stability_in_Emerging_Markets_-_Dealing_with_Global_Liquidity

¹⁸³ Christopher F Baum, Madhavi Pundit & Arief Ramayandi, *Capital Flows and Financial Stability in Emerging Economies*, 522 ADB Economics Working Paper Series 16 (2017).

¹⁸⁴ Anton Korinek, *Regulating Capital Flows to Emerging Markets: An Externality View* *J. Int. Econ* 61, 65 (2018).

¹⁸⁵ Robin Koeke, *What Drives Capital Flows to Emerging Markets? A Survey of the Empirical Literature*, MPRA Paper No. 75887, 6 (2015)

https://mpr.ub.uni-muenchen.de/75887/15/MPRA_paper_75887.pdf

¹⁸⁶ Koeke, *Supra* n.185, at 6.

¹⁸⁷ Baum, *Supra* n.183, at 10.

individual states.¹⁸⁸ The lack of trust in the resilience and policy of EME (discussed above) encourages further capital flow to advanced economies if these are perceived as more stable.¹⁸⁹

Risk aversion and policy uncertainty play a key role in decisions to invest.¹⁹⁰ EME are especially vulnerable to this as EME assets are generally seen as high-risk investments.¹⁹¹ Thus in times of a (potential) crisis investors are more likely to divest and search lower risk investments elsewhere (even if these have a lower return) and this makes capital flows more volatile.

Benchmark driven investors are more sensitive (three to five times compared to other investor streams) to changes in global financial conditions.¹⁹² An investment fund is benchmark driven when '*portfolio allocation across countries is guided by the country weights in a benchmark index.*'¹⁹³ As benchmark driven investors now have a larger share of the portfolio market (this quadrupled in the past ten years) this could lead to sudden changes in capital flow.¹⁹⁴ The inclusion of EME in the benchmark indices gives them accessibility to more and more diverse finance but EME are also more vulnerable to the common factors included in the indexes, which tend to treat EME as a class rather than being country specific.¹⁹⁵ The result is that the flow of capital can change drastically regardless of how well the internal economy is doing. EME are more vulnerable to changes in capital flow because they are more dependent on the availability of foreign capital than advanced economies.¹⁹⁶ If the flow of capital diminishes this undermines the banking system and industries which affects the economy.¹⁹⁷ This thus leaves the country at risk to financial destabilisation. Given the further integration of the EME with the global financial market this could have a knock-on effect on financial stability worldwide.

¹⁸⁸ Baum, *Supra* n.183, at 14.

¹⁸⁹ IMF, *Supra* n.153, at 13.

¹⁹⁰ IMF, *Supra* n.153, at 17.

¹⁹¹ Koeke, *Supra* n.185, at 10.

¹⁹² IMF, *Supra* n.90, at 30.

¹⁹³ IMF, *Supra* n.90, at 31.

¹⁹⁴ IMF, *Supra* n.90, at 30.

¹⁹⁵ IMF, *Supra* n.90, at 32.

¹⁹⁶ Maurice Obstfeld, *Financial Flows, Financial Crises, and Global Imbalances*, 31 J. Int. Money Finance 469 (2011).

¹⁹⁷ Batuo, *Supra* n.166, at 4.

Short-term foreign currency debt is another issue that leaves EME vulnerable.¹⁹⁸ Exchange rates and interest rates can diverge which creates a more volatile market. The use of risky external finance instruments such as foreign currency denominated debts create a risk to stability.¹⁹⁹ Individual investors take the risk to the economy as a given because of the short-term profits these instruments engender. There is little reason for an individual investor to not use these instruments if everyone else does. This would thus ask for international regulatory intervention that leads to more harmonised law across states.²⁰⁰ High external debt and weak reserve coverage levels cause vulnerability to external shocks which has an effect on global financial stability.²⁰¹ This risk is diminished because few countries have a high public debt and a high foreign currency debt (Lebanon, Tunisia, Ukraine are examples of countries which do) and most countries with high public debt (including large economies such as Brazil and India) have a low foreign currency debt.²⁰² This is thus less likely to represent a risk to global financial stability. The countries that are especially vulnerable are smaller economies and any internal crisis is not likely to have a significant effect on the global financial market.

5.4 Building Policy

Compared to twenty years ago, many EMEs have reduced their external vulnerabilities and improved their policy frameworks significantly. A large proportion of EMEs have adopted inflation-targeting monetary policy frameworks, which help to anchor inflation expectations and stabilise business cycles. The domestic banking sector in EME has grown so there is more domestic credit available.²⁰³ The IMF recommends that EME implement policies that provide further resilience against changes in the capital flow, but warns against the extensive use of capital flow management except in times of a (near) crisis as this can lead to the exclusion from certain benchmark indices which would also affect the (domestic) financial market.²⁰⁴

¹⁹⁸ IMF, *Supra* n.153, at 19.

¹⁹⁹ Anton Korinek, *Emerging market economies after the crisis: trapped by global liquidity?* 35 (Volz (ed.) German Development Institute (2012).

https://www.researchgate.net/publication/256017592_Financial_Stability_in_Emerging_Markets_-_Dealing_with_Global_Liquidity

²⁰⁰ Korinek, *Supra* n.201, at 35.

²⁰¹ IMF, *Supra* n.153, at 20.

²⁰² IMF, *Supra* n.153, at 20.

²⁰³ Lepers, *Supra* n.152, at 2.

²⁰⁴ IMF, *Supra* n.90, at 45.

Whilst because of the regulatory changes EME are more resilient against a global financial crisis their further integration in the international financial market also means that they can affect the global financial market more. EME markets are more volatile, and this is a risk for global financial stability. EME are more vulnerable to changes in capital flows because of their dependence on foreign currency and because investment in EME is considered more high risk. Thus, the capital flows are more volatile and sudden changes can affect the (domestic) financial market.

