United Kingdom: Financial Sector Assessment Program -Select Issues in Systemic Risk Oversight and Macroprudential Policy

INTERNATIONAL MONETARY FUND

INTERNATIONAL MONETARY FUND

IMF Country Report No. 22/104

UNITED KINGDOM

FINANCIAL SECTOR ASSESSMENT PROGRAM

April 2022

SELECT ISSUES IN SYSTEMIC RISK OVERSIGHT AND MACROPRUDENTIAL POLICY

This Financial Sector Assessment Program paper on United Kingdom was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on March 18, 2021.

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International Monetary Fund
Washington, D.C.

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March 18, 2022

TECHNICAL NOTE

SELECT ISSUES IN SYSTEMIC RISK OVERSIGHT AND MACROPRUDENTIAL POLICY

Prepared By
Monetary and Capital Markets Department

This Note was prepared by IMF staff in the context of an IMF Financial Sector Assessment Program (FSAP) in the United Kingdom. The FSAP was led by Mr. Udaibir Das. The note contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at http://www.imf.org/external/np/fsap/fssa.aspx

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AIFMD	AIF Managers Directive
ARF	Authorities' Response Framework
ACS	Annual Cyclical Scenario
BOE	Bank of England
BBLS	Bounce Back Loan Scheme
BIS	Bank for International Settlements
CBDC	Central Bank Digital Currency
CCP	Central Counterparties
CCyB	Countercyclical Capital Buffer
ECL	Expected Credit Loss
EMIR	European Market Infrastructure Regulation
EU	European Union
FCA	Financial Conduct Authority
FPC	Financial Policy Committee
FSB	Financial Stability Board
corep	Capital reporting
FINREP	Financial reporting
FMID	Financial Markets Infrastructure Division
FSAP	Financial Sector Assessment Program
FSR	Financial Stability Reports
STDF	Stress Test Data Framework
SCM	Second-charge Mortgages
FSSR	Financial Stability Strategy and Risk
FSMA	Financial Services and Markets Act
GFC	Global Financial Crisis
ONS	Office for National Statistics
GDP	Gross Domestic Product
MMFR	Money Market Funds Regulation
MCOB	Mortgage Conduct of Business
HMT	HM Treasury
IOSCO	International Organization of Securities Commissions
IEO	Independent Evaluation Office
LTI	Loan-to-Income
LVI	Loan-to-value
LTAF	Long Term Asset Fund
MPC	Monetary Policy Committee
MMF	Money Market Fund
MMFR	Money Market Fund Regulation
MGS	Mortgage Guarantee Scheme
NBFI	Non-Bank Financial Intermediaries
PRA	Prudential Regulatory Authority
PRC	Prudential Regulatory Committee
PPD	Prudential Policy Directorate
PCC	Policy Coordination Committee
PTF	Proximity to Failure
HIF	Harm in Failure
RBB	Risks Beyond Banking
OSSG	Official Sector Steering Group

SIF	Sustainable Insurance Forum
SDLT	Stamp Duty Land Tax
U.K.	United Kingdom
U.S.	United States
IMF	International Monetary Fund
WDB	Workstream on Dealer Behavior

EXECUTIVE SUMMARY

The United Kingdom's macroprudential policy framework has proven its effectiveness. After the Global Financial Crisis (GFC) of 2007–09, the United Kingdom assigned the Bank of England (BOE) a clear financial stability mandate, created a new Financial Policy Committee (FPC) to set macroprudential policy, and shifted to a "twin peaks" model of financial oversight. The 2016 Financial Sector Assessment Program (FSAP) concluded that the new framework appeared appropriate for effectively conducting macroprudential policy. However, the framework was then relatively new. The 2021 FSAP represents an opportunity to review its performance in building systemic resilience through the financial cycle, including the market volatility resulting from the Brexit vote and the COVID-19 pandemic.

The operationalization of a relatively young macroprudential policy framework has been commendable. The FPC runs state-of-the-art, collaborative processes for monitoring stability risks and evaluating policies to promote financial sector resilience. The FPC has sufficient powers to take action to promote financial stability, as noted in the 2016 FSAP; moreover, this FSAP Technical Note describes cases in which the FPC has shown a willingness to use those powers. The FPC and the other U.K. authorities that share responsibility for macroprudential oversight have clarified their responsibilities, developed new mechanisms for cooperation, and fine-tuned their communication strategies. Cooperation and collaboration among authorities are strong. The FPC receives substantial support from the Prudential Regulation Authority (PRA), the main bank and insurance supervisor that is now part of the BOE, and the Financial Conduct Authority (FCA), the independent agency that focuses on consumer protection, market integrity, and competition in the interests of consumers. The PRA and FCA provide data and information gleaned from their oversight activities to support the BOE's macroprudential surveillance and participate in regular reviews of the regulatory perimeter. They are members of the FPC and actively engage with it on policy decisions that may have macroprudential implications.

To keep the momentum and ensure its future effectiveness, it is important that Her Majesty's Treasury (HMT) reaffirms the primacy of the FPC's financial stability objective. As new post-Brexit and post-pandemic challenges emerge, HMT should carefully consider the financial stability tradeoffs in delivering new tasks to the FPC under its secondary objective. As borne out by international experience, proliferation of multiple policy objectives risks diluting the primary purpose and accountability of the agent tasked to promote financial stability. HMT introduced language in the 2020 remit letter clarifying that the FPC "should… routinely assess whether it can take actions" to support its secondary objective were doing so does not conflict with its primary objective. The FSAP recognizes that the FPC has not weakened its focus on its primary objective while the language in HMT's remit letters has changed. That said, the FSAP notes that the FPC's primary objective is sufficiently important and complex to require most of the committee's time and expertise.

The FPC has focused on bolstering banking sector resilience since its establishment, including through the early introduction of the countercyclical capital buffer (CCyB). The FPC has consistently taken a thoughtful approach to the design and implementation of the CCyB, including when it was one of the first macroprudential authorities to set a non-zero level of the CCyB in a

standard risk environment. In line with that, the FPC announced an increase in the CCyB to 0.5 percent in March 2016. Three months later, before the increase had taken effect, it lowered the CCyB to 0 percent, following the U.K. referendum to leave the European Union (EU). In December 2019, the FPC stated that the CCyB should be 2 percent in a standard risk environment and announced an increase to 2 percent which was to take effect 12 months hence. Once the pandemic hit, however, it lowered the CCyB to 0 percent. In December 2021, the FPC raised the CCyB to 1 percent, effective December 2022, judging appropriately that risks to U.K. financial stability had returned to around their pre-Covid levels. Uncertainty about the evolution of the pandemic and the economic outlook remain, however. If the U.K. economic recovery proceeds broadly in line with the MPC's central projections and the financial stability outlook does not change, the FPC would expect to increase the rate to 2 percent in the second quarter of 2022. This would be in line with the FPC policy of raising the CCyB in measured steps to the 2 percent standard risk environment level.

The FPC has taken an analysis-driven approach to its mortgage market recommendations, which date to 2014. Those recommendations include a limit on the flow of high loan-to-income (LTI) mortgages and an affordability stress test on interest rates. The FSAP team agrees with the FPC's judgment that these measures have prevented lenders from loosening lending standards, which would otherwise have led to an increase in the number of more highly indebted households. In December 2019, the FPC argued that the benefits outweigh the limited macroeconomic costs associated with its mortgage market measures and should therefore remain through the cycle.[1] On December 13, 2021, the FPC noted that the LTI flow limit is likely to play a stronger role than the affordability test in guarding against an increase in aggregate household indebtedness and the number of highly indebted householders when house prices rise rapidly. The FPC intends to consult on withdrawing its affordability stress test in the first half of 2022, noting that the LTI flow limit, alongside the FCA's Mortgage Conduct of Business framework—which requires lenders to take account of the effect of future interest rate rises—ought to deliver an appropriate level of resilience to the U.K. financial system, but in a simpler, more predictable, and more proportionate way. The FSAP notes that the removal of the FPC's affordability stress test at this juncture will require careful consideration. The mean LTI ratio has increased in recent months to a historical high, mostly driven by an increase in lending at LTI ratios below 4.5 times, which is the FPC's flow limit threshold, but above 4.0 times. At the same time, housing prices are rising fast, which threatens to further increase household indebtedness.

Since the last FSAP, the FPC has responded nimbly to evolving circumstances. In the mid-2010s it started to investigate risks from nonbank financial institutions (NBFIs), and devoted resources to systemic risks from climate change and the adoption of new financial technologies. These remain works in progress. The FPC has begun to shift its emphasis from the post-GFC banking-focused regulatory agenda to the risks posed by growing NBFIs and market-based finance. Since 2015, it has also published in-depth analyses of risks outside the banking sector in its *Financial Stability Reports* (FSRs). It has used its stress tests to investigate emerging risks, such as climate change risks.

[1] *Financial Policy Summary and Record of the Financial Policy Committee Meeting*, December 13, 2019, p. 5.

Overseen by the FPC, the BOE activated a framework to coordinate policy actions following the referendum on the United Kingdom leaving the EU. The BOE reacted swiftly to the crystallization of risks around the referendum by lowering the CCyB to 0 percent. It also put in place a crisis management framework to share information and improve coordination within the BOE. The BOE compared a "worst case" Brexit scenario to its Annual Cyclical Scenario (ACS) stress test to communicate its view of the resilience of the banking system.[2] Prior to the end of the Brexit transition period, the FPC analyzed potential financial sector risks and monitored the progress of key necessary actions to mitigate them in a checklist. Since the end of the transition period, the FPC has continued to monitor risks to its objectives that could arise from changes to the provision of cross-border financial services in the future.

Using this experience, the authorities reactivated crisis management frameworks at the onset of the pandemic. The BOE, PRA, and FCA shared dashboards, indicators, and analysis at a staff level as each agency considered policy responses. The authorities responded decisively to bolster banks' capital, with the FPC lowering the CCyB to zero and the PRC taking supporting measures. These included requests to major U.K. banks to suspend distributions, guidance on risk assessment and modelling to lower the potential procyclicality of loan loss provisioning and risk weights and expanded transitional arrangements for the implementation of expected credit loss (ECL) accounting. The FPC, PRC, and FCA also took actions to alleviate operational burdens for financial institutions. The FPC used stress tests to guide policy, including a reverse stress test in the summer of 2020 that supported the FPC's judgment that U.K. banks, in aggregate, were resilient to the unfolding stress.

Support measures through the pandemic have thus far yielded positive results, but data are still unclear about the building of any concerns underneath and macroprudential vigilance is the call of the hour as the support measures are removed in full. Since the exceptional measures were introduced, policy documents and statements have mostly been clear on the duration of temporary measures, and when and how they will be reviewed. Banks used a wide range of provisioning approaches during the COVID-19 crisis. Going forward, the FPC's focus should be on any unintended macrofinancial spillovers as the authorities phase out pandemic-related policy measures.

As suggested by the FSAP, in directing its efforts towards the systemic aspects of the NBFI channel, the FPC should take a leadership role in closing the data gaps that constrain effective systemic risk oversight. The onset of COVID-19 has delayed progress on the material data gaps mentioned in the last FSAP for flow-of-funds and the activities of NBFIs. The FPC has priorities to collect better data on asset management funds' leverage, liquidity, and risk. The BOE has mitigated data deficiencies in many areas by expanding its use of ad hoc information requests and surveys, market intelligence, and external data providers, with FCA support where relevant. The FSAP team noted progress in addressing gaps across the U.K. financial system, but the FSAP team also identified several critical gaps that remain. The FSAP recommends the FPC advocate for, and support, U.K. authority efforts to promote international cooperation, to ensure that the United

[2] *Financial Stability Report*, November 2018.

Kingdom and relevant cross border authorities have the data they need to monitor and evaluate NBFI risks. The FSAP also recommends that the FPC explain its approach to evaluating data availability for systemic risk oversight.

The FSAP recognizes that progress in collecting data and reforming policy toward NBFIs depends significantly on international cooperation. The BOE and FCA have been proactive in elevating NBFI issues at the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO). The global pandemic response sparked ad hoc information-sharing initiatives. But more coordination will be needed to enable the authorities to monitor investment funds and other cross-border nonbank financial firms. Events during this FSAP have clearly highlighted the risks associated with complex internationally active cross-border financial groups and their activities undertaken across multiple market segments and affecting different regulators. The recent failures of two globally active NBFIs should spur collaboration among authorities in data collection and joint systemic oversight arrangements.

The BOE and FCA have important voices in the international debate over liquidity risk in open-ended funds. The FSAP endorses the principles the FPC laid out in its December 2019 *FSR* and in July 2021. International regulators now broadly recognize the stability risks that open-ended investment funds pose when they invest in relatively illiquid assets. The FCA recently introduced a new authorized fund vehicle for highly illiquid assets and has proposed the introduction of a minimum notice period for investor redemptions for open-ended funds that invest in real estate. In March 2021, the FPC judged that the calculation and application of swing pricing could in principle be enhanced to better address the potential financial stability risks associated with first-mover advantage. Bank and FCA staff have proposed a possible framework for enhancing swing pricing. The FPC also recognized that a consistent and more realistic liquidity classification is an essential first step towards ensuring fund managers can manage liquidity mismatches. Bank and FCA staff have set out a possible framework for consistent and realistic liquidity classification of a fund's assets. However, they acknowledge that for this to be more effective, it would need to be applied on a global basis. Any further measures on bond funds, for example with respect to redemption notice periods, should also consider the liquidity of the underlying assets. Reform in this area will require international collaboration through the FSB and IOSCO.

As the potential systemic risks posed by market-based finance grow, the FCA's role in supporting systemic risk oversight through the FPC should continue to grow. The FCA has stepped up its collaboration with the BOE and support for the FPC since the last FSAP as the profile of NBFI risks has grown in the United Kingdom and globally. FCA experts are attuned to emerging systemic risks in their supervisory and surveillance work. The agency has also enhanced its monitoring of the risks of market disruption as part of its market integrity objective. It is very likely that the nonbank financial sectors under the FCA's regulatory oversight, including those that employ new technologies in financial services, will continue to grow, and this could potentially create new stability risks in the coming years. The FCA should continue to build its capacity to monitor and analyze the activities of NBFIs as the potential systemic risks grow, to identify and step-up monitoring of those firms and activities that have the potential to pose the greatest systemic risk.

Table 1. United Kingdom: Main Recommendations

	Recommendation	Priority	Agency
SEC 1	Reaffirm the primacy of the FPC's financial stability objective and consider how to prioritize the recommendations made to the FPC under its objectives as part of the remit process.	NT	HMT
	The FCA's role in supporting systemic risk monitoring, oversight, and risk analysis through the FPC should grow as the potential systemic risks posed by the sectors it regulates, including for NBFIs, continue to evolve; the FPC must boost its own coverage of these issues in its deliberations.	MT	FCA
	HMT should continue to be clear about the scope of expertise it seeks from the FPC's external members as a group.	MT	HMT
SEC 2	The FPC should continue to advocate and support efforts to promote international cooperation and to make sure that authorities have the data and information needed to monitor and assess risks, particularly with respect to NBFIs.	NT	FPC, FCA, with other agencies
	The FPC should explain its approach to evaluating data availability for systemic risk oversight.	MT	FPC
SEC 3	The FPC should continue to ensure that there are timely information sharing protocols with the PRA and FCA regarding measures in development that may have potential systemic financial stability implications or interact with macroprudential measures.	NT	FPC, PRC, FCA
	A removal of the FPC's affordability stress test, at this juncture, will require careful consideration, as mortgage indebtedness has been increasing as measured by mean LTI, a development which threatens to be amplified by the rise in housing prices.	NT	FPC
	The FPC and U.K. authorities should continue to take forward work internationally to strengthen the resilience of the open-ended fund sector in line with the FPC's 2019 principles on liquidity mismatch and the 2021 recommendations. An effective liquidity classification framework could play a role in determining appropriate redemption terms.	NT	FPC

NT = Near Term (now to one year); MT = Medium Term (within 1 to 3 years)

INTRODUCTION

1. This technical note analyzes the United Kingdom's systemic risk oversight and macroprudential policy framework and how it has evolved in practice since 2016. The analysis is part of the IMF's 2021 Financial Sector Assessment Program (FSAP) for the United Kingdom.[3] The analysis is based on a review of public materials; meetings with the Bank of England (BOE), Financial Conduct Authority (FCA), and Her Majesty's Treasury (HMT); requested non-public materials; and review of their joint responses to questionnaires.

2. The United Kingdom's macroprudential framework is largely unchanged since the last FSAP. The IMF assessed the macroprudential framework in the 2016 FSAP, guided by considerations identified in IMF staff notes on macroprudential policy.[4] The main conclusion in the 2016 FSAP was that the institutional setup had been well designed, with clear responsibilities and adequate powers. It noted, however, that the framework had a relative short period of operations at that point. The framework is largely unchanged since 2016. The Bank of England (BOE) and its Financial Policy Committee (FPC) remain at the center of financial stability monitoring and policy, working closely with the Prudential Regulation Committee (PRC), Financial Conduct Authority (FCA), and other authorities. Therefore, this note does not evaluate the design of the framework. Rather, it seeks to build on the 2016 FSAP and evaluate how the authorities have operationalized the framework. This includes understanding how these institutions identify, monitor, and take action to remove or reduce systemic risks and enhance the resilience of the U.K. financial system.

3. The first part of this note describes how the United Kingdom has operationalized its macroprudential framework. Since the last FSAP, the Financial Policy Committee (FPC) and the other U.K. authorities that share responsibility for systemic oversight have clarified their responsibilities, developed new mechanisms for cooperation, and fine-tuned their communication strategies. Our recommendations focus on HMT's remit letter to the FPC and propose that the FCA's already outstanding collaboration with the BOE and FPC must grow as the potential systemic risk increases in the markets it supervises.

4. The second section describes the FPC's framework for systemic risk monitoring and assessment. The U.K. authorities put in place an exemplary framework for systemic risk monitoring and assessment and have made sensible changes to that framework in response to emerging challenges. The FPC and PRC also collaborate closely on the annual bank stress test. Since 2015, the FPC has orchestrated a wide-ranging interagency process to identify and address risks beyond the banking sector. Our recommendations focus on data gaps and systemic risk monitoring capabilities. We note the lessons learned from the recent failures of two internationally active nonbank financial companies. We recommend that the FPC advocate for and support U.K. authority efforts to promote international cooperation to ensure authorities have the data they need to

[3] The main authors of this technical note are Sigga Benediktsdottir and Greg Feldberg, both IMF external experts.

