December 2020: As set out in the October 2020 FPC Record, the introduction of the Capital Requirements Directive V requires the legal basis for the systemic risk buffer (SRB) to change. As such, the FPC would replace the SRB framework with the other systemically important institutions (O-SII) buffer framework. Therefore, references to the 'SRB' in this policy statement should be read as the 'O-SII buffer'.
May 2022: This document has been updated to reflect changes made by the Financial Policy Committee to the O-SII buffer framework as part of its 2021 review. The changes made are set out in Box 1A on pages 6-8.

May 2016

The Financial Policy Committee's framework for the systemic risk buffer

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The Financial Policy Committee's framework for the systemic risk buffer

Background information on the Financial Policy Committee

The Financial Policy Committee (FPC) was established under the Bank of England Act 1998, through amendments made in the Financial Services Act 2012. The legislation establishing the FPC came into force on 1 April 2013. The objectives of the Committee are to exercise its functions with a view to contributing to the achievement by the Bank of England of its Financial Stability Objective and, subject to that, supporting the economic policy of Her Majesty's Government, including its objectives for growth and employment. The responsibility of the Committee, with regard to the Financial Stability Objective, relates primarily to the identification of, monitoring of, and taking of action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system. The FPC is accountable to Parliament.

The Independent Commission on Banking (ICB) recommendations on ring-fencing were implemented through the Financial Services (Banking Reform) Act 2013. The ICB also proposed higher loss- absorbing capacity for ring-fenced banks in the United Kingdom. The Capital Requirements (Capital Buffers and Macro-prudential Measures) Regulations 2014 (as amended) implement Articles 133 and 134 of Directive 2013/36/EU (CRD) and the ICB's recommendations on higher loss-absorbing capacity. The Regulations require that the FPC develop a framework for a systemic risk buffer that will apply to ring-fenced banks and large building societies.

This document was finalised on 25 May 2016 and, unless otherwise stated, uses data available as at 30 June 2015.

Contents

Executive Summary

The economy depends on critical financial services provided by financial institutions, in particular large banks and building societies. The crisis was an example of how the economy can be seriously damaged when such firms become distressed and restrict lending to the economy. It is therefore important that such institutions carry higher levels of capital so that they can absorb losses in stress and continue to maintain critical financial services to the real economy, particularly the provision of credit. This principle has been recognised in the Basel framework for global systemically important banks (G-SIBs), which has been implemented through European legislation and subsequent changes to UK legislation.

The Basel and European frameworks also recognise that banks can be systemically important in a domestic context and may likewise warrant higher capital to absorb stress. The Systemic Risk Buffer (SRB) increases the capacity of UK systemic banks to absorb stress, thereby increasing their resilience relative to the system as a whole. This reflects the greater damage these firms would cause to the economy in the event their buffers of equity were exhausted.

The Independent Commission on Banking (ICB) recommendations – implemented through the Banking Reform Act – proposed structural separation of systemically important banking groups in the United Kingdom, through the ring-fencing of critical domestic banking services from risks elsewhere in the financial system. In line with the ICB recommendations, ring-fenced banks and large building societies will be required to have higher levels of capital.

Accordingly, the UK legislation implementing the SRB requires the Financial Policy Committee (FPC) to establish a framework for an SRB that applies to ring-fenced banks, and large building societies that hold more than £25 billion in deposits and shares (excluding deferred shares). As indicated in the FPC leverage ratio policy statement, these firms would also be subject to an additional leverage ratio buffer (ALRB) rate, calculated at 35% of the SRB rate.[1]

Following the FPC's articulation of the overall bank capital framework in the Supplement to the December 2015 *Financial Stability Report*, this document sets out the FPC's SRB framework.[2] The FPC consulted on a draft framework in January 2016. Having carefully considered the comments received during the consultation period, the Committee decided to adopt as final a framework that was broadly the same as that on which it had consulted.[3] In addition, in light of consultation responses on the potential impact of the SRB framework on the allocation of capital across groups, the FPC has made a recommendation to the Prudential Regulation Authority (PRA). That recommendation, which is set out in Chapter 4, seeks to ensure that there is sufficient capital within a consolidated group that includes a ring-fenced bank, and distributed appropriately across it, to address both global and domestic systemic risks.