Uncertainty in trade policy and flow of capital are directly linked. If trade policy is uncertain and especially in a political climate where a trade war does not seem far away, firms could make the choice to shift their portfolios to ‘safer’ currencies and investments.²⁰⁵ The current trade tensions might escalate further, but this is difficult to predict and this will make investors more careful. These tensions could thus have a direct effect on capital flows and would disproportionately affect EME.

The heightened interconnectedness between the national and the global financial market for EME means that it is key to stabilise domestic financial markets to ensure international financial stability. Therefore, the goal should be the stabilisation of capital flow to a similar degree as in advanced economies. To do so investment must be considered to have the same risk as in advanced economies. One of the key elements for this stability is whether the country is perceived as willing and capable to repay its debts.²⁰⁶ Furthermore, policy certainty that promotes transparency and clarity for investors is important to reduce the high-risk investment perception. This encourages investment and ensures less volatile capital flows. To accomplish this further international legal harmonisation focusing on certainty and transparency should be considered.

6. Conclusion

Ten years after the GFC the international regulatory financial framework is far more robust and resilient to shocks due to the introduction of new legislation. It was identified that failures in supervision and lack of regulation were an important cause of the crisis. This led to a significant amount of legislation which all supported the goal of furthering financial stability

²⁰⁵ Gunnella, *Supra* n.155.

²⁰⁶ Suk-Joong Kim, *Sovereign credit ratings, capital flows and financial sector development in Emerging markets*, 9 *Emerg. Markets Rev.* 17, 20 (2008).

so that a global financial crisis will be less likely to occur. Nevertheless, different factors could threaten this financial stability. This article has highlighted three of these factors: fintech, Brexit, and emerging markets. These risks are addressed from different perspectives, but the perspective of global financial stability is lacking in the literature. Whilst all three of these factors have different causes and potential effects, they also share some key commonalities. They all three arose post the financial crisis and are thus new factors that are underregulated and cause significant policy uncertainty that could lead to changes in the financial landscape, including sudden shifts in capital flow. All three of these risks are currently modest but have the potential to evolve very quickly and therefore a legal response is needed, in order to be proactive rather than reactive. Policy made to address these issues should take into consideration the importance of global financial stability and factor in how any regulation would affect this.

The fintech sector is still small but is experiencing exponential growth. It will therefore increasingly become a significant factor on the international financial market. Currently, there is only minimal regulation in place. The existing laws are domestic and there is no international harmonisation. The lack of a coherent international legal framework forms a potential threat to financial stability. The lack of legal harmonisation leads to policy uncertainty and gaps in the legislation that can be exploited by financial operators. The quick growth of the sector could quickly aggravate the risks to international financial stability as this could lead to unpredictable changes in the international financial market.

The process of the UK exiting the EU does not need to lead to an instable financial market in and of itself. However, the continued uncertainty regarding the future agreements between the EU and the UK, and the influence of (party) politics which makes decisions less predictable could cause significant issues on the global financial market. Regulatory equivalence will be an ongoing process, legal divergence will occur in the longer term, and the lack of policy certainty and transparency can lead to sudden changes in the financial market and in capital flows.

EME are a diverse group of countries but share a more volatile economy which is more vulnerable to sudden shifts in capital flows. This is coupled with policy uncertainty and a perception of corruption and lack of transparency. Investors therefore regard EME as high-risk investments and fuelled by uncertainty are more likely to move capital when there are tensions

on the market, such as the tensions surrounding international trade policy, especially with regards to the unpredictability of US trade policy. As EME have grown they have become more important for the global economy and more entwined with the international financial market. Therefore, fluctuations on domestic markets are likely to affect the global financial market.

From the above the conclusion can be made that a pattern emerges whereby policy uncertainty leads to more wariness from investors which could lead to sudden changes in capital flows which further destabilise the markets. Gaps in regulation regarding changes in the structure of the financial market can aggravate risks to international financial stability. This article contributed to understanding why fintech, Brexit, and EME threaten global financial stability and why it is therefore key that this aspect is taken into account when policy is drafted. Whilst the concrete solutions for all three of these risks would differ it is clear that further legal harmonisation leading to a unified global legal framework for the financial market is necessary. Legal harmonisation counters policy uncertainty, diminishes regulatory gaps between countries, diminishes the risks for investors, counters sudden significant changes in capital flow, and allows for more policy transparency. Therefore, ideally these risks would be addressed at the international level with input from different stakeholders, including banks and other financial institutions. At the very least domestic policy makers should take into account international developments when drafting legislation that addresses these challenges.

From the analysis it becomes clear that smaller legislative issues can have a potentially destabilising effect on the global financial market and that it is therefore important to address these issues early on. As can be observed from these three issues there is a tendency for policy makers and politicians to address other more immediate needs first and only focus on financial stability once the potential threat emerges and is no longer only potential. Furthermore, there is a real risk that new policy is politicised. Examples mentioned in this article include how the European Commission has handled passporting rights by using it to gain leverage and how the US is using trade policy to gain concessions in other areas. This makes policy less predictable for financial institutions which leads to a more volatile market that is reactive instead of proactive. Therefore, a case can be made for more technical law making at the international level, involving financial institutions and actors, international organisations, and other experts that can draft conventions and other legislation. This would ensure more predictable policy that responds better to the needs of the financial market.

Whilst this article concentrated on fintech, Brexit, and EME, it also leads to a broader understanding on how policy issues affect global financial stability. The commonalities of the regulatory challenges discussed here have a more universal application: as policy uncertainty emerges as a root cause it is important that legislators address issues of global financial stability early on to ensure that no legislative gaps emerge, and new policy is predictable for financial actors.