[4] See IMF, "Staff Guidance Note on Macroprudential Policy" and "Staff Guidance Note on Macroprudential Policy—Detailed Guidance on Instruments," both published in November 2014.

monitor and assess financial stability, including data on NBFIs. It should explain its approach to evaluating data availability for systemic risk oversight.

5. **The third section describes the FPC's approach to mitigating systemic risk with macroprudential policy.** We focus on the countercyclical capital buffer, the FPC's mortgage market recommendations, the evolving approach to liquidity mismatch in open-ended investment funds, and the policy response to the pandemic. We recommend that the FPC continue to ensure that there are timely information-sharing protocols with the PRA and FCA regarding measures in development that may have potential systemic financial stability implications or interact with macroprudential measures. The FPC should be ready to take measures if developments in the residential mortgage market call for it. The FPC should continue to argue for the principles for liquidity mismatch that it first laid out in the December 2019 FSR and which it considered further as part of its 2021 review of liquidity management in open-ended funds.

OPERATIONALIZING THE FRAMEWORK

6. **Since the last FSAP, the Financial Policy Committee and the other U.K. authorities that share responsibility for systemic oversight have clarified their responsibilities, developed new mechanisms for cooperation, and fine-tuned their communication strategies**. The FPC has a clear mandate as the United Kingdom's macroprudential authority. The dynamic nature of systemic risk demands the macroprudential authority have a clear mandate, a broad scope of responsibilities, adequate powers and accountability, and mechanisms to request changes to its responsibilities as markets evolve. It also demands strong collaboration across agencies that have different primary objectives but share an interest in financial stability.[5] In the 2016 FSAP, the IMF concluded that the United Kingdom had set up a carefully thought out and well-designed institutional framework. Since then, the roles of the key authorities—the Bank of England, including the FPC and Prudential Regulation Authority (PRA); the Financial Conduct Authority (FCA); and Her Majesty's Treasury (HMT)—have matured. They have built strong teams that support systemic oversight and policymaking and developed new mechanisms for cooperating on areas of mutual interest. Importantly, the FCA has taken a higher profile in systemic risk oversight as financial stability concerns shift toward market-based finance. As the potential systemic risks posed by market-based finance grow, the FCA's role in supporting the FPC as the United Kingdom's macroprudential authority should continue to grow.

A. Mandates

7. **The FPC remains at the center of the Bank of England's macroprudential framework.** The committee has a primary objective to contribute to the achievement of the Bank of England's financial stability objective, primarily by identifying, monitoring, and taking action to reduce systemic risks, with a view to protecting and enhancing the resilience of the U.K. financial system. It also has a secondary objective, subject to the first objective, to support the Government's economic policy, as defined by the Chancellor of the Exchequer in an annual remit letter to the FPC.

[5] This discussion is based in part on the principles for effective macroprudential policy design described in IMF 2013, IMF 2014, and GAO 2021.

The committee consists of six BOE members (the Governor, four Deputy Governors, and the Executive Director for Financial Stability Strategy and Risk); the Chief Executive Officer of the FCA; five external members appointed by the Chancellor; and a non-voting member from HM Treasury.[6] External members offer independent views and broad international experience in financial services, regulation, and central banking.[7]

8. **The FPC reviews the Bank's financial stability strategy on behalf of the Bank's Court of Directors every three years.** The FPC substantially revised the language in the strategy in 2017. The three basic elements of the current strategy are: to establish a rigorous baseline of resilience in the financial system; to ensure that level of resilience adapts to the nature of potential shocks; and to enable the system to absorb shock so it can continue to support the economy. The 2017 strategy also emphasizes that, as a leading internationally active financial center, the United Kingdom is exposed to shocks from abroad, and its domestic standards of resilience must reflect those risks. Moreover, the strategy notes that actions of the U.K. authorities contribute to both domestic and international financial stability. "The United Kingdom's institutions and markets must be a source of strength for the global system and able to be relied on by others." The FPC and Court did not propose any revisions to the strategy in its 2020 review. FPC noted that resources were appropriately focused on the disruption resulting from COVID-19 at the time. The FPC and Court agreed that there would be an opportunity to conduct a further review which would benefit from the reflection on and incorporation of any lessons from the period of disruption from COVID-19.

9. **The Prudential Regulation Authority (PRA)'s mandate is aligned with the BOE's financial stability objective.** Parliament in 2016 merged the PRA into the Bank and reconstituted the PRA Board as the Prudential Regulation Committee (PRC), effective in 2017. The PRC has the responsibility within the BOE for exercising the Bank's function as the PRA.[8] The general objective of the PRC, as set forth in Section 2B of the Financial Services and Markets Act 2000 (FSMA), is to promote the safety and soundness of PRA-authorized firms. It is required to consider financial stability effects of its microprudential supervision of firms (2B (3) FSMA). The PRC and the PRA will generally look to the FPC for guidance (in the absence of a recommendation or direction) on the nature and scale of financial stability risks that it should consider. The PRC makes rules under FSMA and determines the Bank's prudential regulation strategy. It has delegated to the BOE's Deputy Governor for Prudential Regulation the day-to-day management of the Bank's functions as the PRA and the day-to-day implementation of the prudential regulation strategy.

[6] The Bank of England and Financial Services Act 2016 elevated the FPC and PRC from subcommittees of the Court to policy committees on par with the Monetary Policy Committee. The same Act also expanded the FPC from 11 to 13 members, adding the Deputy Governor for Markets and Banking and a fifth external member.

[7] External members stressed the value of their role in challenging groupthink on the committee in their appearances before the Treasury Select Committee. For example, see Anil Kashyap's reappointment hearing in June 2019 and Elisabeth Stheeman's in February 2018.

[8] The PRC now has 11 members: the Governor, four Deputy Governors, the Chief Executive of the FCA, and five members appointed by the Chancellor. Three Deputy Governors are members of the PRC under the Bank of England and Financial Services Act 2016. In addition, the Governor appoints one member with the approval of the Chancellor; currently that is the Deputy Governor of Monetary Policy.

10. The Financial Conduct Authority (FCA) makes important contributions to financial stability work through its CEO's voting role on the FPC and through advancement of its market integrity objective. The FCA, established in 2013, is the conduct regulator for nearly 51,000 financial services firms and financial markets in the United Kingdom, and the prudential supervisor for 49,000 firms (setting specific standards for 18,000 firms), including asset managers, trading venues, and certain market infrastructure providers.[9] Since January 1, 2021, the FCA also supervises credit rating agencies and trade repositories. The FCA's strategic objective is to ensure that the relevant markets function well. The FCA's operational objectives are to protect and enhance the integrity of the U.K. financial system, to promote effective competition in the interests of consumers, and to secure an appropriate degree of protection for consumers. The FCA also oversees primary and secondary market activity. FCA officials see their market integrity objective as corresponding closely with financial stability. The FCA does not have its own financial stability mandate, but the FCA plays an important role by virtue of its membership and senior representation on the FPC, and through advancing its integrity objective. The U.K. law and FCA rules that implemented AIFMD also require the FCA to monitor the potential financial stability risks that hedge funds and other alternative investment funds may pose. While the FSAP did not conduct a comprehensive review of compliance with the IOSCO principles for securities regulators, the FSAP team found that the FCA takes seriously its role in support of the financial stability mission of the central bank, following IOSCO Principle 6.[10]

11. Her Majesty's Treasury (HMT) plays important roles in financial stability policy and crisis management. HMT's interest in systemic risk is motivated by its objective to support a stable macroeconomic environment and sustainable public finances (see HMT's Outcome Delivery Plan 2021–2022). HMT determines the structure of the macroprudential oversight regime, including which directional powers are granted to the FPC, subject to approval from the U.K. Parliament. HMT is currently consulting on the Future Regulatory Framework Review, a broad-based effort to reconsider the financial regulatory architecture. HMT has stated it is not proposing to alter the macroprudential elements of the United Kingdom's regulatory framework under the review. HMT officials told the IMF that they see HMT's nonvoting role on the FPC as an important means by which to feed in HMT's views on the FPC's pursuit of its primary and secondary objectives. HMT also performs an important convening function during crises such as the 2020 pandemic response. HMT owns the Authorities' Response Framework (ARF), which provides a means through which U.K. financial authorities coordinate their response to crises and share information, although this is jointly managed with the Bank and FCA.

12. HMT has increased the number of recommendations it makes to the FPC in recent years, including under the FPC's "secondary objective." HMT uses the Chancellor's annual remit and recommendations letter to make recommendations to the FPC on the execution of both its primary objective (financial stability) and secondary objective (supporting the economic policy of

[9] The FCA Board includes the Chairman, the FCA's chief executive, and the Bank's Deputy Governor for Prudential Regulation. HMT nominates other board members, two in collaboration with the Department for Business, Energy and Industrial Strategy. The Board currently has nine members in total.

[10] IOSCO Principle 6: "The Regulator should have or contribute to a process to identify, monitor, mitigate and manage systemic risk, appropriate to its mandate."

the government).[11] Since 2016, HMT's remit letters have asked the FPC to consider two government priorities under its secondary objective subject to the achievement of its primary objective: (1) promoting the availability of "productive finance" to the U.K. economy and (2) supporting the government's policy towards the financial services industry, including considering competitiveness, and competition and innovation. In 2020, HMT added climate change to the list of areas the FPC should consider as relevant to both its primary and its secondary objectives. In 2021, HMT asked the FPC to also consider access of first-time buyers to the housing market and environmental sustainability as part of its existing recommendation relating to the government's policy towards the financial services industry.

13. HMT amended language in its remit letter in 2020 to clarify that the FPC should "routinely assess whether it can take actions" to support the secondary objective, where doing so does not conflict with its primary objective. In its 2020 remit and recommendation letter HMT amended its annual recommendation concerning the interaction of the primary and secondary objectives to clarify that the FPC should routinely assess whether it can take actions to support the government's economic objectives in a way that will not conflict with the Committee's primary objective.[12]

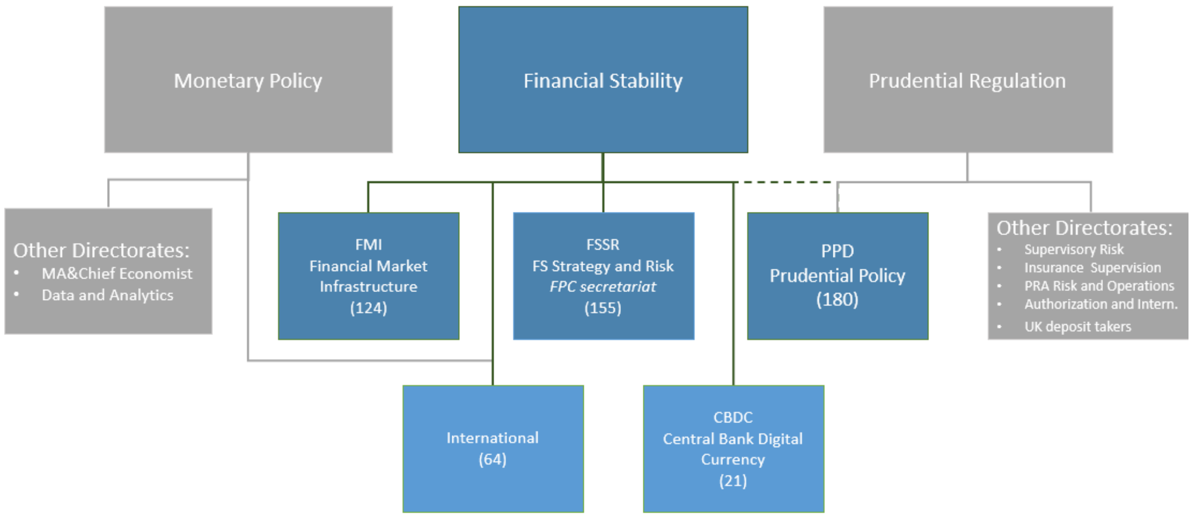
14. The FPC takes HMT's recommendations into account in its decision-making process and sometimes delivers specific pieces of work. The FPC is not obligated to act on HMT recommendations but is required to respond and notify in writing whether it has complied or intends to comply, or give reasons for not complying.[13] However, the process is collaborative, with drafts of letters shared in advance. The FPC has generally followed recommendations and, on occasion, delivered specific pieces of work. Most recently, the FPC published its report, *Assessing the Resilience of Market-Based Finance*, in July 2021, in response to a request in HMT's 2020 letter. The FPC also has a broad, ongoing work program to promote the availability of productive finance to the economy, responding to a longstanding HMT recommendation. The FPC has noted that this work is important for both financial stability and long-term growth. The Bank is undertaking its first climate stress test, consistent with HMT's recommendation that the FPC should consider climate change as relevant to its primary objective.

[11] HMT consults informally with the Bank prior to issuing its remit letters

[12] The relevant passage of the letter read: "In other circumstances [in which the FPC's primary and second objectives are neither complementary nor in obvious conflict], the Committee can exercise its functions to support one of its objectives largely independently of any effect on the other. The Committee should therefore routinely assess whether it can take actions to support the government's economic objectives in a way that will not conflict with the Committee's primary objective. When the Committee judges these conditions to be met it should seek to act to support the government's economic objectives in a way that is consistent with the recommendations set out in this remit, including using its policy tools." Rishi Sunak, *Letter to Mark Carney*, March 11, 2020

[13] Bank of England Act 1998, Section 9E.

Figure 1. United Kingdom: Bank of England Organization for Financial Stability



Source: Bank of England.

B. Organization

15. The authorities involved in financial stability oversight and policy have built organizations suitable for those responsibilities, led by the Bank of England. The Bank's Deputy Governor for Financial Stability manages four groups with more than 350 full-time staff (Figure 1). The Financial Stability Strategy and Risk (FSSR) directorate, with a staff of 155 in 2021, oversees financial stability monitoring and houses the secretariat for the FPC. Other directorates cover financial market infrastructure (124 staff), central bank digital currencies (21), and international policy (64), which is co-managed with the Deputy Governor for Monetary Policy. The staff sizes of the FSSR and international unit have been constant over the past three years; FMI has grown steadily, and CBDC launched in 2021. Many other areas of the Bank also contribute to FPC materials. Most prominently, the PRA supports macroprudential policy through the Prudential Policy Directorate (PPD). The PPD is responsible for designing policy, negotiating internationally, and implementing effective prudential regulation to remove or reduce systemic risks, promote the safety and soundness of PRA-regulated firms, and ensure appropriate protection for insurance policyholders. PPD supports both the Prudential Regulation Committee and Financial Policy Committee. It has a staff of roughly 180, with units focused on the prudential policy framework; banking capital policy; governance, accounting, reporting, and data; insurance policy; and strategy, policy, and approach.

16. HMT also has a well-staffed Financial Stability Group that leads its financial stability work and regularly briefs management on key risks. A senior HMT official serves as HMT's nonvoting member on the FPC. The group has approximately 80 staff in four teams. The largest is Financial Stability Strategy and Analysis (FSSA), which conducts its own independent analysis and provides advice on medium-term financial stability risks, including risks relating to Brexit and future financial regulations. FSSA supports senior HMT officials (including HMT's non-voting member on

the FPC), oversees the appointment of external members to the FPC, and manages HMT's international engagement with the Financial Stability Board.[14] Other teams in the Financial Stability Group cover Banking Assets and Resolution Strategy, Resilience and Resolution, and a team providing the secretariat of the independent Ring-Fencing and Proprietary Trading Review. The Financial Stability Group also works closely with the separate Financial Services Group, which develops a broad range of policies for the financial sector, and HMT's fiscal area, which is responsible for managing the HMT balance sheet.

17. The FCA has dedicated resources in its Economics Department to work with the FPC. The Wholesale and Financial Stability Team, which reports to the Chief Economist, supports the role of the FCA CEO as a voting FPC member.[15] At the time of the FSAP mission, the team had 12 members, including six economists who focused on financial stability work. The team provides the FPC with briefings and analysis on financial stability issues raised by the FCA or FPC, coordinating the analysis and input of supervisors, policy experts, economists, and other subject matter experts from across the FCA and often working closely with staff from the BOE. Many areas of the FCA contribute to FPC materials. The team also participates in FSB groups and IOSCO committees.

C. Powers

18. The FPC has broad-ranging powers of recommendation. Under the Bank of England Act 1998, as amended in 2012, the FPC can make policy recommendations to any party, including the FCA, PRA, and HMT. In the case of the PRA and FCA, the FPC can make its recommendations on a comply-or-explain basis. There have been no significant changes in the FPC's powers since the 2016 FSAP.[16]

19. The FPC also has specific direction powers that HMT has granted it since 2013. The FPC may give directions to the PRA or FCA, who must comply as soon as reasonably practicable, to implement macroprudential measures that the U.K. Parliament has approved in advance through secondary legislation under the Bank of England Act 1998. The FPC has said that direction powers are valuable in circumstances in which actions are required urgently or where the systemic priorities of the macroprudential authority need to take precedence over microprudential concerns. Prior to the last FSAP, HMT, with approval from the U.K. Parliament, granted the FPC the power to set the countercyclical capital buffer; sectoral capital requirements for U.K. firms; the leverage ratio; and loan-to-value and debt-to-income limits for U.K. mortgages on owner-occupied properties. In

[14] FSSA also shares the role of secretariat of HMT's Economic Risks Group. The Economic Risks Group is chaired by the Director of the Economics Group with a co-owner, the Director of the Financial Stability Group. It typically meets quarterly but met more frequently during the pandemic crisis. Its role is to formally brief HMT's Executive Management Board on key financial stability risks.

[15] The FCA merged the two parts of the team in recognition of the synergies and the extensive financial stability work that the wholesale markets experts were conducting.

[16] The Financial Services Act 2021 and associated secondary legislation resulted in minor consequential amendments to the FPC's powers of direction, including to specify certain FPC powers of direction could be exercised in respect of bank holding companies rather than banks.

2017, the U.K. Parliament also approved granting the FPC the power to set loan-to-value and debt-to-income limits for U.K. mortgages on buy-to-let properties.

20. The BOE and PRA have the power to acquire additional information for financial stability analysis. The BOE may direct the FCA to provide information that they have accessed through their supervision of financial firms, or to acquire new information that could help the BOE assess financial stability risks. The PRA also has the duty to collect information relevant to the safety and soundness of individual institutions or the stability of the broader financial system. The PRA's so-called "financial stability information power" allows it to demand additional information that could support financial stability analysis even from firms it does not supervise, such as fund managers and third-party service providers. The BOE and PRA have not felt it necessary to use these powers to date.