The ring-fencing of UK banking groups will become effective on 1 January 2019. Ahead of that, the FPC is finalising the SRB framework at this time to provide institutions with more certainty regarding the regulatory capital framework and to provide adequate time for firms to adjust to an increase in capital buffers.[4]

The SRB framework sets out: the criteria for assessing systemic importance; a proxy for measuring and scoring those criteria; a threshold at which firms are considered to be systemically important for this purpose; and the calibration of the SRB for those firms exceeding the threshold.

The FPC intends that larger firms within the population of ring-fenced banks and large building societies should be subject to higher systemic buffers, reflecting the greater economic costs of their distress or failure.

The FPC considers that the main channel by which these firms could cause damage to the financial system and the real economy if they fell into distress is through contraction of their household and corporate lending. Because ring-fencing limits their activities, household and corporate lending is likely to comprise the bulk of these firms' total assets.

Therefore, the FPC's framework uses total assets as a proxy for systemic importance. A framework based on total assets captures the most important determinants of systemic importance while remaining relatively straightforward to implement. It will also not affect firms' choices about which types of assets should be

[1] See Bank of England, *The Financial Policy Committee's review of the leverage ratio,* October 2014, available at: http://www.bankofengland.co.uk/financialstability/Documents/fpc/fs_lrr.pdf

[2] See Bank of England, *Supplement to the December 2015 Financial Stability Report: The framework of capital requirements for UK banks,* December 2015, available at: www.bankofengland.co.uk/publications/Documents/fsr/2015/fsrsupp. pdf.

[3] See Bank of England, *The Financial Policy Committee's framework for the systemic risk buffer: A Consultation Paper,* January 2016, available at: http://www.bankofengland.co.uk/financialstability/Documents/fpc/srbf_cp.pdf.

[4] The Bank is required under the SRB Regulations to publish the criteria, methodology and mapping for the application of the systemic risk buffer – see *The Capital Requirements (Capital Buffers and Macro-prudential Measures)* (Amendment) Regulations 2015 (2015/19), available at: www.legislation.gov.uk/uksi/2015/19/regulation/2/made:.

held inside and outside the ring-fence. Box 1 summarises the FPC's SRB framework.
The SRB (including through its impact on the ALRB) is expected to add around 0.5% of risk-weighted assets to equity requirements of UK systemic banks overall. This forms part of the FPC's judgement — as set out in the December 2015 *Financial Stability Report* — that non time-varying Tier 1 components of the overall capital framework for the system as a whole should sum to around 11% of risk-weighted assets, assuming those risk-weighted assets are properly measured.[1]

Following a request from the Treasury Committee, the Governor of the Bank of England sent a letter on 5 April 2016 to the Chairman of the Treasury Committee to explain the FPC's capital framework for major UK banks as set out in the Supplement to the December 2015 *Financial Stability Report.*[2] [3]

The Treasury Committee acknowledged that capital issues are complex and remain a source of debate. As such, the Treasury Committee announced on 15 April 2016 that it will initiate further work on UK capital standards for banks.[4]

The FPC will consider any new evidence from the Treasury Committee's inquiry. Amendments to the SRB framework can be made as appropriate including through the two-yearly reviews of the framework mandated under the SRB Regulations, beginning in 2018.[5] The FPC will also review progress on international work to address definitional shortcomings in measures of risk-weighted assets; the effectiveness of arrangements for resolving banks that failed; and the economic costs of higher capital requirements in order to check that the judgements underlying its calibration of the overall capital framework remain valid. It will also monitor firms' ring- fencing plans and the distribution of credit provision within the banking system more generally.

Box 1

Summary of FPC's SRB framework

- Systemic importance is measured and scored using the total assets of ring-fenced bank sub-groups and building societies in scope of the SRB, with higher SRB rates applicable as total assets increase through defined buckets (see table).
- Those with total assets of less than £175bn are subject to a 0% SRB. The FPC expects the largest SRB institutions, based on current plans, to have a 2.5% SRB initially. Thresholds for the amounts of total assets corresponding to different SRB rates could be adjusted in the future (for example, in line with nominal GDP or inflation) as part of the FPC's mandated two-year reviews of the framework.