D. Interagency Cooperation

21. The agencies have developed informal mechanisms to foster coordination and cooperation, complementing formal institutional mechanisms. The FSAP noted effective collaboration and almost seamless data-sharing among departments within the Bank and across agencies, supporting macroprudential oversight and macroprudential policy development. Formally, coordination among the FPC, PRC, and FCA Board is promoted by the alignment of the microprudential regulators' mandates with the Bank of England's financial stability objective, and the duty of the FPC to as far as possible seek to avoid exercising its functions in a way that would prejudice the advancement of the microprudential regulators' objectives. Overlapping memberships on policy committees also facilitate information-sharing, providing opportunities for the heads of financial stability, prudential regulation, and the FCA to have a voice on issues that cut across microprudential and macroprudential concerns and to spread awareness of emerging policies and issues.[17] In addition:

- The FPC regularly seeks the input of the PRC or FCA before making policy decisions
- External PRC members may attend certain briefings that staff have arranged for FPC members.[18]
- Secretariats typically share FPC and PRC briefing materials with each other's members, where relevant, while remaining careful to avoid the release of firm-specific information outside the PRA.
- Quarterly FPC rounds, which comprise several meetings, are joint efforts involving staff from the FSSR, Markets, International, and the PPD, as well as other areas of the BOE, and the FCA.
- FSSR collaborates closely with staff from the PRA and FCA in ongoing working groups on financial stability issues. FSSR-PRA collaborations include working groups on operational

[17] Four BOE Deputy Governors—for Financial Stability, Prudential Regulation, Markets and Banking, and Monetary Policy—sit on both the FPC and PRC. The Deputy Governor for Prudential Regulation also sits on the FCA Board, while the CEO of the FCA sits on both the FPC and the PRC. The BOE Governor chairs the FPC, PRC, and MPC.

[18] There is no comparable PRC pre-meeting briefing process that FPC members could attend. Also, there are no comparable protocols between the external FCA Board members and the Bank's statutory committees.

resilience, the capital stack, and Covid policy. FSSR-FCA collaborations include open-ended investment funds, fast markets, and derivatives.

- Although the frequency of joint FPC-PRC meetings has declined, the two committees continue to meet at least once a year to discuss the annual banking stress test that they conduct jointly.
- The FCA have brought Bank of England staff in on secondment for extended periods, with temporary security clearance to analyze supervisory data on hedge funds, among other topics. FCA staff have also been seconded to the Bank of England to share their expertise.

22. The joint reporting of the Prudential Policy Directorate (PPD) to the Deputy Governor for Prudential Regulation and the Deputy Governor for Financial Stability also promotes collaboration and information-sharing between the committees. For topics that concern both committees, FSSR and PPD staff work together and produce joint notes. Typically, FSSR staff are responsible for risk assessment and analysis and PPD staff are responsible for policy design. Decisions on capital and leverage standards are to date the most common areas on which the two teams collaborate and jointly report. Policies are ultimately allocated to the Deputy Governor for Financial Stability or Prudential Regulation based on their statutory responsibilities.

23. The BOE created a Policy Coordination Committee (PCC) in May 2020 to better address material policy issues that cut across Bank divisions.[19] The PCC is a subcommittee of the Bank's Executive Committee. Its purpose is to coordinate approaches to policy issues that span different areas of the bank before they are discussed at the statutory committees. It normally meets weekly and includes all BOE Deputy Governors and Executive Directors as needed.

E. Governance

24. Accountability to the public is essential in systemic risk oversight because of the diverse parties who macroprudential policy can affect. The 2016 FSAP found that the U.K. had matched the BOE's new responsibilities with stronger accountability arrangements. Those arrangements include internal oversight mechanisms, legislative review, and commitments by the FPC to be transparent with the public about its objectives, analysis, and decisions. They remain, with some minor modification. The Chancellor and the Governor meet semi-annually following the publication of the Financial Stability Report to discuss its main findings and other matters related to financial stability. The U.K. Parliament's Treasury Select Committee holds semi-annual hearings also in conjunction with the publication of the FSRs. Typically, the Bank's Governor, Deputy Governor for Financial Stability, and two FPC external members testify. FPC members also testify prior to their appointment. The Bank's triannual Financial Stability Strategy and the annual exchange of letters between Treasury and the FPC, described above, also provide important accountability mechanisms for the FPC's high-level objectives.

[19] The PCC was created when Governor Andrew Bailey separated the former Governance Committee into the PCC, for policy decisions, and two other committees for human resources and operational decisions.

25. The Independent Evaluation Office (IEO), which the Bank established in 2014 to strengthen the Court's oversight of the Bank's activities, has not directly evaluated the FPC's role or financial stability oversight. However, many of its reviews have covered programs relevant to financial stability. The reviews to date include the PRA's approach to its secondary competition objective (2015–16); the Bank's forecasting performance (2015–16); financial market infrastructures supervision (February 2017); the PRA's oversight of insurance (March 2017); the sterling liquidity framework (January 2018); resolution arrangements (June 2018); the framework for bank stress testing (April 2019); the Bank's research function (December 2019); and quantitative easing (January 2021).

26. Court's reviews have focused on committee processes. Parliament in 2016 abolished the Oversight Committee, a statutory subcommittee of the Bank's Court that had exercised some of its oversight of the Bank and reverted those responsibilities to Court itself. Since 2016, Court has performed the role of oversight through regular attendance as observers at meetings, an annual review process, and surveys of FPC members. Between 2016 and 2019, the Bank of England's annual reports briefly described the results of those reviews. In response to Court surveys of FPC external members, for example, the Bank has made changes to the routine reporting and management of FPC agendas, revised external publications, and improved internal IT, as described in the 2019 report.

27. The semi-annual Financial Stability Report is the FPC's main public output. The law requires the FPC to include in the FSR its views of financial stability, recent developments, potential risks, and outlook. The FPC must report, among other things, on any new recommendations and directions and any progress on previous ones. Since 2015, in response to FPC input, each report has provided separate analyses of the main risks to financial stability and the system's resilience to shocks. The BOE also publishes data used in each FSR on its website. Records of quarterly FPC meetings provide further depth to the discussions of systemic risk and policy, including those that appear in the semi-annual FSRs. Prior to the pandemic crisis, every other FSR (typically at year-end) included the results of the annual bank solvency stress test and an annual assessment of risks beyond the banking sector. The 2018 and 2019 FSRs provided bank-specific stress test results, previously published in a separate document. The FSR has also regularly featured boxes highlighting specific systemic risks or policy issues. Until December 2020, when the transition period with the EU ended, the FSR included a checklist monitoring actions both sides needed to take to prevent the U.K. exit from disrupting financial services for households and businesses if no arrangements were put in place for cross-border trade in financial services. The FSR also covered the resilience of the banking system to a "worst case" Brexit economic scenario, for example in the November 2018 FSR.

F. FPC Process

28. The FPC assesses the outlook for financial stability at least quarterly in comprehensive meeting rounds that span at least four weeks. In each cycle, FSSR staff prepare a round plan with input from BOE, FCA, and HMT subject matter experts. The plan is then signed off by the Governor and sent to Committee members and relevant staff. FSSR and other areas of the Bank conduct internal planning and briefings based on the round plan. Teams working on different topics check in and share their analysis across the bank, both at the staff level and through the Policy Coordination Committee (PCC). The Deputy Governor for Financial Stability meets bilaterally with other subject matter experts to discuss the topics of the round. Other Deputy Governors who are members of the FPC also can meet bilaterally with subject matter experts for briefing. External FPC members receive separate pre-round briefings on a range of topics.[20] The FPC, as a whole, then attends a "Briefing" meeting, where it is briefed on and discusses the latest data and analysis on key financial stability risks and analysis on the resilience of the financial system; a "Roundtable" meeting where it discusses the implications for its CCyB decision; and several "Issues" meetings, where it receives presentations and discusses staff deep dives into several topics. Experts in these meetings could come from the BOE, FCA, or HMT, depending on the topic. Joint meetings with the MPC or PRC are conducted where needed (Figure 2).

29. The Policy Meeting, where the FPC makes decisions, is guided by an annotated agenda drafted by FSSR staff. The agenda contains a high-level overview of key material, including key judgments and data that will inform the Committee's decisions. It is intended to prompt rather than constrain discussion. Each agenda item starts with the proposed key judgments and can be followed by additional questions for discussion and, if relevant, the draft text for the record. Links are provided to essential readings and background papers, which have usually already been discussed or reviewed by the Committee in the earlier Issues meetings. The annotated agenda is intended to reflect the emerging views of FPC members gleaned through earlier meetings in the round. Issues that remain open are highlighted with square brackets, indicating the need to discuss further.

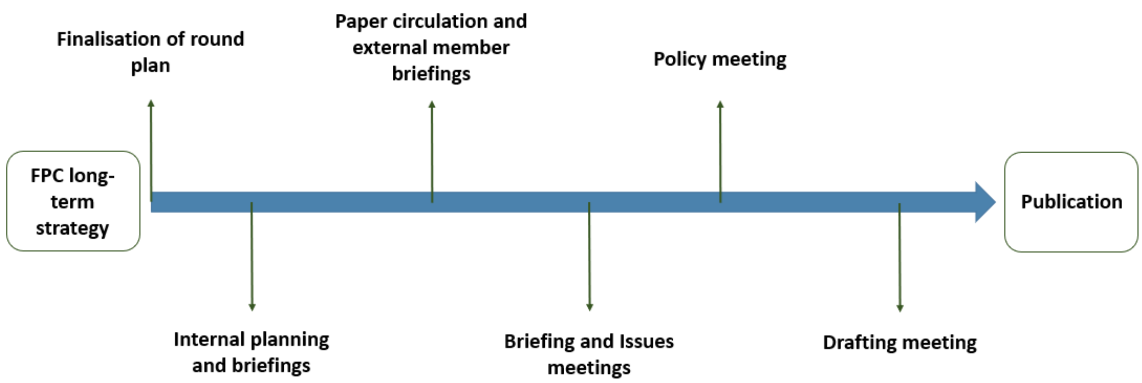
30. The Financial Policy Committee (FPC) communicates its decisions and judgments in its Financial Policy Summary and Records of meetings on a quarterly basis. While all the FPC's judgments and decisions are determined at the Policy meeting, the FPC finalizes the text of all its main communications in the final meeting of the round, the Drafting Meeting. At the Drafting Meeting, the FPC reviews the drafting of the Financial Policy Summary and FPC record. When there is an FSR, it embodies the FPC's main decisions and judgments where relevant.

31. The FPC has introduced a "layered" approach to communications to tailor the FPC's messages to varied audiences. The 2016 FSAP noted a low level of public understanding of the FPC's roles and responsibilities. The FPC's communication strategy now targets a variety of audiences. Under the new strategy, Layer 1 communications aim to reassure the public—for example, through social media posts—that the authorities have identified potential risks and taken

[20] Each external member has an advisor they meet regularly with throughout the process. The external member can request additional briefings that the advisor will arrange.

action to ensure the financial system is resilient. Layer 2 provides visual explanations, and includes non-technical, more accessible language focusing on and generally aimed at politicians, journalists, and interested members of the public. Layer 3 is the full FSR and is understood to target a more technical audience of market participants, policymakers, and academics.

Figure 2. United Kingdom: Semi-Annual Financial Stability Report Publication Process



Source: BOE Staff Presentation.

G. Recommendations

32. HMT should reaffirm the primacy of the FPC's financial stability objective and consider how to prioritize the recommendations made to the FPC under its objectives as part of the remit process. Recommendations relating to its secondary objective include supporting the government's economic policy in relation to facilitating the supply of finance for productive investment and supporting the government's overall strategy for financial services. That strategy has covered competition and innovation, openness and competitiveness, environmental sustainability and climate change, and housing (supporting first time buyers). The FSAP team, as noted, found that the FPC has provided outstanding and independent leadership on diverse financial stability issues during the review period. Nonetheless, an increase in the number of issues HMT recommends the FPC consider, where relevant, under its secondary objective could risk diluting the committee's focus on financial stability and burdening committee members with tasks which may lie outside their area of expertise. While the existing institutional architecture provides mechanisms to guard against these risks, HMT should still consider if some recommendations could be better prioritized and if alternative institutional structures may be better placed to respond to some of these challenges, allowing the FPC to maintain its focus on financial stability.

33. Language introduced in the 2020 remit and recommendations letter—suggesting the FPC may "routinely assess whether it can take actions" to support its secondary objective, where doing so does not conflict with its primary objective—represented a change in focus. The FSAP team believes that the FPC's overwhelming focus should be on its primary objective and that it should remain beyond the scope of the FPC to spend a significant amount of its time

devising actions to support the economic policy of the government. The FPC's primary objective is sufficiently important and complex to require most of the committee's time and expertise.

34. The FCA's role in supporting systemic risk monitoring, oversight, and risk analysis through the FPC should grow as the potential systemic risks posed by NBFIs, market-based finance, private markets, and core financial markets continue to evolve; the FPC must boost its own coverage of these issues in its deliberations. The FCA has an important role to play in supporting the FPC in its identification and analysis of potential systemic risks, and it should continue to devote focus and resources to this task commensurate with the risks identified, working closely with the PRA and HMT.

35. HMT should continue to be clear about the scope of expertise it seeks from the FPC's external members as a group. Since 2011, the membership has always included a former senior central banker from overseas and one or more financial experts from investment banks. Other members have come from regulatory agencies and academia. The committee has had few members with significant commercial banking backgrounds and none with an insurance background. HMT officials told the IMF that the selection process focuses on both technical expertise and the perspectives a candidate might bring to financial stability discussions. Further public guidance about the targeted mix of skills and perspectives could be useful.

SYSTEMIC RISK MONITORING AND ASSESSMENT

36. The U.K. authorities put in place an exemplary framework for systemic risk monitoring and assessment and have made sensible changes to that framework in response to emerging challenges. A systemic risk framework should start with key sources of fragility and an understanding of the potential transmission channels that could aggravate financial system stress. It should cover all potential sources of stress—from banks, nonbank financial institutions, markets, and relevant nonfinancial entities—and have mechanisms for regular review of those sources as markets evolve. Multiple sources should inform the ongoing risk identification process, and authorities should use robust quantitative and qualitative techniques—for example, risk dashboards and stress tests—to evaluate potential risks using sensible criteria. There should be a process for identifying and addressing gaps and other weaknesses in data. The FPC leads an interagency process that meets these requirements well. It has also responded nimbly to changing circumstances: shifting in the mid-2010s to address risks from nonbank financial institutions; dedicating resources to monitor risks from Brexit, climate change, and new technologies; and switching to crisis mode at the dawn of the pandemic.

A. Systemic Risk Monitoring

37. The FPC receives broad support for its systemic risk monitoring activities from FSSR, PRA, other parts of the BOE, and FCA. FSSR directs financial stability risk monitoring and analysis. There is a frequent flow of information between FSSR analysts and the microprudential authorities

in the PRA and FCA, on a continuous basis as risks accumulate and threaten to materialize.[21] Groups, usually manned with experts in the field from around the Bank and FCA, analyze both continual and emerging threats to financial stability. This includes the work within the FSSR that supports the FPC's quarterly meeting cycle, as described above.

38. The FPC publishes quarterly the core indicators that inform its countercyclical macroprudential policies. The FPC most recently updated the indicators it uses to monitor bank resilience for the purpose of setting the countercyclical capital buffer (CCyB), leverage requirements, and sectoral capital requirements under its direction powers in November 2021. For the CCyB, the 17 indicators cover bank balance-sheet stretch, nonbank balance sheet stretch, and conditions and terms in markets. The FPC also publishes the core indicators it monitors in determining its housing market policies. These include loan-to-income, loan-to-value, and debt-to-income ratios; household credit growth; housing transactions; and housing prices. In addition to the core indicators tied to specific policies, the FPC uses various indicators and dashboards to monitor financial conditions. For example, a risk table presented at each policy meeting displays key data on credit costs, flows, and conditions across the residential housing, commercial real estate, and corporate sectors. The FPC also regularly reviews the costs of long-term debt for U.K. banks to track banks' ability to refinance debt or obtain new funding.

39. The FPC updates its monitoring tools as needed and has focused increasingly on leverage and liquidity risks in NBFIs and market-based finance. In response to the pandemic lockdown, the FPC developed new indicators to monitor the rapidly evolving financial and economic impacts (described further below). It has also started to develop indicators to monitor leverage and liquidity risks in the NBFI and market-based activities that proved vulnerable during the "dash-for-cash" episode in March 2020. As noted in the next section, the available data could be improved for more optimal assessment of leverage and liquidity risks outside the banking sector.

40. BOE staff have developed a GDP-at-risk model for the FPC and is experimenting with machine-learning techniques to predict financial stress. GDP-at-risk is a summary statistic that allows analysts to compare potential tail risks to the economy in common units.[22] As tail events are rare, it is an advantage to use a GDP-at-risk model, which uses the whole distribution. Analysts typically present GDP-at-risk as the worst annual average GDP growth that could occur in 5 percent of outcomes. They can then decompose that result to identify indicators—such as domestic and foreign financial conditions and credit growth—that may deserve more weight in the FPC's policy considerations, as described in a 2021 paper. BOE staff have used GDP-at-risk to evaluate the impacts of FPC policies. For example, BOE staff estimated that GDP would have been up to 1.5 percent lower in the absence of the FPC's mortgage recommendations (December 2019 FSR, p. 58). BOE staff are also experimenting with machine-learning models. In a 2020 paper, BOE staff

[21] Under various international standards, banking and securities regulators are expected to contribute to the analysis of systemic risk and periodically review the regulatory perimeter (for example, see IOSCO Principles 6 and 7, and Basel Core Principle 8).

[22] Former BOE Governor Mark Carney described GDP-at-risk here. BOE staff found that GDP-at-risk for 16 advanced economies worsened in the runup to the global financial crisis, and in a 2019 paper found that applying a countercyclical capital buffer of 2.5 percent would have mitigated up to 20 percent of that impact.

showed that most machine-learning models they tested outperformed standard regression models in forecasting financial crises.

41. The BOE regularly conducts surveys and interviews to assess financial and economic conditions. For example, the Systemic Risk Survey, conducted biannually since 2009, queries financial market participants about the biggest risks they see to their businesses and to the U.K. financial system as a whole. The BOE suspended the survey during the pandemic crisis and resumed in October 2021. The BOE also has a biannual household survey, conducted by a private consultancy firm, which gathers data on household finances; and a decision maker survey of chief financial officers at U.K. businesses. More informally, the executive director of the FSSR meets quarterly with the chief risk officers of major banks to gather market intelligence. The BOE also has a dozen field offices across the U.K. where its agents meet hundreds of community and business contacts to gather insights that are presented to the FPC.

42. The FCA's oversight of firms and markets gives it unique access to data, information, and insights about potential emerging systemic risks in NBFIs. FCA staff engage continuously with financial market participants in the course of their supervisory work, which focuses on protecting consumers, protecting effective competition in the interests of consumers, and enhancing market integrity, and more formally in the policymaking process. FCA staff are attuned to emerging systemic risks and regularly share their market insights and analysis with BOE staff (Box 1).

43. The FCA's portfolio approach promotes cross-firm analysis and risk identification. Since 2016, the FCA has distinguished between "fixed" firms, which pose the greatest risks to FCA objectives and are supervised individually, and "flexible" firms, which are supervised thematically.[23] In 2018, the FCA introduced a portfolio approach to allow it to be more proactive in identifying and responding to emerging risks across 44 portfolios (as at the end of December 2021).[24] It designates portfolios as red, amber, or green based on the inherent level of harm they could pose consumers or the broader market. The FCA analyzes each portfolio and determines a strategy focusing on firms and issues that pose the greatest risk. The FCA also overhauled its risk dashboard to focus on portfolio-level risks.

44. The portfolio approach can incorporate systemic risks, as illustrated by the FCA's strategy toward alternative assets. The FCA has separate asset-management portfolios for retail-oriented firms and alternatives firms, which include hedge funds and private equity funds. In its alternatives portfolio supervision strategy (published in January 2020), the FCA identified market integrity and disruption as a supervisory priority. Within this, and in the context of investment risk, the FCA explained that use of leverage and illiquid investments presents risks to firms' portfolios and can also create risk for other market participants and the wider markets. The letter described the FCA's expectation of firms and noted that the FCA may choose to undertake in-depth assessments of firms' controls where appropriate. The FCA's alternatives team has engaged, and

[23] See the IMF's technical note in the 2016 FSAP, *Fund Management and Equity Trading Platforms: Regulation, Supervision, and Systemic Risk Monitoring*.

[24] See *FCA Mission: Approach to Supervision*, April 2019.

continues to engage, with some of the larger alternative funds where assets under management or derivatives exposure is significant. The team expects to address the wider peer group as part of the 2022/23 supervision cycle to ascertain whether risks in the sector are being identified and mitigated as appropriate.

45. Risks in the nonbank financial sector and cross-border risks are prominent going forward. Evaluating systemic risk in NBFIs remains a challenge due to the global nature of the sector and remaining data gaps. The FPC has acknowledged these risks in its systemic risk monitoring for many years. The Bank of England recently published a report, *Assessing the Resilience of Market-Based Finance*, under the FPC's guidance, which identified three issues that need to be addressed to increase the resilience of NBFI financial intermediation: reducing the demand from the nonbank financial system for liquidity in stress, ensuring the resilience of the supply of liquidity in stress, and potential additional central bank liquidity backstops for market functioning. As major policy initiatives in these areas require international agreement, the BOE and FCA must continue to provide analysis and leadership at the FSB, IOSCO, and other fora.

Box 1. The FCA's Contributions to Systemic Risk Monitoring

The FCA, as the premier regulator of NBFIs, makes important contributions to the U.K. authorities' systemic risk monitoring. The FCA listed more than 50 presentations of papers to the FPC in the FSAP review period, mostly in collaboration with BOE colleagues. The FCA also provided multiple examples in which its supervisors and other experts identified potential systemic risks and raised them to the FPC. For example:

- In supervising Principal Trading Firms, FCA supervisors noted in 2017 that some of these firms were key liquidity providers in automated trading markets and that these firms tended to use the same banks to clear trades. The FCA spoke directly with the PRA about the potential concentration risk at those banks. The FCA and BOE also jointly reviewed European Market Infrastructure Regulation (EMIR) data for the FPC's "fast markets" workstream. The July 2019 FSR included the joint conclusion that the volume and concentration weren't sufficient at any one bank to pose financial stability risks.

- FCA supervisors noted potential risks in the rapid growth of exchange-traded funds (ETFs) in 2016. There were concerns that some Authorized Participants, which provide liquidity to ETFs, could step aside from their role. The FCA raised the issue with the BOE and followed up with a "deep-dive" analysis of the risks posed by fixed-income ETFs.[1] Since the U.K. hosts no domestic ETFs, the FCA also raised the issue with IOSCO. In July 2019, the FPC judged that most ETFs did not appear to present material financial stability risks.

- The U.K. laws and FCA rules that implemented AIFMD also require the FCA to monitor the potential financial stability risks that hedge funds and other alternative investment funds may pose.

- The FCA's Proximity to Failure (PTF) and Harm in Failure (HIF) frameworks identified that, of the firms with the weakest financial resilience (high PTF) whose impact could potentially cause material harm (high HIF), around 35–40 percent are in the payments sector.

- The FCA noted data gaps and infrequency of data that could be improved for more optimal risk analysis of NBFIs. Cross-border activity is often difficult to monitor, and the IOSCO data collection collaboration came out with a minimum standard, mostly for data collection at an annual frequency, which is not optimal for identifying NBFI risk and interconnectedness.

[1] See also the following two related research notes published by the FCA: *Fixed Income ETFs: secondary market participation and resilience during times of stress*, January 2021, and *Fixed income ETFs: primary market participation and resilience of liquidity during periods of stress*, August 2019.

B. Stress Tests

46. Stress-testing has become central to the FPC's risk-monitoring activities. The Bank of England conducted its first stress test of solvency in the banking system in 2014. The annual test assesses the health both of individual banks and the system. The stress scenarios vary countercyclically from year to year, primarily in response to the risk environment. It is one input the FPC considers in setting the countercyclical capital buffer. The FPC and PRC collaborate closely in the process, and the FPC reports both sector-wide and firm-specific results in its year-end FSR. The FPC varies the scenarios each year to respond to specific risks such as consumer credit (2017) and leveraged lending (November 2018). The annual stress tests have also helped the BOE evaluate the resilience of the banking sector to potential disruptions caused by the United Kingdom's exit from the European Union (see the November 2017 and June 2018 FSRs, for example). In addition to the annual solvency test, the Bank introduced biennial exploratory scenarios since the last FSAP. These allow the FPC and PRC to explore longer-term challenges to banks such as risks from fintech and low interest rates (2017), liquidity stress (2019), and climate-related risks (2021). U.K. authorities also developed and continue to run a cyber risk stress test that the FPC first recommended in 2013 (see the separate technical note).

47. Stress tests were an important tool during the pandemic. Early in the pandemic, the Bank cancelled its annual bank solvency test and instead conducted a desktop analysis of the resilience of the U.K. banking sector to the unfolding stress, described in its interim May 2020 FSR. In August 2020, the Bank conducted a forward-looking reverse stress test to calculate how severe the economic paths for the U.K. and global economies would need to be in order to deplete banks' regulatory capital buffers by about 5 percent. The exercise concluded that banks' capital would decline that amount only under very severe economic conditions, in which the cumulative loss of economic output associated with the Covid outbreak would be twice as large as the Monetary Policy Committee (MPC) had projected in August 2020. The FPC judged, based on this exercise, that U.K. banks, in aggregate, had sufficient capital buffers to lend in, and remain resilient to, a wide range of possible outcomes for the U.K. and global economies.

48. BOE concluded that "reverse" stress tests may be a better approach during periods of stress. The FPC noted in its August 2020 FSR that, during any period of stress, the reverse stress test framework would be a better framework than the annual cyclical scenario approach—if a reverse stress test determines that the outcomes that would deplete banks' regulatory capital are unlikely, as it did in 2020, it could avoid a procyclical and potentially damaging recommendation that banks conserve their capital during a downturn. The outcome of the 2021 bank solvency stress test, which was conducted considering the current economic conditions, was published on December 13, 2021. Based on that, the FPC judged that the U.K. banking system remains resilient to a much more severe downturn than the MPC forecasted.

49. The BOE has also expanded stress testing beyond the banking sector. During the pandemic, the PRA carried out separate stress tests of the largest life and general insurance firms. It published aggregated results in June 2020 showing the sector to be robust to downside stress. Like the desktop stress test, the insurance exercise was based on the economic scenario outlined in the May 2020 Monetary Policy Report. The stress on general insurers focused on risks arising from

business interruption policies, where the FCA was seeking a court declaration on test cases to provide clarity for policyholders and firms. The stress test on life insurers focused on the potential impact of credit downgrades on matching adjustment portfolios.

C. Risks Beyond Banking

50. Since 2014, the FPC's annual Risks Beyond Banking (RBB) exercise has brought together analysis from across the BOE, including the PRA, and the FCA to identify and monitor potential systemic risks outside the core banking system (Table 2). The goal is to identify actions that the FPC or other authorities may need to take to acquire new data for monitoring or recommend a regulatory response. That regulatory response could entail bringing activities into the regulatory perimeter or changing the regulation of activities already within the perimeter. The exercise takes six months and culminates in a comprehensive report to the FPC. The exercise provides opportunities for different agencies to share information and discuss gaps in the existing data and analysis. The FPC summarizes its resulting recommendations in the Financial Stability Report. The RBB considers three transmission channels of systemic risk: (1) the provision of critical services; (2) risk to systemically important counterparties; and (3) disruption to systemically important financial markets.

51. In the typical RBB exercise, the BOE assesses roughly 40 nonbank activities for fragility and transmission risk and presents a consensus view to the FPC. BOE experts in the Capital Markets Division prepare a Risk Monitor for the FPC consisting of one-page summaries on each chosen activity, produced in collaboration with PRA and FCA experts. Each activity is assessed based on its fragility and key transmission channels, summarized in a matrix in the Risk Monitor. Potential fragilities include maturity and liquidity transformation; leverage; vulnerability to operational risk; and contagion risks due to behaviors such as herding or risk concentration. Potential transmission channels include risks to the provision of critical services, systemically important counterparties, and market functioning.

52. Inputs into the RBB exercise include "horizon scanning" and "regulatory perimeter" exercises by microprudential supervisors. The PRA's horizon-scanning exercise draws on the work of supervisors and market experts. Two or three topics are presented to the PRA's Supervision, Risk, and Policy Committee three times a year. Topics are typically microprudential in nature but cut across companies and industries; when they raise potential systemic risks, they are elevated to the FPC. The FCA monitors its own risks, drawing on the work of diverse experts. Also, since the last FSAP, the FCA has launched an annual "Perimeter Report" to identify activities that may need to be brought within its regulatory perimeter. It has published three such reports since 2019.[25] As noted, the FCA elevates issues that are potentially systemic to the FPC, typically coordinating with BOE experts on the analysis and presentation of those risks.

[25] The FCA launched its perimeter reports following the Treasury Select Committee's inquiry into the FCA's regulatory perimeter. This included high-profile topics such as the collapse of London Capital & Finance in 2018, which drew attention to the potential risks to consumers of unregulated investment products.

53. The FPC has used the RBB exercise to identify nonbank activities for "deep dives" and "close monitoring" by the BOE, PRA, and FCA. FPC-sponsored deep dives typically take six to nine months and result in FPC recommendations for further monitoring or policy initiatives. The FPC has published in its FSRs the results of deep dives on investment funds (November 2015); market liquidity (July 2016); insurance companies (November 2016); derivatives (November 2017); nonbank leverage (November 2018); and leveraged loans (July 2019). The FPC provided an update of progress in meeting the recommendations in these deep dives in its July 2021 report, *Assessing the Resilience of Market-Based Finance.* As of 2019, the areas the FPC had identified for close monitoring were ETFs, high-frequency trading, cloud services, and Fintech.

Table 2. United Kingdom: FPC's Annual Assessment of Risks Beyond Banking and Selected Inputs

	Details	Timing
BOE (FSSR)	FPC's Risks Beyond Banking exercise	Q2 FPC discussion; publish in FSR
	Close monitoring and deep dives for FPC	Continuous; publish in FSR
PRA (PPD)	Horizon Scanning to monitor evolving cross-firm risks and threats	SRPC discussion three times p.a.
	Input from SRS, IBD, and insurance supervisors	Continuous
FMID	Review of potentially systemic payment systems	Annual paper for FMI Board
BPI	Horizon Scanning to monitor emerging payment risks and threats	Report to Risk Committee twice p.a.
FCA	Perimeter Report	Annual public report
	Horizon scanning by FinTech Hub	Continuous

Notes:
FSSR=BOE Financial Stability Strategy and Risk Directorate
PPD=PRA's Prudential Policy Directorate
SRPC=PRA's Supervision, Risk, and Policy Committee
SRS=PRA Supervisory Risk Supervisors
IBD=PRA's International Banks Directorate
FMID=BOE's Financial Market Infrastructure Directorate
BPI=BOE's Banking, Payments, and Innovation Directorate

Source: BOE.

54. Several of these analyses proved prescient during the pandemic crisis. FPC deep dives, published in its FSR, highlighted liquidity mismatch in open-ended funds and the risk of margin calls for pension funds and insurers. Both risks were realized during the dash-for-cash in early 2020. However, elements of financial contagion during the dash-for-cash were unexpected—for example, the extent to which managers of open-ended investment funds were relying on money market funds for liquidity management.

55. The BOE suspended the RBB exercise during the pandemic and is revamping it for 2022. The pandemic required a more targeted approach, as described below. As they launch the first RBB round since before the pandemic, BOE staff are considering ways to improve the process by drawing on a wider range of industry sources; strengthening the links to other horizon-scanning exercises across the BOE; increasing the focus on new financial technologies; bringing in new data sources, while improving the use of existing data sources; and focusing on thematic analyses of key vulnerabilities.

56. The FPC has suggested it may recommend changes to the Bank of England's regulatory perimeter to also include systemic firms in relation to payment services. In previous years, the FPC concluded that no unregulated activities need to be brought within the regulatory perimeter, based on its RBB analyses and deep dives. In its December 2019 FSR, the FPC proposed a regulatory model that would bring systemically important payments firms into the regulatory perimeter. Its approach included three principles: (1) the regulation of payments should reflect the financial stability risk, rather than the legal form, of the activity; (2) the systemic importance of a single firm should be evaluated by its role in a systemic payment chain; and (3) supervisors should collect sufficient information to identify systemically important payments firms as they emerge. However, the FPC has not made a formal recommendation on the subject to HMT.

57. The recent high-profile failures of two internationally active financial groups, while different, illustrated the challenges of identifying vulnerabilities in dynamic cross-border NBFI activities. Global supervisors later described the incidents as non-systemic. Still, the events point to risks in cross-border activities that could have become systemic under different circumstances. The incidents have revealed that several international banks and corporate and investment banking branches did not have appropriate governance and risk management arrangements and were unable to monitor and mitigate risks arising from these activities. Moreover, supervisors were not able to systematically monitor these types of positions in real-time due to data constraints and were not aware of the common exposures across banks globally. Elements in domestic regulatory regimes, such as the United Kingdom's approach to "appointed representatives," potentially also helped keep the risks off supervisors' radar. Furthermore, these entities were not subject to comprehensive regulatory disclosure requirements, due either to their legal status or the instruments in which they transacted.

D. Data and Information

58. Timely, regular, relevant, and usable data are essential for financial stability analysis. The FPC and BOE staff, due to their financial stability mandates, must take the lead in identifying and evaluating the data needed for financial stability analysis, working with the FCA for the firms and markets that it regulates. The work in addressing data gaps remains unfinished. Meanwhile, the BOE and FCA have taken steps since the last FSAP to promote data-sharing across authorities, improve the quality of data and analytics, and accelerate the use of technology to improve data collection from industry.

59. Data gaps continue to limit the authorities' ability to analyze nonbank financial intermediation risks. The authorities have made mixed progress in filling the three material data gaps that the 2016 FSAP identified—the flow of funds, the activities of nonbank financial institutions, and the buy-to-let mortgage market. As noted, FPC-sponsored research on nonbank financial institutions has often revealed critical gaps in the data available to analyze the risks in those activities. In its July 2021 assessment of market-based finance, the FPC stated priorities to collect better data on asset management firms' use of leverage, potential losses, and potential liquidity demands; and on margin practices in noncleared derivatives markets. FPC has not yet used its special powers to call for new data collections, partly because the international nature of

market-based finance would limit the value of domestic-only collections. Box 2, *Data Needs for Financial Stability Analysis*, summarizes the findings of the FSAP team across financial sectors.

60. The U.K. authorities have often taken the lead in international efforts to improve data and surveillance of market-based finance and will need to redouble those efforts going forward. The BOE and FCA have been proactive in elevating market-based finance issues at the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO) (Tables 3 and 4 show lists of international committees that BOE and FCA chair internationally). For example, the BOE and FCA, with the FPC's support, have pushed for better data about the leverage in hedge funds and other alternative investment funds. The pandemic crisis provided further evidence that monitoring of nonbank financial intermediation needs to be a collaborative, international endeavor. The response to the crisis sparked ad hoc international information-sharing initiatives. More international coordination will be needed to enable the authorities to monitor other types of cross-border nonbank financial firms. The high-profile failures in 2021 of two internationally active NBFIs should help spur international coordination to improve data on the activities of complex financial firms that operate across borders. The FPC also noted in its July 2021 FSR that international regulators need to develop a way to aggregate and share trade repository data in order to better analyze cross-border exposures in derivatives markets, as highlighted by the family fund default.

61. The authorities have been creative in using external data providers and market intelligence to fill gaps in regulatory data. The BOE uses commercial datasets to build monitoring capabilities for foreign-domiciled asset managers and, where helpful, to complement FCA data collections for U.K. asset managers. These include money market funds, property funds, exchange-traded funds, and open-ended mutual funds. Following the failure of the family fund, FMID and FSSR staff developed a proof-of-concept monitoring tool to identify large and fast-growing counterparties in equity derivatives, using EMIR trade repository data.

62. BOE researchers and FCA analysts have also been innovators in using new data sources. Bank researchers used internet search data as early as 2011 to study housing and employment market conditions. They have taken the lead in analyzing new datasets that have become available since the GFC—for example, in the analysis of systemic risk using credit derivatives data or market dynamics using new derivatives data from trade repositories, which the FCA also analyzes. And the FCA has analyzed MiFID2 transaction reporting data for different purposes, including the analysis of the corporate bond market. During the pandemic, the BOE produced a weekly pack of high-frequency indicators to assess household and corporate stress, including novel data sources (Table 2).