	Total Assets (£bns)	
Risk weighted SRB rate	Lower threshold	Upper threshold
0%	-	<175
1%	175	<320
1.5%	320	<465
2%	465	<610
2.5%	610	<755
3%	≥755	

- In July 2015, the FPC issued a Direction and a Recommendation to the PRA to implement the leverage ratio framework for UK G-SIBs and other major UK banks and building societies on a consolidated basis. The FPC anticipates that the leverage ratio framework will be applied to UK G-SIBs and other major UK banks and building societies at the level of the ring-fenced bank sub-group from 2019 (where applicable), as well as on a consolidated basis.

[1] See Bank of England, *Supplement to the December 2015 Financial Stability Report: The framework of capital requirements for UK banks,* December 2015, available at: www.bankofengland.co.uk/publications/Documents/fsr/2015/fsrsupp.pdf.

[2] See Transcript of the Treasury Committee meeting, *Oral evidence: Bank of England February 2016 Inflation Report*, 23 February 2016, available at: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/treasury-committee/bank-of-england-inflation-reports-hearings-session-201516/oral/29584.pdf

[3] See *Letter to Rt Hon Andrew Tyrie MP, Chairman, Treasury Select Committee from Mark Carney, Governor, Bank of England,* 5 April 2016, available at: http://www.parliament.uk/documents/commons-committees/treasury/Correspondence/Mark-Carney-Governor-Bank-of-England-to-Rt-Hon-Andrew-Tyrie-MP-5-04-16.pdf.

[4] See Response from Rt Hon. Andrew Tyrie, MP (Chairman of the Treasury Select Committee), 15 April 2016, available at: http://www.parliament.uk/business/committees/committees-a-z/commons-select/treasury-committee/news-parliament-2015/srb-correspondence-chairs-comments-15-16/.

[5] See *The Capital Requirements (Capital Buffers and Macro-prudential Measures)* (Amendment) Regulations 2015 (2015/19), available at: www.legislation.gov.uk/uksi/2015/19/regulation/2/made:

Box 1A

Amendments to the FPC's framework for the O-SII buffer following the FPC's review in 2021

1. The Financial Policy Committee ('the FPC' or 'the Committee') must have a framework for the O-SII buffer and review this framework at least every second year.[1]

2. Following its December 2020 review, the FPC was not required to review the framework again until December 2022. The Committee decided, however, to undertake a review in 2021 Q3 in line with its commitment in the 2020 Q3 Record and 2020 Financial Stability Report to consider information that became available during the Covid-19 (Covid) shock about how the framework operates in stress.

3. In response to the 2021 Q3 review, the Committee amended its framework as follows:

(i) Changed the metric used to determine O-SII buffer rates from total assets to the UK leverage exposure measure.

(ii) Recalibrated the thresholds that determine O-SII buffer rates to prevent an overall tightening or loosening of the framework relative to its pre-Covid level.

4. Details of how the UK leverage exposure measure is calculated can be found in the UK Leverage Ratio Framework.[2]

5. The amendment ensured that the framework still addressed the key systemic risk intended by the FPC: the risk that a distressed ring-fenced bank or large building society disrupts the supply of credit to the real economy. It achieved this as follows:

(i) First, it excluded from the framework central bank reserves, which grew significantly during the pandemic but do not reflect a bank's potential to disrupt the credit supply. This exclusion mitigates the risk that future changes in central bank balance sheets inadvertently affect banks' lending decisions by interacting with the O-SII buffer. It also allows banks to draw on central bank liquidity as necessary without becoming constrained by the associated effect on buffer requirements.

(ii) Second, it brought into the framework committed but undrawn credit facilities. Experience during the pandemic suggested that these can form an important part of the credit supply in stress.

6. The FPC decided that the changes would come into effect in time for the PRA to assess rates under a revised framework in December 2023, based on end-2022 financial results. Rates set in 2023 would then apply from January 2025.