63. The BOE and other domestic authorities have established "gateways" to share confidential information under certain conditions.[26] The FCA has a legal gateway to share confidential data with the BOE where it will help the BOE perform its statutory functions, including financial stability oversight. The FCA similarly has procedures, governed by bilateral memoranda of understanding (MoUs), for requesting information from other authorities. Section 348(1) of FSMA

[26] See Appendix 2 of the BOE's *Statistical Code of Practice*.

prevents the FCA from disclosing confidential information without consent, except where legal gateways are engaged.

Box 2. Data Needs for Financial Stability Analysis

In this box, the IMF's FSAP team provides their analysis of progress in addressing gaps across the U.K. financial system and their recommendations for closing the remaining gaps.

- **Banks.** Data collections on banking activities have greatly improved since the GFC with the introduction of capital reporting (COREP), financial reporting (FINREP) and, since the last FSAP, liquidity reporting (PRA 110). The PRA regularly runs validation and plausibility checks on the regulatory returns it receives from banks. However, for data collections of more recent origin or falling outside of the regulatory reporting perimeter, the validation and plausibility checks in place do not necessarily ensure the quality and—ultimately—full usability of the data. This is the case for certain datasets reported by the banks participating in the ACS as part of the Stress Test Data Framework (STDF): while potentially very useful for several purposes (like solvency stress testing, climate risk analysis, etc.), they sometimes present significant limitations that severely constrain their use for broader purpose, as experienced directly by the FSAP team. A revision of the validation and plausibility rules (e.g., regarding the admissible values for identifiers), together with stricter enforcement of those rules would enhance data quality and promote risk monitoring.
- **Sterling Markets.** Ensuring market functioning of core Sterling markets is a key financial stability consideration, as shown by the March 2020 "dash-for-cash" episode. However, assessing different stressed market conditions could be improved by having granular data on the holdings of Sterling instruments by investor class. More specifically, and not withstanding existing data on holdings by insurers, information on the holdings of Sterling-denominated instruments by each type of investor, including nonbanks and entities abroad, is missing. The BOE does usefully have regular access to trading data on sterling Gilts and corporate bonds collected by the FCA for market conduct purposes. Such data could be used more frequently, however, for instance, a regular analysis of concentration of trading by similar types of investors.
- **Flow of Funds Statistics.** Since the 2016 FSAP, the Office for National Statistics (ONS) has published over 30 articles showcasing experimental statistics as it evaluates new regulatory and commercial data sources to improve the compilation of the flow of funds (from-whom-to-whom) statistics. It has reduced the unknown sectors across the flow of funds accounts and published additional data for the investment and "other financial institutions" sectors, helping complete the U.K. submission to the FSB's annual global nonbank monitoring exercise. The ONS also now publishes quarterly balance sheet data from its Financial Services Survey on a range of nonbanks. The authorities' work on the whom-to-whom data collection continues, although it is not currently separately published in annual experimental data publications. Despite recent improvements, granular data on domestic and foreign NBFIs are still missing, precluding analysis of the links among U.K.-based banks and NBFIs with similar entities domiciled abroad. Reducing these gaps would enhance the understanding of potential vulnerabilities stemming from cross-border interlinkages.

Box 2. Data Needs for Financial Stability Analysis (continued)

- **Direct Lending by NBFIs.** U.K. authorities now collect aggregate lending statistics for insurers, pension funds, finance companies, and other financial institutions on an annual basis for the FSB's nonbank monitoring exercise. But those collections exclude corporate loans and unregulated consumer credit providers, such as buy-now-pay-later and employer salary advance schemes. Data on the asset quality of nonbank small business loans and commercial real estate loans are also not consistently available.

- **Insurers.** The implementation of Solvency II in 2016 brought a substantial improvement in the supervisory reporting of (re)insurance undertakings, including detailed asset-by-asset reporting on a quarterly basis. In addition, the PRA has introduced a set of national-specific reporting templates which allow a comprehensive monitoring of internal model drift. However, some gaps remain, most notably in the areas of liquidity risk and cross-border business. Liquidity analyses suffer from the absence of data on short-term cash flows. All insurers do not consistently report basic stock data, such as the amount of cash and cash equivalents. Derivatives data—which is also available from trade repositories under EMIR—needs to be further enhanced and quality-checked to allow authorities to monitor the risk of margin calls in stress periods. Data on cross-border business and intermediation channels are limited. For insurance intermediaries, including some of the larger brokers in the Lloyds and London market, liquidity reserves have been collected weekly by the FCA during the pandemic for the first 12 months and monthly thereafter on an ongoing basis.

- **Money Market Funds**. Most sterling-denominated money market funds are domiciled in Ireland or Luxemburg. Security-level commercial data are available for these funds at a daily frequency. These data include information on the funds' inflows and outflows, allowing the analysis of potential liquidity needs (for U.K. MMFs, the FCA can and has requested more regular data as needed, to augment data received under U.K. Money Market Funds Regulation (MMFR) reporting requirements). The Bank typically relies on commercial data sources to track fund flows and assets under management in foreign-domiciled MMFs monthly. During the pandemic, Luxembourg and Ireland provided more granular flow data to the FCA. Only 18 MMFs with about £21 billion (as of 30 December 2021) in assets are domiciled in the United Kingdom and subject to FCA oversight, roughly 8 percent of all sterling MMF assets under management. These MMFs report to the FCA on a quarterly basis under the onshore Money Market Funds Regulation (MMFR), although the FCA can and does request more regular data from managers as necessary.

- **Open-Ended Funds.** Supervisory data on open-ended funds domiciled in the U.K. provide line-by-line holdings information, but the data are only available annually or semi-annually with a significant reporting delay of up to four months for most OEFs. In addition, many funds holding sterling assets are domiciled overseas. However, in the case of U.K. MMFs, additional data including line-by-line security-level holdings are reported to the FCA quarterly under U.K. MMFR rules too. The FCA can obtain daily data as needed from all U.K. managers. During the pandemic, the BOE and FCA collected pandemic-related flows and other information from a large sample of U.K.-authorized corporate bond funds for their survey of open-ended funds. The FCA also collected daily flow data from the relatively small property fund sector during the crisis, and from some other funds. Going forward, as with other jurisdictions, it would be better for supervisors to receive data at a much higher frequency to assess the potential risks posed by open-ended funds.

Box 2. Data Needs for Financial Stability Analysis (concluded)

- **Alternative Investment Funds.** Managers of hedge funds and other funds defined as alternative investment funds (AIFs) under the U.K. AIFMD provide semi-annual information—e.g., on financial leverage, types of borrowers and lenders, and portfolio sensitivities to interest rate and credit risk movements—to the FCA (primarily this is for AIFs operated by U.K.-domiciled managers). It is difficult to use the data to assess potential liquidity needs in stress events. The BOE's survey of prime brokers, the Hedge Funds as Counterparty Survey, provides very valuable insights—for example, in a 2020 BOE paper on hedge funds' use of repo borrowing—but is only semi-annual. The BOE is now considering improvements to that survey. The inability of relevant international regulators and counterparties to identify the concentrated exposures to a family fund that failed in early 2021 also highlights other data shortcomings. Tools to aggregate and share data from trade repositories need to be developed internationally, since each authority now can only access data relevant to its own jurisdiction.

- **Central counterparties.** Supervisory data on central counterparties are extensive, covering data on initial and variation margins at the account level, as well as information on sensitivities to changes in interest rates and other risk factors. Supervisors also regularly review CCP models. Transparency and predictability of potential liquidity needs associated with margin changes could be enhanced through the publication of the potential liquidity demands that CCPs may place on their clearing members and the potential impact on the members' clients of the pass-through.

- **Internationally active cross-border financial groups**. Following the high-profile failures of two internationally active cross-border financial groups, the United Kingdom should consider whether its oversight over internationally active NBFIs operating in the United Kingdom should be expanded to include additional monitoring criteria. That would include the need to take a closer look at the unregulated entities of mixed cross-border groups to evaluate their impact on the regulated entities and any potential systemic implications. It also should review whether the existing supervisory cooperation arrangements provide sufficient information-sharing for effective monitoring of systemic risks.

Table 3. United Kingdom: List of International Committees Chaired by the BOE

IO	***Committee***	***Position***
FSB	Standing Committee on Supervisory & Regulatory Cooperation ('SRC')	Chair
	Cross-border Payments Coordination group ('CPC')	Co-chair
	Financial Innovation Network ('FIN') - Fintech working group	Co-chair
	Standing Committee on Assessment of Vulnerabilities ('SCAV') - Open-ended funds work stream	Chair
	Outsourcing workstream	Lead
CPMI	Head	Chair
	Program Co-ordination Board	Chair Deputy Chair
IAIS	Head	Chair
G7	2021 Presidency	Central Bank Chair
		Deputies Chair
BIS	Markets Committee - workstream on markets dysfunction	Chair
	CDBC workstream	Chair
	CPMI-IOSCO workstream on margin	Chair
NGFS	Network for Greening the Financial System – workstream on macrofinancial	Chair
UNDP	Sustainable Insurance Forum (SIF)	Chair

Source: Bank of England.

Table 4. United Kingdom: List of International Committees Chaired by FCA

IO	***Committee***	***Position***
FSB	Official Sector Steering Group ('OSSG') - Benchmark rates reform	Co-chair
	Workstream on Dealer Behavior (WDB)	Co-chair
IOSCO	Committee 3 on Regulation of Market Intermediaries	Chair
	MMoU Screening Group	Vice-Chair
	Committee 5 on Investment Management	Vice-Chair
	Committee on Emerging Risks	Chair
IAIS	Market Conduct Working Group	Chair
G20/OECD	Consumer protection task force	Chair

Source: Financial Conduct Authority.

64. **The FPC regularly receives data from BOE and PRA staff and has received data from the FCA on an ad-hoc basis.** The FCA has several agreements to provide data to FSSR, the BOE unit that supports the FPC. For example, it routinely shares hedge funds' AIMFD data with the Capital Market Division of FSSR to enable them to analyze leverage. More recently, to support a joint BOE-FCA project, the FCA shared data compiled from an ad-hoc survey of open-ended investment funds. The Capital Market Division also uses MiFID2 data from the FCA and trade repository data from the BOE's Financial Market Infrastructure Directorate. The FPC has not found it necessary to use its formal powers to request data from other authorities.[27]

65. **The BOE and FCA also have information-sharing MoUs with overseas counterparts.** MoUs establish a formal basis for cooperation to support microprudential supervision and systemic surveillance. While not legally binding, they provide a basis for supervisors and financial stability analysts to share information for legitimate needs. For example, the BOE has an MoU with the Office of Financial Research, a unit of the U.S. Treasury; while neither party has formally invoked the agreement, BOE staff say it has facilitated a more open and frank exchange of views and data. After the Brexit referendum, the FCA signed over 80 MoUs with EEA and non-EEA supervisory authorities. The FCA and BOE have tripartite MoUs with European counterparts. The FCA also has multilateral MoUs with securities and insurance regulators and other international bodies, including IOSCO.[28]

[27] Under European Union law, AIFMD is the Alternative Investment Fund Managers Directive and MiFID2 is the second Markets in Financial Instruments Directive.

[28] The FCA maintains a list of international MoUs on its website.

66. The BOE elevated the role of the Chief Data Officer in 2019 to form and implement a "One Bank" data strategy. The Chief Data Officer is now an Executive Director and heads the Data & Analytics Transformation Directorate, reporting to the Deputy Governor for Monetary Policy.[29] The BOE's Data & Analytics strategy is focused on promoting better use of data and analytics across the organization. It is organized around three "pillars." Under the "people" pillar, the Data & Analytics team promotes staff training for core analytical tools and sponsors Bank-wide communities of interest to discuss challenges and innovations in working with data. Under the "data" pillar, the group oversees the BOE's data quality framework and data inventory. The inventory, introduced in 2016 and recently relaunched, includes more than 1,000 statistical, regulatory, and operational datasets collected by the BOE and other authorities, as well as data purchased from commercial vendors. It helps staff across the BOE locate the data they need for their analysis, showing which sets can be used for which purposes and any legal restrictions.[30] Under the "analytics" pillar, the group has recently launched a Bank-wide data and analytics platform and an internal code repository, where analysts can share code.

67. The BOE and FCA have launched a multi-year initiative to improve data collection. An initial review identified three goals: defining and adopting common data standards, modernizing reporting instructions, and integrating financial reporting to be more consistent across sectors and regulators. Phase one has begun with use cases focused on quarterly derivatives statistics, commercial real estate data, liquidity monitoring metrics, and financial resilience reporting.[31] The BOE and FCA have been active adopters of XBRL for aspects of regulatory reporting and have strongly supported the use of the legal entity identifier (LEI) and other key international data harmonization efforts.

E. Recommendations

68. The FPC should continue to advocate and support efforts to promote international cooperation and to make sure that authorities have the data and information needed to monitor and assess risks, particularly with respect to NBFIs. Data on NBFIs need to be timely, regular, relevant, and usable for systemic risk evaluation. The FPC has already made important contributions to the BOE's and FCA's data agendas through the recommendations on addressing NBFI data in its Financial Stability Reports and in the July 2021 report on market-based finance. But the FPC could play a more active role by informing the BOE's and FCA's data priorities for financial stability analysis and regularly monitoring their progress in achieving those priorities in its *Financial Stability Reports*. The FSAP team recognizes that improving data will depend significantly on international cooperation. For example, the FPC has noted the need to develop tools to aggregate and share data from trade repositories internationally. The FSAP recommends that the FPC should continue to advocate for and support U.K. authority efforts to promote international cooperation to ensure that authorities have the data they need to monitor and evaluate systemic risks, including

[29] The Chief Data Officer has dual reporting to the Deputy Governor for Prudential Regulation. The BOE hired its first Chief Data Officer in 2015, reporting then to the Chief Information Officer.

[30] The BOE's Independent Evaluation Office, in a 2019 report on the BOE's research function, found that BOE researchers sometimes had difficulty taking advantage of BOE data—because they didn't know what data were available, they had difficulty gaining access, or they couldn't exploit the data using the technology available.

[31] *Transforming Data Collection from the U.K. Financial Sector*, February 2021.

data on NBFIs. The lessons of the pandemic and the recent high-profile failures of cross-border NBFIs should also provide some impetus for stronger international collaboration.

69. That approach should consider the specific data gaps that the IMF's FSAP team identified. Those recommendations include improving the quality of stress-test data that banks provide; improving the BOE's access to trading data on sterling Gilts and corporate bonds; collecting consistent data on nonbank lending; improving basic stock data and derivatives data from insurers; collecting regular data on MMFs, both domestically and overseas; collecting—in a proportionate way and in line with global initiatives—reliable, more regular liquidity, leverage, and position data from open-ended funds; more frequent and more useful liquidity, leverage, and risk data from hedge funds; and collecting more information on the potential liquidity demands that CCPs may place on their clearing members or the members' own clients. The FSAP team identified important projects that are already underway and should be completed in the near- to medium-term—for example, improving the content and increasing the frequency of the hedge funds as counterparty survey. The authorities should also progress the flow-of-funds project, and not allow further milestone slippage, as these data are important for assessing domestic NBFI activities and for contributing to the FSB's global monitoring.

70. The FCA should continue to build its capacity to monitor and analyze the activities of NBFIs as the potential systemic risks grow, to identify and step-up monitoring of those firms and activities that have the potential to pose the greatest systemic risk. The FCA has stepped up its collaboration with the BOE and support for the FPC since the last FSAP as the profile of nonbank financial intermediation risks has grown in the United Kingdom and global financial system. FCA experts are attuned to emerging systemic risks during their supervisory and surveillance work. The agency has also devoted resources to monitor the risks of market disruption as part of its market-integrity objective. Still, it is very likely that the nonbank financial sectors under the FCA's regulatory oversight, including those that employ new technologies in financial services, will continue to grow and create further potential threats to financial stability in the coming years. As noted, the FCA already monitors alternatives asset management firms with the greatest potential to disrupt markets and appropriately investigates outliers with additional analysis and onsite visits. The FSAP team supports this approach in other relevant portfolios.

71. The FPC should explain its approach to data and systemic risk oversight. The FPC's leadership of the systemic risk oversight activities conducted by the BOE and FCA has been exemplary. An articulation of its oversight strategy and the dependence of that strategy on the availability of timely, regular, relevant, and usable data would be very valuable. That strategy should include an articulation of the FPC's approach to the evaluation of data sources, including how it determines which data needs are most pressing for financial stability analysis, and how the FPC is committed to leadership in the international policy arena in addressing gaps and promoting data standards like the LEI. This would reinforce systemic oversight domestically and be a good example for other jurisdictions to follow.

MACROPRUDENTIAL POLICY

72. The FPC has broad macroprudential policy powers and has exercised them judiciously since the last FSAP. A macroprudential authority should have the ability to increase the resilience of the financial system to known vulnerabilities and to respond nimbly to emerging systemic risks, whatever the source. It should have a strong voice in the design of the regulatory framework, including the ability to expand the scope of regulation to firms or markets that may threaten financial stability. The macroprudential authority should have the power to recommend, and direct where necessary, policy changes it believes are necessary to promote resilience and maintain financial stability. As noted, the United Kingdom has designed a thoughtful framework in which the FPC can exercise these functions. The FPC is one of a small number of macroprudential authorities with specific, "hard" direction powers to use time-varying macroprudential measures.[32] It also has broad recommendation powers that it can deploy quickly in response to emerging systemic risks.

73. In its early years, the FPC issued many directions and recommendations to the PRA and FCA as it established the United Kingdom's post-GFC macroprudential framework, mostly focused on banking sector risks. These elements remain in place and require ongoing FPC work—for example, regarding stress tests, capital standards, the countercyclical capital buffer (CCyB), and the mortgage market measures. In total, the FPC has made 47 recommendations or directions under its statutory powers since 2011, mostly to the PRA and mostly prior to 2016; five of its recommendations were on a comply-or-explain basis (see Table 5, FPC Powers).[33] With macroprudential policy toward banks largely in place, the FPC has used its formal direction and recommendation powers sparingly. Since the last FSAP, the FPC has issued four recommendations, all to the PRA regarding capital or leverage standards; one on a comply-or-explain basis.[34] Officials in the BOE's financial stability area say that they have been able to collaborate successfully with peers in other authorities without resorting to the comply-or-explain power.

74. Directions and Recommendations are motivated with comprehensive systemic risk monitoring and assessments. The policy measure objectives and potential effectiveness of different policy actions are analyzed and presented to the FPC. The FPC uses cost-benefit analysis to inform its choice between policy options, demonstrate the legitimacy of a policy within its statutory objectives, and guide its optimal calibration. These cost-benefit analyses are published for

[32] Rochelle M. Edge and Nellie Liang, in *New financial stability governance structures and central banks*, 2019, define hard powers of financial stability authorities as "direct control over macroprudential tools or the ability to direct other regulatory authorities."

[33] The comply-or-explain recommendations were: (1) to the FCA and PRA, with other Bank staff, to assess the vulnerability of borrowers and institutions to rising interest rates (June 2013); (2) to the PRA, to employ the liquidity coverage ratio as defined in the EU's implementation of the Basel standard; (3) to the PRA, to work with major banks and building societies to improve consistency of Pillar 3 disclosures; (4) to the PRA, to ensure that all major banks and building societies comply with the recommendations of the Enhanced Disclosure Task Force; and (5) to the PRA, to consider allowing firms to exclude claims on central banks from the calculation of assets in the leverage ratio (July 2016).

[34] Those were recommendations that the PRA: (1) ensure sufficient capital at an institution's consolidated level when applying systemic buffers (May 2016); (2) reduce supervisory buffers to offset the countercyclical capital buffer (May 2016); consider allowing firms to exclude claims on central banks from the calculation of assets in the leverage ratio (July 2016); and (4) exclude claims on central banks from the calculation of assets in the leverage ratio, and require a minimum leverage ratio of 3.25 percent (September 2017).

transparency. The benefits of the action reflect the reduction of the probability or the severity of a crisis; the costs reflect the potential decline in GDP growth during non-crisis times.[35]

Table 5. United Kingdom: FPC Powers

Power	Type	Active Date	Agency	Used	Policy Statement Published
Sectoral Capital Requirements	Direction	April 2013	PRA		Jan. 2014
Countercyclical Capital Buffer	Power under EU CRD	May 2014	PRA	Yes	April 2016
Housing Market	Recommendation	June 2014	PRA/FCA	Yes	Oct. 2014
Limits on Mortgages with High LTV and DTI Ratios	Direction	April 2015	PRA/FCA		July 2015
Leverage Ratio	Direction	April 2015	PRA	Yes	July 2015
Extend LTV/DTI Power to Buy-to-Let Market	Direction	Dec. 2016	PRA/FCA		Nov. 2016

Source: IMF.

75. **The FPC assesses policy measures that are in place regularly to evaluate their effectiveness and potential policy leakages.** This is done via data analysis, in-depth econometric modelling, ex-post cost-benefit analysis, research insights, and surveys. For example, the mortgage market recommendations that have been in place since 2014 have undergone multiple reviews, including monitoring lending trends for leakage; and the use of models to estimate how the mortgage market and household leverage would have evolved in the absence of these measures.[36] These assessments guide the committee in its decisions to maintain, improve, or remove policy measures.

76. **As the focus of regulatory reform shifted to market-based finance, the FPC has increasingly used its soft powers to influence policy**.[37] For example, the FPC accompanied each deep-dive analysis it conducted between 2015 and 2019 with "policy conclusions" and tracked progress periodically. These conclusions have not been presented as formal recommendations within the United Kingdom. Rather, the FPC's policy conclusions frequently have addressed actions needed from international organizations like the Basel Committee on Banking Supervision, International Association of Insurance Supervisors, and FSB. The international focus often reflects the need for agreement from other jurisdictions on policies toward NBFIs that largely operate across international borders. The FPC has also increasingly published frameworks or principles for regulators to follow in setting policy based on its analyses of key financial sector vulnerabilities. For example, in the December 2019 FSR, it published a framework for payment systems regulation and, as part of the BOE and FCA's ongoing review of open-ended funds, principles promoting greater consistency between the liquidity of funds' assets and its redemption terms.

[35] Key elements of a CBA are to: (i) identify the underlying market failure the policy is designed to address; (ii) articulate the transmission channels through which it will work; (iii) measure its effect using different intermediate variables that can be mapped to GDP; and (iv) make assumptions that allow the costs and benefits to be weighed up.

[36] See Jon Cunliffe, *Housing tools revisited*, July 3, 2019.

[37] In line with Edge and Liang, 2019, we define soft powers as the FPC expressing "an opinion or issue[ing] a warning or non-binding recommendation but without any comply or explain requirements, or to serve only an information-sharing or policy-coordination function across agencies."

A. Household Mortgage Debt

77. The FPC first acted to limit the build-up of household indebtedness in 2014, through a recommendation to the PRA and FCA. In 2014, the FPC noted the rapid rise in house prices and an ongoing increase in the share of mortgages extended at high loan-to-income (LTI) multiples. It responded with two mortgage market recommendations to the PRA and FCA. One sets a floor on the stressed rate spread that mortgage originators should apply in the mortgage affordability test; the other caps the share of new mortgages that each lender can issue at a high-LTI multiple (see Box 3, *FPC Mortgage Market Recommendations*). Later in 2014, the FPC formally requested the power to direct the regulators to set loan-to-value (LTV) and LTI limits for owner-occupied homes, but it has not yet used that direction power.

78. The housing market remains one of the main sources of potential risk to U.K. financial stability. In the United Kingdom, periods of strong demand for housing and rapid house price growth have been accompanied by an increase in household debt relative to income. After a shock, high levels of household debt can affect the financial system directly through loan losses and bank capital, or indirectly through a contraction of household consumption, amplifying downturns. Most mortgages in the United Kingdom have a fixed, usually promotional, interest rate period of 2–5 years and are then reset to a variable rate, called the reversion rate.[38] Historically, about three quarters of all borrowers refinance their mortgages within six months from the reset on to another promotional interest rate. About one quarter of household mortgage contracts reset annually, exposing those households to heavier debt-service burdens if financial conditions have tightened since the origination of the mortgage.

79. The stress tests conducted by the FSAP team indicate that household financial conditions would deteriorate in a scenario with rising inflation and tightening financial conditions. Under this scenario, the probability of mortgage default increased somewhat, driven by mortgages that would be reset during that period.

80. House prices rose at an annual rate of 11.8 percent through September 2021, the strongest gains in over a decade. House prices have increased sharply across several regions in the past year. The highest rate was 16.8 percent, in the northwest region of the United Kingdom; price growth has been more subdued in London, at 2.8 percent (Figure 3, panel 1). Price increases have elevated key affordability measures, which had been deteriorating for more than a decade. The house price-to-earnings ratio for buyers was 6.7 times in the third quarter of 2021, surpassing the previous historical high of 6.4 times in 2007 nationwide (Figure 3, panel 2).

81. Robust housing market activity reflects a combination of support measures and structural factors. High levels of activity and house price growth could be temporary, reflecting pandemic-related policy supports such as the Stamp Duty Land Tax (SDLT) holiday, mortgage payment deferrals, and the mortgage guarantee scheme (MGS). However, prices continued to rise in the fall of 2021, even as these supports mostly expired, and these trends have been observed

[38] Increasingly, mortgage rates have been fixed for more than five years. See Jamie Coen, Anil K. Kashyap, and May Rostom, *Price discrimination and mortgage choice*, 2021.

across jurisdictions.[39] This suggests the presence of other drivers, such as larger household savings accumulated during the pandemic, an increased demand for additional space given flexible working arrangements (consistent with the relatively weak demand in central London and other city centers), lower construction activity, and continued accommodative monetary policy.

82. Mortgage borrowing continues to rise relative to income. The mean LTI ratio has increased in recent months to a historical high (Figure 3, panel 4). This is mostly driven by an increase in lending at LTI ratios below 4.5 times, the FPC's threshold, but above 4 times. Lending above the 4.5 threshold has not increased (Figure 3, panel 3). However, the share of households with high debt-service burdens is largely unchanged, and considerably lower than in the run-up to the GFC. The ratio of mortgage payments to take-home pay is also still considerably lower than in the run-up to the GFC, due to the low interest-rate environment.

83. The BOE and FPC regularly review the effects of their 2014 mortgage market measures on the U.K. mortgage market. In 2019, the FPC cited evidence that some borrowers were getting smaller loans because of these measures, as intended, but the aggregate impact of the measures was small. Since the measures were introduced, mortgage loans have "bunched" at LTI ratios just below 4.5 times. At the same time, lending at LTI ratios above 5.0 times has declined. This suggests that some individuals are obtaining smaller loans than they would have otherwise.[40] Second-charge mortgages (SCM), or second-lien mortgages, are a potential channel of leakage of the measure, since they are not covered in the LTI calculation. However, the BOE's analysis indicated that lenders were not systemically exploiting these products to circumvent the flow limit. The market has evolved in other ways since the FPC made its recommendations. Mortgage terms have increased by an average of well over two years, and the number of mortgages with a fixed-rate period of five years or more has increased. The FPC has concluded that the FPC's affordability recommendations made only a small contribution to these developments, although the effects seem to be more pronounced for levered borrowers.

84. The FPC judged in December 2019 that these mortgage market measures should remain in place through cycles in the housing market. The FPC argued that the levels it had set for its mortgage market measures would prevent lenders from loosening lending standards. In its December 2019 review of the recommendations, the FPC concluded that the "measures prevent a loosening of underwriting standards that would otherwise lead to an increase in the number of more highly indebted households. These benefits substantially outweigh any macroeconomic costs. These standards therefore maintain financial stability and support economic growth through the cycle."

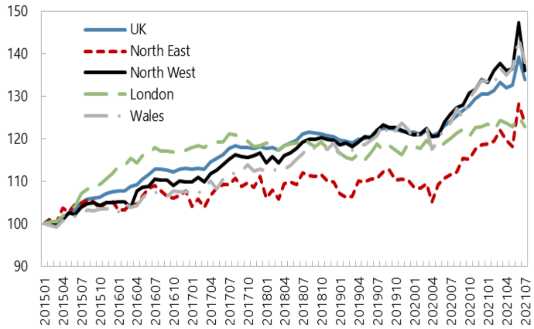
[39] The SDLT holiday was introduced in June 2020, extended fully until June 2021, and then phased out by the end of September 2021. In May 2021, over 80 percent of households that had taken out mortgage payment deferrals had returned to full repayments. The MGS was announced in March 2021. For the effects of the SDLT holiday on housing activity, see M.C. Best and H.J. Kleven, "Housing Market Responses to Transaction Taxes: Evidence from Notches and Stimulus in the U.K.," *The Review of Economic Studies*, Vol. 85, Issue 1, 157–193

[40] *Financial Stability Report*, December 2019.

Figure 3. United Kingdom: Housing Price Developments and Household Debt Vulnerabilities

U.K. average house prices increased by 11.8 percent over the year to September 2021 …

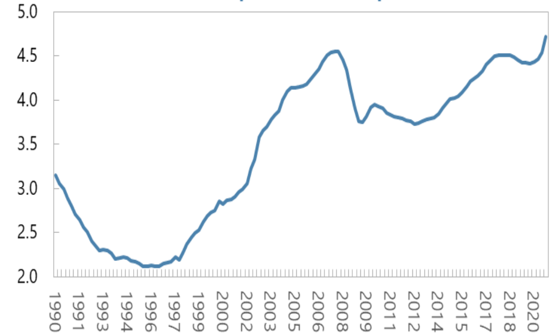
House Price Indices
(January 2015=100(NSA))



Sources: HM Land Registry.

… contributing to a further deterioration of house price affordability.

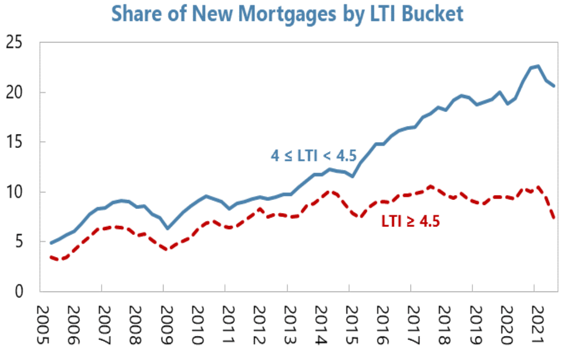
House Prices to Disposable Income per Household



Sources: Bank of England (BOE); and FPC housing tools database.

Leading to a rising share of new lending at high LTI ratios

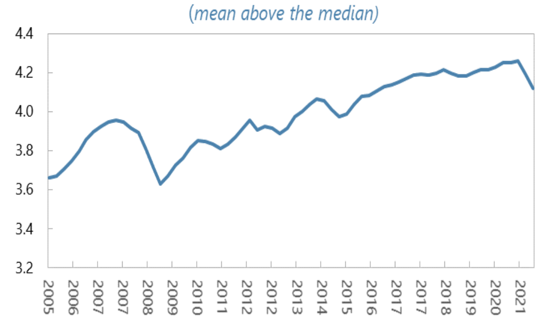
Share of New Mortgages by LTI Bucket



Source: Bank of England (BoE).

… and higher median loan to income.

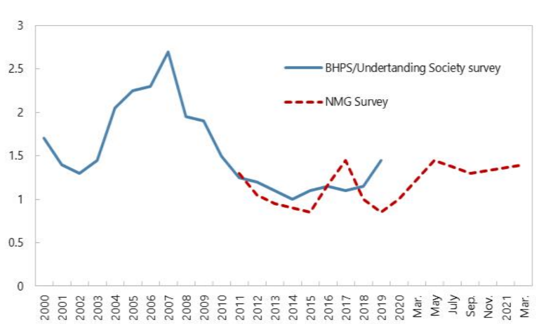
Residential Mortgage LTI Ratio
(mean above the median)



Sources: Bank of England (BOE); and FPC housing tools database.

… while the proportion of households with high mortgage DSRs (>40 percent) remain relatively low in the low interest rate environment…

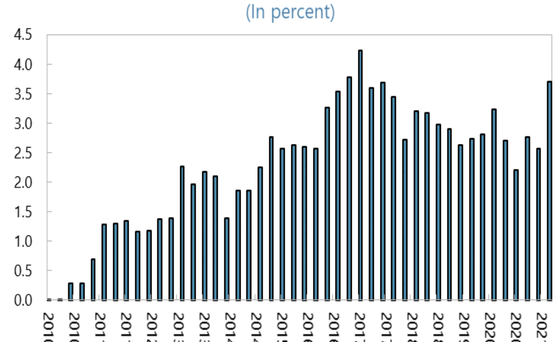
Proportion of Households with Mortgage DSRs At or Above 40 Percent



Sources: BoE Financial Stability Report.

… but despite continued low rates household credit growth has not risen consistently.

Household Credit Growth
(In percent)



Sources: Bank of England (BOE), and FPC housing tools database.

Box 3. United Kingdom: FPC Mortgage Market Recommendations

- The FPC announced in December 2021 its intention to consult on a potential change to one of its two mortgage market recommendations, introduced in June 2014. The recommendations set a floor on the stressed rate buffer that mortgage originators should apply in the mortgage affordability test; and a cap on the share of new mortgages that each lender can issue at high LTI multiples. The stated objective of the recommendations is to limit the number of highly indebted households. The recommendations thus aim to reduce the extent to which debt can amplify the reduction in household consumption in response to adverse shocks, reduce the probability that households will default on their mortgages, and reduce the risk of a feedback loop between mortgage lending and house prices.

- The FPC recommended the PRA and the FCA to ensure that mortgage lenders would not extend more than 15 percent of their total number of new residential mortgages at LTI ratios at or above 4.5 times. The objective was to prevent further increases in highly leveraged mortgage borrowers. The FPC did not expect the rule to be binding for most lenders and hence would have limited material impact on GDP. The PRA fulfilled the recommendation within the PRA Rulebook by limiting a lender's high loan-to-gross-income mortgage contracts to a maximum of 15 percent of all regulated mortgage contracts in any quarter. The time was amended in 2016 to a four-quarter rolling limit. This recommendation is also still in effect. The FCA introduced general guidance to the same effect.

- Also, in 2014, the FPC recommended that when taking account of future interest rate rises as required under the FCA's responsible lending rules, lenders should use a stressed rate that is 300 basis points higher than the prevailing rate. The FCA added a requirement to take account of future interest rate rises to its rules on responsible lending in April 2014, following an in-depth Mortgage Market Review that was initiated in 2009 (FCA's Mortgage Conduct of Business (MCOB) framework). The FCA rules specify that, unless a mortgage's interest rate is fixed for 5 years or more from the expected start of the mortgage term (or for the duration of the contract if less than 5 years), mortgage lenders must consider the impact of likely future interest rate increases on affordability. When conducting this assessment, lenders should consider the variable interest rates that would take effect during the first 5 years of the mortgage contract, including reversion rates, if applicable. In coming to a view on future interest rates, mortgage lenders should have regard to market expectations and even where rates are expected to fall over those 5 years, they must assume that interest rates will rise by a minimum of 100 basis points over that period. In June 2014, the FPC recommended a higher minimum stressed rate of 300 bps above the prevailing rate after conducting a quantitative assessment of the impact of the action in two alternative scenarios. The FPC has maintained this recommendation since June 2014 with only one minor revision: in December 2017, the FPC clarified that the 300-basis-point stress should be applied to the mortgage reversion rate, instead of the mortgage origination rate. With average reversion rates of about 4 percent, this meant households were being assessed against a 7 percent stressed interest rate, on average.

85. The FSAP considered the FPC 2019 view that these measures should remain in place through the cycle. If these measures are not available for countercyclical macroprudential policy actions in the housing market, some consideration must be given to what measures may be available if developments in the housing market call for it. The FSAP also notes that tying the mortgage affordability test to monetary policy could result in a sudden market impact when that policy normalizes. It is worth noting that a 300-basis-point spread on a reversion rate, which changes with monetary policy rates, may be less appropriate when monetary policy rates rise.

86. In December 2021 the FPC judged that it could deliver its macroprudential objective in a simpler, more predictable, and more proportionate way by maintaining only the LTI recommendation. Analysis suggests that the LTI flow limit guards more effectively against unsustainable household indebtedness than the affordability test. Removing the affordability test, while maintaining the FCA´s responsible lending rules under its MCOB framework would only marginally affect the numbers of households holding "high LTI" mortgages and aggregate household indebtedness in a scenario of rapid house price growth. At the same time, removing the affordability test would make the FPC mortgage market recommendations simpler and more predictable. The analysis substantiating the FPC judgment assumes that the FCA maintains the requirement to consider the effect of future interest rate rises under its MCOB framework; see Box 3 for discussions on that framework. Based on this analysis the FPC has decided to consult, in the first half of 2022, on withdrawing its affordability test.