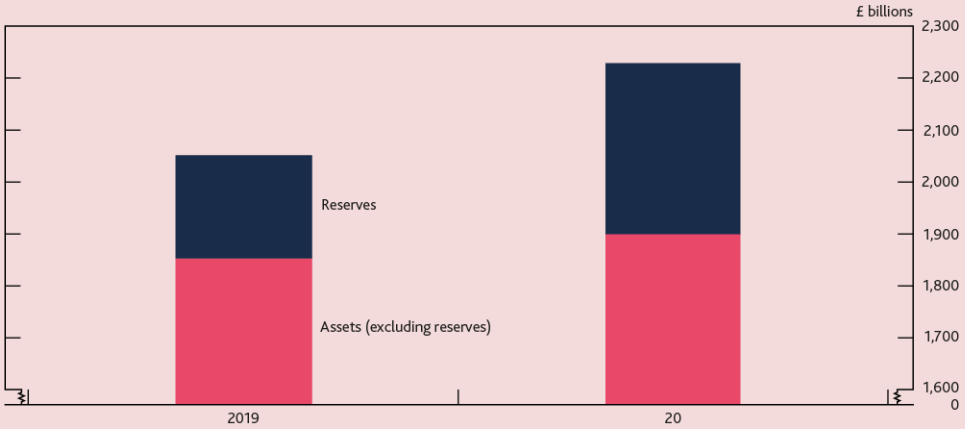
7. The FPC consulted on these amendments in an FPC Consultation Paper[3] which was published on 15 November 2021. The Consultation Paper gives a detailed explanation of the change, including a cost-benefit analysis. The FPC's Response published on 23 May 2022 sets out feedback on responses to this consultation and confirms the FPC's final policy decision.

Motivation for the amendments

8. Total assets across ring-fenced banks grew significantly in 2020 (Chart A). This was not driven by lending (which stayed broadly constant) but by very high growth in central bank reserves. Such growth does not reflect an increase in a bank's potential to disrupt the credit supply, the key externality that the FPC intends the O-SII buffer to address.

[1] See The Capital Requirements (Capital Buffers and Macro-prudential Measures) Regulations 2014 Part 34ZB and 34ZG ('The Capital Buffers Regulation').
[2] See Bank of England, An FPC Response | PRA Policy Statement | PS21/21: The UK leverage ratio framework, October 2021. Note that in the UK Leverage Review Framework, the measure referred to in this paper as the 'UK Leverage exposure measure' is called the 'Total Exposure Measure'.
[3] See Bank of England Consultation Paper, Amendments to the FPC's framework for the O-SII buffer, November 2021.

Chart A: Aggregate assets and central bank reserves for ring-fenced banks [(a)] [(b)]



(a) Ring-fenced banks of major UK banks and Nationwide.
(b) Reserves shown here are based on the definition used in the UK leverage ratio.

9. The evolution in balance sheets demonstrated that total assets and lending do not necessarily move together over time in a stress, suggesting that total assets were no longer the most appropriate proxy for a bank's potential to disrupt the credit supply.

10. The growth in central bank reserves also had the effect of pushing banks towards O-SII buffer rate thresholds, irrespective of their potential to disrupt the credit supply. This risked creating an incentive for banks to manage the size of their balance sheets by constraining lending. It also risked influencing banks' decisions about their use of central bank liquidity.

11. In light of these factors, the FPC considered an alternative proxy that excluded central bank reserves would be more appropriate.

12. Experience during the pandemic also suggested that committed but undrawn credit facilities can form a key part of the credit supply. In its May 2020 Financial Stability Report, the FPC observed that in 2020 Q1, the major UK banks had expanded their net lending by around £20 billion, as business drew down committed credit lines. This compared to a reduction in net lending of £3 billion over 2019.[4] Committed but undrawn credit facilities are not captured by total assets, which again suggested that total assets was no longer the optimal metric to determine O-SII buffer rates.

13. The FPC therefore changed the metric used to determine O-SII buffer rates from total assets to the UK leverage exposure measure, as this both excluded reserves and brought committed but undrawn credit facilities into the framework.