87. Mortgage market measures in the United Kingdom have thus far been broadly effective in leaning against the buildup of systemic risk. The measures were well substantiated and the FPC and Bank of England, with the support of the FCA, continue to analyze their effectiveness, leakages, and potential improvements. The FSAP notes that, as intended, the number of more highly indebted households has not increased while these measures have been in place (Figure 3, panel 5). The FPC reviews these measures regularly and substantiates its discussions and decisions about these measures in its records and *Financial Stability Reports*.

88. The FPC judged, in its December 2021 review of the mortgage market recommendations, that the LTI flow limit is likely to deliver the appropriate level of resilience to the U.K. financial system through the cycle, without the FPC's affordability stress test. In the first half of 2022, the FPC will therefore consult on withdrawing its recommendation on the affordability stress test, noting that the FCA's Mortgage Conduct of Business framework still plays an important role (see Box 3). The FSAP views the FPC's affordability stress test recommendation as less appropriate through the cycle. However, any removal of the FPC's recommendation of a minimum of 300bp stress test on mortgage reversion rates, at this juncture, will require careful consideration, as the mean LTI has been increasing and the rise in housing prices threatens to amplify those developments.

B. Countercyclical Capital Buffer

89. The FPC's primary objective in setting the Countercyclical Capital Buffer (CCyB) is to ensure that the banking system can withstand stress without restricting essential services, such as the supply of credit to the real economy. The FPC intends to adjust the CCyB to build resilience in the U.K. banking sector as systemic risks evolve. Its intent is to both increase the buffer during times when systemic risk is building and release the buffer once risks abate or materialize, thus enhancing the ability of the banking sector to support the real economy during the stress (see Box 4). The FPC's stylized "financial cycle." Although an increase of the CCyB may contain credit growth, that is not the main objective of its use. The FPC argues that other macroprudential measures would be more suitable to mitigate excessive credit growth.

90. The FPC uses a list of 17 core indicators to inform its decisions on the level of the CCyB. The core indicators include: (1) nonbank balance sheet stretch, which includes credit growth and the external position; (2) conditions and terms in markets, which includes the VIX and lending spreads; and (3) bank balance sheet stretch, which includes capital and liquidity measures and market-based resilience measures. In December 2020, the list of indicators changed slightly; the FPC removed average risk weights and short-term wholesale funding indicators from the bank balance sheet stretch indicators. The FPC does not assess the indicators against any specific thresholds, although it does regularly review a table of the indicators against historical peaks, troughs, and averages. The FPC's CCyB decisions are also informed by the results of the stress tests.

91. The FPC Record from November 2015 states that after a period of recovery, but before risks are elevated, the CCyB should be in the region of 1 percent.[41] The judgment to set the CCyB's neutral or standard risk rate in the region of 1 percent was based in part on an analysis in Brook et al (2015), which concluded that there would be benefits to maintaining U.K. banks' Tier 1 capital in the region of 10–14 percent in standard risk environments.[42] The FPC noted that a positive CCyB rate in a standard risk environment would create more scope to support the economy through cuts in the CCyB, as risks materialized. Additionally, uncertainty involved in measuring risk and the 12-month lag between a decision and full implementation of the CCyB motivated the gradual increase of the CCyB before risks reached elevated levels. In 2016, as part of the FPC's ongoing review of the CCyB, a stress test concluded that a CCyB rate in the region of 1 percent in a standard risk environment would give the U.K. banking system the capacity to absorb projected losses embodied in the U.K. economic scenario for the stress test. The FPC judged a 1 percent neutral CCyB rate to be appropriate again in 2017 and first quarter of 2019.

92. The FPC announced an increase in the CCyB from 0 percent to 0.5 percent in March 2016, in line with its previous communication that the neutral CCyB rate was in the region of 1.0 percent. In its March 2016 meeting the FPC judged that those risks were neither subdued nor elevated. In line with that judgment, it decided to raise the CCyB rate to 0.5 percent as a step towards the 1 percent neutral rate. Uncertainty about the effects of the increase on credit

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[41] *Record of the Financial Policy Committee meetings, 25 and 30 November 2015*, paragraphs 75–81

[42] Brooke, Martin, et al., *Measuring the macroeconomic costs and benefits of higher U.K. bank capital requirements*, Bank of England Financial Stability Paper 35 (2015): 1–55.

conditions and the macroeconomy suggested this measured increase. The increase was to take effect after 12 months.[43]

Box 4. United Kingdom: The FPC's Stylized "Financial Cycle"

The FPC uses a stylized "financial cycle" to align the capital buffer to the threat of loss in the banking sector, based on four stages. The FPC does not expect that the financial system will always move through these stages in the same order. The following describes the four stages and the FPC's current stance on the CCyB level for each stage.

- Stage 1: Risks facing the financial system are very subdued: the post-crisis repair phase. Risks facing the financial system will normally be subdued in a post-crisis repair and recovery phase, as borrowers and financial intermediaries repair their balance sheets. As such, balance sheets are not overextended. Asset and property prices tend to be low relative to assessed equilibrium levels. Credit supply is generally tight, and the risk appetite of borrowers and lenders tends to be low. The probability of banks coming under renewed stress is lower than average. In these environments the FPC would expect to set a CCyB rate on U.K. exposures of 0 percent.
- Stage 2: Risks in the financial system re-emerge but are not elevated: a standard risk environment. In this risk environment, borrowers tend not to be unusually extended or fragile, asset prices are unlikely to show consistent signs of over-, or under-, valuation, and measures of risk appetite are likely to be in line with historical averages. Large losses are possible, but they are in the tail of the distribution of possibilities. The FPC intends to set a positive CCyB rate after the economy moves into this phase. It currently expects, in this period, that the CCyB would be in the region of 2 percent.
- Stage 3: Risks in the financial system become elevated: stressed conditions become more likely. As risks in the financial system become elevated, borrowers are likely to stretch their ability to repay loans, underwriting standards are generally lax, and asset prices and risk appetite tend to be high. Investors assume risks are to be low at the very point they are high. The distribution of risks to banks' capital at this stage of the financial cycle might have a fatter tail. Stressed outcomes are more likely. In such environments, the FPC would expect to increase the CCyB rate above 2 percent.
- Stage 4: Risks in the financial system crystallize. Once losses have crystallized, reducing the CCyB allows banks to recognize those losses without having to restrict lending to meet capital requirements. This will help to ensure that capital accumulated when risks were building up can be used, thus enhancing the ability of the banking system to continue to support the economy in times of stress. The FPC may cut the CCyB rate, including, where appropriate, to 0 percent.

93. **However, the FPC decided on July 1, 2016, to reduce the CCyB rate from 0.5 percent to 0 percent of banks' U.K. exposures, with immediate effect, due to the "crystallization of risks around the referendum."**[44] The increase in the CCyB rate to 0.5 percent never came into effect. The FPC decided at its subsequent meeting to lower the CCyB rate to 0 percent, following the U.K. referendum to leave the European Union. Market turbulence, including a sharp decline in the sterling exchange rate and bank share prices, motivated this policy measure. The FPC reinforced its decision with forward guidance that the FPC expected to maintain a 0 percent U.K. countercyclical capital buffer rate until at least June 2017.

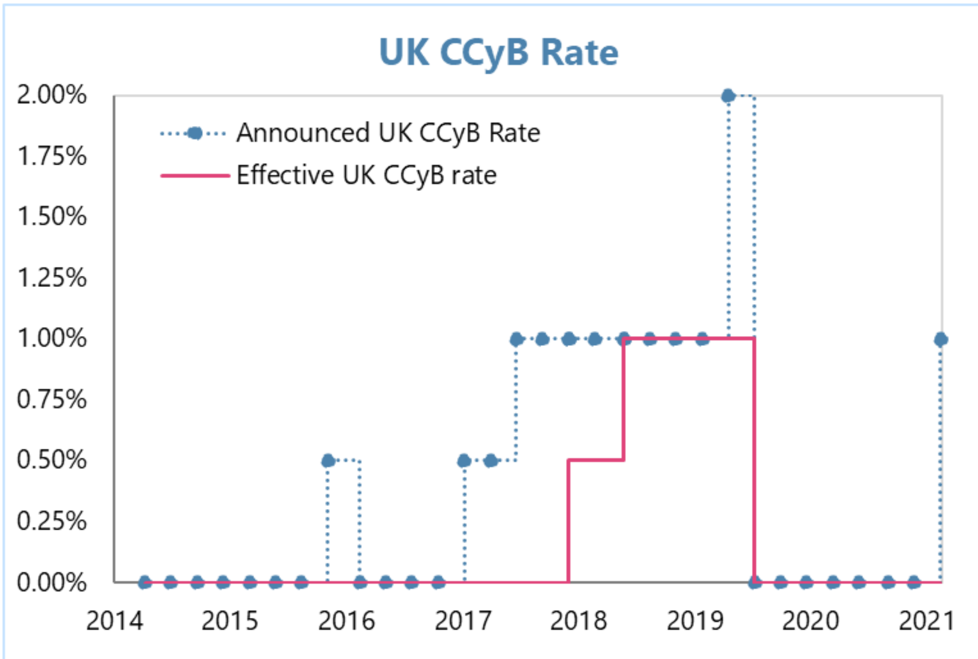
94. **The FPC increased the CCyB rate to 0.5 percent in June 2017 and 1 percent in November 2017.** The FPC assessed that the overall domestic environment was at a standard risk

[43] *Record of the Financial Policy Committee meeting*, 23 March 2016.

[44] *Record of the Financial Policy Committee meeting*, 28 June, and 1 July 2016.

level in June 2017. On that basis, the FPC raised the CCyB rate to 0.5 percent, in line with its strategy to raise it gradually towards the standard risk level of 1 percent. The FPC communicated in its June decisions it expected to raise the CCyB rate to 1 percent in November 2017, which it subsequently did. The increases took full effect in November 2018 (Figure 4).

Figure 4. United Kingdom: CCyB Decisions and Activations by The Bank of England



Sources: Bank of England (BOE); and FPC recommendations.

95. The FPC raised the U.K. CCyB to 2 percent in December 2019, effective 12 months hence, and announced that the 2 percent CCyB was its new neutral, standard risk level. The main objective of the increase in the standard risk environment CCyB was to improve the responsiveness of capital requirements to economic conditions, resulting in banks being better able to absorb losses and maintaining lending through the cycle. The FPC also expected to lower the economic cost of the buffer build-up, by moving early, before risks were elevated. It expected overall loss-absorbing capacity to stay broadly unchanged, as the PRA reduced Pillar II capital requirements accordingly.[45] The decision to shift the balance of capital requirements from Pillar II to CCyB, while improving the scope of responsiveness of capital to economic conditions, its increased simplicity may favor banks with complex activities.[46]

96. The FPC lowered the CCyB rate from 1 percent to 0 percent in March 2020 as it recognized the potential severity of the COVID-19 pandemic effects. The FPC lowered the CCyB rate from 1 percent to 0 percent to reduce the pressure on banks to restrict the provision of

[45] BOE/PRA Policy Statement PS15/20, *Pillar 2A: Reconciling capital requirements and macroprudential buffers*, July 2020.

[46] See the IMF's Banking Sector technical note. Also, the CCyB would need to have been between 3.5 percent and 5 percent to absorb losses of the GFC. See Mark Carney, *The Grand Unifying Theory (and practice) of Macroprudential Policy*, March 5, 2020.

financial services during the pandemic. The FPC took this decision in concert with a few other actions taken by the BOE's Monetary Policy Committee (MPC) and the Prudential Regulation Committee (PRC) (see the discussion below on the pandemic response).

97. The United Kingdom continues to be at the forefront in the implementation of the countercyclical buffer. The FPC was among the first authorities to communicate that the CCyB rate should be positive in a standard risk environment. The announcement in 2016 was followed by additional motivation with stress test analysis, further increasing the transparency of the FPC's decision making process. The forward guidance the FPC gave when it lowered the CCyB in June 2016 was innovative and gave U.K. banks assurance that they could use the buffer. The 2019 increase in the neutral level of the CCyB was well communicated and the collaboration with the PRA further supported the decision.

98. In December 2021, the FPC took appropriate decisions to rebuild resilience by reestablishing the countercyclical capital buffer at 1 percent, effective December 13, 2022. The FPC judged that those risks to U.K. financial stability have returned to around their pre-Covid levels, although uncertainty about the evolution of the pandemic and economic outlook remains. If the U.K. economic recovery proceeds broadly in line with the MPC's central projections, and absent a material change in the financial stability outlook, the FPC is expected to increase the rate further to 2 percent in the second quarter of 2022. The FSAP supports the gradual reestablishment of the CCyB buffer in line with the FPC's stated objective of raising the CCyB in measured steps to the 2 percent standard risk environment level.

C. Asset Management

99. The international policy community has heightened the focus on first-mover risks in open-ended investment funds in recent years. Some open-ended investment funds have a liquidity mismatch between the daily redemption they typically offer investors and relatively less liquid assets in their portfolios. If not properly managed or mitigated, that mismatch can create a first-mover advantage under stress, which has potential implications both for investor protection, when sales necessitated by first movers redeeming from a fund potentially leave remaining investors with less-liquid or distressed assets, and financial stability, as rapid redemptions can force fund managers to sell assets at fire-sale prices, leading to market contagion. The international policy community, including the FSB, IOSCO, BIS, and IMF, have increasingly noted the growth in open-ended funds since the GFC. Occasional stress episodes have highlighted some first-mover risks, particularly for funds investing in relatively illiquid assets like bonds, loans, and real estate. The BIS noted in a December 2021 report that in its view the tools that open-ended bond funds use to manage investor redemptions are not necessarily sufficient to promote financial stability.

100. The FPC first identified the liquidity mismatch in open-ended funds as a potential financial stability risk in 2015. In 2015, BOE and FCA staff surveyed 17 asset management firms about their strategies for managing liquidity in normal and stressed environments for an analysis in the December 2015 FSR.[47] The FPC concluded then that first-mover risks were minimal, as fund

[47] *Record of the Financial Policy Committee meetings, 25 and 30 November 2015*.

managers could use swing pricing or dilution levies to pass the costs of redemptions on to redeeming investors. The FPC made no recommendations but noted that it supported ongoing work by the FCA and, on an international level, the FSB.[48]

101. Suspensions by open-ended property funds after the Brexit referendum in June 2016 highlighted the liquidity-mismatch issue and led to further FCA analysis and policy proposals. Property funds have a more significant structural liquidity mismatch than most open-ended funds due to the illiquidity of real estate assets. Within two weeks of the June 23 Brexit vote, a half-dozen property funds with £18 billion under management suspended operations amid extraordinary redemptions. The FCA followed up with a discussion paper on the topic in February 2017 and a review of the suspended funds' activities in July 2017. The review found that property funds' use of liquidity management tools, particularly their suspensions and deferrals of redemptions, had been effective in preventing further market uncertainty following Brexit. In September 2019, the FCA created a new fund category for "funds investing in inherently illiquid assets," which the FCA would subject to additional oversight and disclosure requirements. It would also require them to suspend dealing when independent appraisers said there was "material uncertainty" about the value of 20 percent of underlying real estate properties.

102. The FPC noted the potential financial stability risks of property funds in 2016… The FPC discussed the property fund redemptions in its September and November 2016 meetings. The FPC noted in a special section on commercial real estate in the November 2016 FSR that most of the suspended property funds had reopened or planned to do so by the end of 2016. But it also noted that some funds had sold assets at significant discounts to raise cash and meet redemptions. The FPC observed that further stress in the sector could still pose financial stability risks. The committee issued no formal recommendation at the time but noted its support for the FCA's plan to follow up.

103. … but ultimately decided in 2018 that the FCA's policy reforms were likely to be sufficient to mitigate these risks, given the relatively small size of the sector. Appropriately, the FCA brought its proposed policy changes to the FPC in 2018, several months before publishing its consultation paper. At the "Issues" meeting prior to its second-quarter meeting, the FPC considered whether property funds posed financial stability risks and whether the FCA's proposed reforms were sufficient from a financial stability perspective. After considering the arguments presented in a joint FCA-BOE staff presentation, the FPC decided that, provided they were implemented as intended, the FCA's proposed reforms were beneficial to U.K. financial stability. It described the different sides of the issue in its October 2018 meeting records. The FPC noted that other countries had adopted more fundamental reforms to open-ended property funds. For example, Germany required investors to have a minimum two-year holding period and a one-year notice period for redemptions. The FPC noted that funds already had the flexibility to set longer notice periods and that the FCA's proposals provided incentives to do so. The FPC also noted that open-ended property funds accounted for only 5 percent of commercial real estate investment; at that size, BOE analysis suggested that forced selling by property funds under stress would not have a significant impact on commercial real estate

[48] In December 2015, IOSCO published results of a 26-nation survey of liquidity management tools that included the U.K. contribution. See *FR28/2015 Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members*.

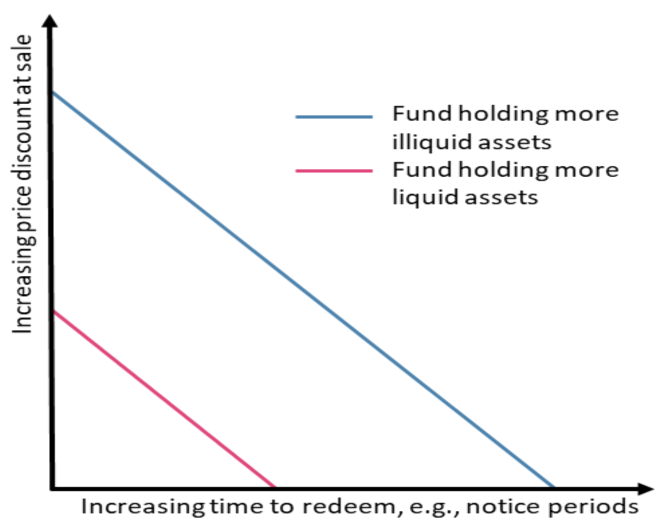
prices. The FPC called for further analysis of the issue and said it would revisit the possibility of minimum notice periods if funds grew to a more significant size.

104. For the broader open-ended fund sector, particularly those investing in relatively illiquid bonds and loans, the BOE, FPC, and FCA increasingly looked to coordinate and lead international work to address liquidity-mismatch risks since the last FSAP. The BOE and FCA have sought international consensus through the FSB and IOSCO on reforms that would better align funds' redemption terms with the liquidity of their assets. FCA staff chaired the IOSCO's asset management committee from 2016 to 2019 and currently hold the vice-chair position.[49] With BOE and FCA input, the FSB published recommendations to address liquidity mismatch and other asset management vulnerabilities in February 2017 and IOSCO published more detailed recommendations on liquidity risk management in February 2018.

105. In the December 2019 FSR, the FPC published its own principles for improving the consistency between the liquidity of a fund's assets and its redemption terms, going beyond FSB and IOSCO's high-level recommendations. The FPC's principles focused on liquidity measurement, swing pricing, and redemption notice periods: (1) assessments of fund liquidity should reflect either the discount or time period needed to sell underlying assets; (2) redemption prices investors receive should reflect the discount needed to sell the underlying assets within the redemption notice period (for example, through swing pricing); and (3) redemption frequency or notice periods should reflect the time needed to sell underlying assets without further discounts. The FPC's principles suggested that various mixes of swing pricing and extended notice periods could be appropriate (Figure 5). The FPC said it would consider how it could implement these principles—including the potential calibration of liquidity measures and redemption terms—after the BOE and FCA completed the liquidity-mismatch review the FPC had requested.

Figure 5. United Kingdom: Stylized Combination of Price Discounts and Notice Periods

(Needed to Reduce Incentives to Redeem Ahead of Others)



Sources: IMF; Bank of England.

[49] IOSCO, *IOSCO welcomes new leadership of IOSCO Board committees*, November 21, 2016.

106. The pandemic crisis led to widespread suspensions by property funds. Most U.K.-domiciled property funds suspended redemptions during the pandemic crisis due to valuation concerns, and many remained suspended into 2021. Although the FCA's rules on mandatory suspensions for funds where there is material uncertainty about the valuation of 20 percent of underlying property only came into effect in September 2020, funds acted in the spirit of the rules in March 2020. This followed the Royal Institution of Chartered Surveyors recommendation that property appraisers use the material uncertainty clause in valuations on March 17. From the FCA's point of view, the scenario played out as intended under its new rules, as funds suspended redemptions more consistently and quickly than they had during the 2016 Brexit episode.

107. The suspensions also provided an opportunity for the FCA to propose mandatory minimum notice periods for property funds. The suspensions limited the risk of a disorderly market caused by investors trying to sell their holdings while the FCA led a public discussion of notice periods. The FCA's consultation paper sought views from the public on a 90-day or 180-day notice period requirement. In its paper, the FCA noted that the FPC's principles on liquidity mismatch from December 2019 had led it to reconsider the use of notice periods and other possible options to address first-mover risks in property funds. The FCA published the feedback it had received on the consultation in May 2021and is looking to finalize its policy position.

108. The BOE-FCA report on liquidity management in U.K. open-ended funds documented widespread redemptions and diverse application of swing pricing during the pandemic. The BOE and FCA published their in-depth report of liquidity management practices in March 2021, responding to the FPC's 2019 request. The report was partly based on a survey of 51 firms covering 272 funds invested in less liquid assets with total assets under management of £137 billion, mostly corporate bond funds, about their activities between the fourth quarter of 2019 and the second quarter of 2020. Most funds said they had experienced net outflows during the pandemic, although BOE interventions quickly stabilized financial markets. Most responded with swing pricing: both the number of funds using swing prices and the frequency of its use increased during the episode. The approach to swing pricing varied widely across funds. To calculate swing factors, most fund managers used bid-ask spreads, typically alongside transaction costs; few considered the potential impact of redemption on the broader market, apparently due to the complexity of such an evaluation. The survey suggested that most corporate bond funds may be over-estimating the liquidity of their fund holdings. It provided no information on the effectiveness of redemption notice periods, as none of the surveyed funds had a notice period in place.[50]

109. The BOE and FCA have put forward a possible framework for liquidity classification and the calculation and use of swing pricing by open-ended funds. The joint BOE-FCA study released in 2021 showed that fund managers used swing pricing frequently but inconsistently during the Covid crisis. Funds typically set swing factors to protect investors from dilution. In March

[50] A recent BIS paper noted further contagion related to open-ended bond funds in March 2020: investors were much more likely to redeem in response to poor performance than in normal times; open-ended bonds funds with common holdings experienced redemption spillovers; and bonds owned by open-ended funds performed worse and had worse liquidity than similar bonds not owned by these funds. Fund managers also hoarded cash, aggravating procyclical market effects (BIS *Quarterly Review*, December 2021, pp. 37–51).

2021, the FPC judged that the calculation and application of swing pricing could in principle be enhanced to better address the potential financial stability risks associated with first-mover advantage. Bank and FCA staff have proposed a possible framework for enhancing swing pricing. The FPC also considered that a consistent and more realistic liquidity classification is an essential first step towards ensuring fund managers can manage liquidity mismatches. Bank and FCA staff have set out a possible framework for consistent and realistic liquidity classification of a fund's assets. However, they acknowledge that for this to be more effective, it would need to be applied on a global basis.

110. On a parallel track, the FCA recently created a new fund regime specifically designed to enable managers to set up funds to invest in long-term illiquid assets. The BOE, HMT, and FCA convened an industry Working Group on Productive Finance in November 2020 to develop practical solutions to the barriers to investing in less liquid assets, focusing mainly on barriers faced by defined-contribution pension schemes. This included supporting the development of an authorized open-ended fund structure for long-term investments—the Long-Term Asset Fund (LTAF) structure. The Working Group published a report in September 2021. The FCA issued a policy statement with final rules in October 2021 for long-term asset funds (LTAFs). The stated goal is to facilitate investment in assets such as venture capital, private equity, private debt, real estate, and infrastructure. LTAF managers need to ensure that their redemption policies are consistent with the liquidity profile of the fund, and that this must at a minimum include no more frequently than monthly dealing and minimum 90-day notice on redemptions. The rules also require the governance body of the fund to make a formal annual assessment of various matters, including how the liquidity of the fund was managed in the interests of investors and the integrity of the market.

D. 2020 Pandemic Response

111. At the onset of the pandemic, the authorities quickly ramped up their financial market and real economy surveillance and the collaboration among BOE's three policy committees (MPC, FPC, and PRC) and the FCA. The Bank's financial stability analysis shifted from assessing vulnerabilities to evaluating the likelihood of risks materializing in banks, securities markets, corporations, and households. The Bank's policy committees met more frequently, sometimes jointly. On February 24, 2020, the FPC was briefed on the potential impact of COVID-19 on financial stability in the United Kingdom. A week later the FPC received a verbal update on the potential impact of the pandemic jointly with the MPC and PRC. This set the tone for the cooperation of the BOE's three policy committees throughout the pandemic.

112. The Bank put in place heightened oversight and coordination mechanisms, including an information and coordination forum for senior Bank leadership. The forum met daily at the height of the COVID-19 crisis, but later the frequency of meetings was stepped up or down with the risk environment. A similar crisis management framework had been used before, during Brexit, and once activated by the Governors, it was fully functional quickly. The forum supported coordination of policy actions by policy committees in the Bank.

113. The crisis management framework was supported by a secretariat which drew together information from across the Bank into information packets for each meeting. The Secretariat, jointly with different teams from within the Bank and Governors' private offices, decided on the content of the information packages, which was based on several other internal crisis dashboards and indicators. The detail in the packages evolved with the risk environment and different teams within the bank had the ability and flexibility to share relevant information in the meetings.

114. A pack of high-frequency indicators of U.K. household and corporate stress (the "Swarm") was also produced internally to monitor the impact of COVID-19 on the real economy. The pack was initially produced weekly, with the frequency declining as the stress became less acute. These indicators were collected prior to the crisis, but they were further developed to ensure efficient risk monitoring through the crisis. Additionally, a range of bank-level crisis indicators were introduced to monitor each bank's capital and liquidity resilience. These included high-frequency data on deposit flows and drawdowns on credit facilities, as well as forward-looking information from the banks themselves on capital and provisioning.

115. The content of the briefing packs and dashboards evolved with the risk environment and included novel datasets to monitor economic activity during the pandemic. The Bank had set up these meeting mechanisms and dashboards for use in earlier financial stability events, which supported it becoming fully functional quickly. The BOE, PRA, and FCA shared indicators, information, and analysis at the staff level as each agency considered measures in response to the COVID-19 crisis.

116. The FPC and PRC acted in March 2020 to bolster banks' capital cushions to allow them to absorb potential losses and continue lending. The FPC lowered the countercyclical capital buffer (CCyB) to zero and gave forward guidance that it would remain at that level for at least 24 months. The PRC supported this policy with several actions. It issued guidance stating that banks should not increase dividends or other distributions in response to the FPC's lowering of the CCyB. This was reinforced with letters from Sam Woods, the Deputy Governor for Prudential Regulation, to U.K. deposit takers on dividend payments, including those previously announced; share buybacks; and cash bonuses.

117. Additional measures and guidance cushioned the potential procyclical effect of loan loss provisioning on banks' capital, further supporting continued lending through the crisis. The PRA introduced transitional arrangements to smooth the impact of expected credit loss (ECL) accounting on regulatory capital in accordance with the measure introduced by the Basel Committee. In its Guidance on ECL modeling, the PRA recommended firms consider the temporary nature of the shock and fully take into account the government's significant economic support measures when estimating expected credit losses. Also, the PRA issued guidance concerning risk evaluation of loans granted payment deferrals, saying that they should not automatically be moved between risk stages. The PRA, jointly with HMT, announced the delay of the implementation of the Basel 3.1 standard by one year. The PRA announced in May the exclusion of loans under the government's Bounce Back Loan Scheme (BBLS) from the denominator of the leverage ratio (Table 6).

Table 6. United Kingdom: Some Policy Actions Taken During Initial Months of the COVID Crisis

Types of Firms	Policy action	When	Stated objective
Banks	CCyB	3.11.2020	Support credit and absorb losses
Banks	Liquidity and capital buffer usability	3.11.2020	Support credit and absorb losses
Banks	Suspend dividends and cash bonuses	3.11.2020	Support credit and absorb losses
Banks	Accounting IFRS 9, ECL and model guidance	3.20.2020	Support credit and absorb losses
Banks	Pillar II capital requirements set	5.7.2020	Support credit and absorb losses
Banks	Cancel annual stress test	3.20.2020	Alleviate operational burdens
Banks	Postpone liquidity stress test	3.20.2020	Alleviate operational burdens
Banks	VAR calculations	3.30.2020	Avoid procyclical capital req's
PRA supervised firms	Postpone climate exercise	5.7.2020	Alleviate operational burdens
PRA supervised firms	Lowering operational and data review burdens	5.7.2020	Alleviate operational burdens
FCA supervised lenders	Mortgage payment holiday and consumer loan payment deferrals	Various	Support consumers
Asset Managers	Flexibility over best execution	3.31.2020	Market functioning
Asset Managers	Flexibility in reporting 10 percent declines to investors	3.31.2020	Alleviate operational burdens
Asset managers	Easy digital operations, including virtual meetings and electronic signatures	4.6.2020	Alleviate operational burdens

Sources: BOE, ESRB, and Yale COVID-19 Financial Response Tracker.

118. **The authorities also took actions to alleviate operational burdens on financial institutions.** The FPC and PRC agreed to cancel the 2020 annual stress test and amend the timetable of the liquidity stress test to help lenders focus on meeting the needs of U.K. households and businesses. The PRA followed this up with an announcement on May 7 that further detailed its plan to enable it and the firms it regulated to focus their resources on the highest priority work. This included postponement of the climate exercise and insurance stress test, lowering operational and data review burdens for stressed VARs, and Libor transitioning. (See further actions taken by the FCA to alleviate operational burdens in paragraph [121]).

119. **The FPC and PRC jointly announced on several occasions their expectation that banks could draw down all elements of their capital and liquidity buffers to support the economy through the temporary shock.** This was followed with a detailed question-and-answer document. The capital drawdown referred to all capital buffers above the regulatory minimum capital level, including both the capital conservation buffer and the CCyB. The question-and-answer document told banks that they would get a sufficient period to restore the buffers, once the current stress was over. The FPC also announced, based in part on the 12-month implementation lag, that any increase in the CCyB would not take effect until March 2022 at the earliest. For liquidity buffers, the message was the same: banks would get a sufficient period to restore liquidity, once the current stress was over.

120. **In May 2020, the FPC published its judgment that the usable buffers of capital built up by banks were more than sufficient to absorb potential losses and to support the household and corporate sector through the crisis.** BOE staff conducted a desktop analysis of the resilience of the U.K. banking sector to the unfolding stress in May 2020. As described in the interim May 2020 FSR, this analysis supported the FPC's judgment that the major U.K. banks and building societies had sufficient capital to withstand even greater losses. This provided a strong foundation for continuing

to call on banks to continue to use their capital buffers to support credit provisioning through the pandemic.

121. In December 2020, the FPC published its judgment that U.K. banks, in aggregate, were resilient to the unfolding stress. This was based on a forward-looking reverse stress test, conducted in August, which calculated how severe the economic paths for the United Kingdom and global economies would need to be to deplete banks' regulatory capital buffers by 5 percentage points. The exercise concluded that banks' capital would decline that amount only under very severe economic conditions, in which the cumulative loss of economic output associated with the Covid outbreak would be twice as large as the Monetary Policy Committee (MPC) had projected in August 2020. Based on this exercise, the FPC judged that U.K. banks, in aggregate, had sufficient capital buffers to lend in, and remain resilient to, a wide range of possible outcomes for the United Kingdom and global economies.

122. The FCA also played an important role in supporting financial stability during the pandemic. The FCA introduced mortgage and consumer credit payment deferrals for customers facing payment difficulties due to circumstances related to COVID-19, and moratoriums on the repossession of homes, goods, and vehicles. The PRA looked to the FCA's guidance when issuing its own expectations to firms on evaluating credit risk. The FPC also considered the impact of these payment deferrals on alleviating, in the short run, risks from household debt and on the resilience of the U.K. banking sector. Separately, the issues surrounding Business Interruption (BI) insurance policies are complex and it was recognized that they had the potential to create ongoing uncertainty for both customers and firms. The FCA accordingly sought clarification from the High Court as part of a test case, aimed at resolving the contractual uncertainty around the validity of many BI claims.

123. The FCA implemented several measures and delayed some policy interventions to alleviate operational burdens at firms they regulate. These measures included delaying funds' annual and semiannual reports and giving firms such as asset managers and trading venues more time to return supervisory reports. The FCA also acted to help companies continue their operations while complying with social-distancing measures, by authorizing a broader use of electronic signatures and allowing virtual annual meetings.

124. The FCA established "proximity-to-failure" and "harm-in-failure" frameworks early in the pandemic to identify risks and inform early interventions at firms that were the least resilient and potentially could cause the worst harm if they failed. For each firm the FCA regulates, it assigned an automated, data driven PTF score to rank financial resilience and a more subjective HIF score to rank the likely harm from the firm's disorderly failure.[51] The FCA set up a quarterly survey to get updated information from some types of firms from whom they don't collect this level of detailed data in ordinary times. This work was underway before the onset of the pandemic, but the crisis quickened the development of it. The FCA shared this work with the relevant working-level PRA staff for their awareness and review. The FCA is continuing to improve

[51] The framework applies to all the approximately 49,000 firms that the FCA regulates prudentially. Of these, 23,000 firms have received the quarterly COVID-19 financial resilience survey.

these frameworks through back-testing and evaluation, focusing on how to improve the data collection, increase automation, and improve risk evaluation.

125. Support measures have thus far yielded positive results, but vigilance is still called for as they are removed. Lending continued quite well through the crisis, to larger corporations and households, and financial institution losses did not result in market turmoil or failure. Since the exceptional measures were introduced, policy documents and statements have mostly been clear on the duration of temporary measures, and when and how they will be reviewed. Considering that banks have used a wide range of provisioning approaches during the COVID-19 crisis, more work is needed to ensure the adequacy of the ECL allowance. This work includes phasing out the guidance on the treatment of loans with payment deferrals by reintroducing a case-by-case assessment of loans in accordance with pre-crisis accounting and prudential requirements. This could potentially lead to an increase in non-performing exposures when this is done. Scrutiny should focus on any unintended macro-financial spillovers from these developments.

E. Recommendations

126. The FPC should continue to ensure that there are timely information-sharing protocols with the PRA and FCA regarding measures in development that may have potential systemic financial stability implications or interact with macroprudential measures. The authorities followed a model process in 2018, when the FPC considered both FCA and BOE points of view before deciding that, provided they were implemented as intended, the FCA's proposed reforms to open-ended commercial real estate funds were beneficial to U.K. financial stability.[52]

127. A removal of the FPC's affordability stress test at this juncture will require careful consideration, as mortgage indebtedness has been increasing as measured by mean LTI, a development which threatens to be amplified by the rise in housing prices. The FPC made a well-substantiated judgment in December 2021 that the LTI flow limit is likely to deliver the appropriate level of resilience to the U.K. financial system through the cycle, without the FPC's affordability stress test. The judgment is supported with strong analysis and clear communication in the FSR. The technical annex to the FSR evaluates the impact of the FPC's measures on the U.K. housing market to date and further expands the analysis with a simulation of the impact of the measures in a scenario of rapid house price growth. The analysis concludes that even under extreme assumptions, the LTI limit still delivers the large share of benefits of the FPC's measures. Still, the FSAP would like to note that any removal of the FPC's recommendation of a minimum of 300bp stress test on mortgage reversion rates, at this juncture, will require careful consideration. The mean LTI has increased in recent months to a historical high, mostly driven by an increase in LTI ratios below the 4.5 times LTI, which is the FPC's flow limit threshold, but still above 4.0 times LTI. At the same time, housing prices are rising fast, which threatens to further increase household indebtedness.

[52] It was not clear that the FPC discussed the potential profound effects of banks' provisioning on their capital at the onset of the pandemic.

128. The FPC and U.K. authorities should continue to take forward work internationally to strengthen the resilience of the open-ended fund sector in line with the FPC's 2019 principles on liquidity management and the 2021 recommendations. An effective liquidity classification framework should play a role in the design of a fund and in determining appropriate redemption terms.[53] The FSAP supports the new LTAF vehicle with proposed redemption notice periods and the principles the BOE and FCA expressed in their proposed framework for liquidity classification and swing pricing in July 2021. The BOE and FCA did not propose any change in policy towards redemption notice periods, the FPC's third principle from 2019, but they did note that an effective liquidity classification framework should play a role in determining appropriate redemption terms. The FPC, in its July 2021 FSR (p. 36), briefly discussed the third principle in the context of the LTAF and property fund proposals but did not mention the much-larger existing fund sector focused on corporate bonds.

[53] The IMF in recent research similarly noted the potential effectiveness of both swing pricing and policies to limit redemption frequency for open-ended funds that invest in illiquid assets. See IMF, *Investment Funds and Financial Stability: Policy Considerations*, September 17, 2021, pp. 31-33.