Detail of amendments to the O-SII buffer framework

(i) Amended metric to determine O-SII buffer rates

14. The FPC has changed the metric used to determine O-SII buffer rates from total assets to the UK leverage exposure measure. O-SII buffer rates should be determined based on firms' average of quarter-end leverage exposure measure. The use of an average of firms' quarter-end leverage exposure measure will not take effect until after the PRA's December 2023 review of O-SII buffer rates. Thus the December 2023 review will be based on end-20022 leverage exposure measure.

(ii) Recalibrated O-SII buffer rate thresholds

15. The FPC has adjusted the thresholds used to determine O-SII buffer alongside the change in metric, in order to prevent an overall tightening or loosening of the framework relative to its pre-Covid level. The FPC has calibrated this adjustment based on financial results from 2019, before the large expansion in central bank reserves during the

[4] See Bank of England, Interim Financial Stability Report, May 2020.

pandemic.

16. Previously, thresholds were expressed in terms of total assets. Following the FPC's amendments, the revised thresholds are expressed in terms of the UK leverage exposure measure.

17. As at December 2019, the UK leverage exposure measure for banks attracting an O-SII buffer was on average c.£15 billion lower than those banks' total assets. The FPC has therefore reduced the previous O-SII buffer thresholds by a constant £15 billion. This should prevent an overall tightening or loosening of the framework relative to pre-Covid levels. The revised thresholds are set out in Table 1 below:

Table 1: Previous thresholds and recalibrated thresholds for determining O-SII buffer rates

Buffer rate	Previous total asset thresholds (£ billions)	Recalibrated UK leverage exposure measure thresholds (£ billions)
0%	<175	<160
1%	175 to <320	160 to <305
1.5%	320 to <465	305 to <450
2%	465 to <610	450 to <595
2.5%	610 to <755	595 to <740
3%	≥755	≥740

The Financial Policy Committee

Andrew Bailey, Governor
Jon Cunliffe, Deputy Governor responsible for financial stability
Ben Broadbent, Deputy Governor responsible for monetary policy
Dave Ramsden, Deputy Governor responsible for markets and banking
Sam Woods, Deputy Governor responsible for prudential regulation
Nikhil Rathi, Chief Executive of the Financial Conduct Authority
Sarah Breeden, Executive Director for Financial Stability, Strategy and Risk
Colette Bowe
Jon Hall
Anil Kashyap
Elisabeth Stheeman
Carolyn Wilkins
Gwyneth Nurse attends as the Treasury member in a non-voting capacity

1 Introduction

Financial firms need to be able to absorb losses while continuing to provide critical financial services. The failure or near-failure ('distress') of an institution, or institutions, can have consequences well beyond the institution itself. The global financial crisis demonstrated how insufficiently capitalised institutions resulted in severe restrictions to credit supply, which in turn deepened the recession and hampered recovery. The impact of distress or failure is heightened for systemically important institutions, whose size and importance creates the potential for a sharp contraction in lending to cause significant damage to the economy.

Under the SRB Regulations, the FPC is required to produce a framework for the SRB at rates between 0 and 3% of risk-weighted assets (RWAs) and to review that framework at least every two years.[1] The legislation implements the recommendation made by the ICB in 2011 that ring-fenced banks and large building societies should hold additional capital due to their relative importance to the UK economy. The FPC has considered its equality duty, and has set out its assessment of the costs and benefits of the framework.

In this document the FPC is setting out its framework for the SRB that will be applied by the PRA to ring-fenced banks, and large building societies that hold more than £25 billion in deposits and shares (excluding deferred shares), jointly, 'SRB institutions'.

The aim of the SRB is to raise the capacity of ring-fenced banks and large building societies to withstand stress, thereby increasing their resilience. This reflects the additional damage that these firms could cause to the economy if they were close to failure. The FPC intends that the size of a firm's buffer should reflect the relative costs to the economy if the firm were to fall into distress.

The PRA will apply the framework from 1 January 2019 and later this year will consult on elements relating to the implementation of the SRB and its other responsibilities under the framework as set out in Annex 5.[2]

As set out in the Bank of England's December 2015 *Financial Stability Report* and the supplementary '*The Framework of capital requirements for UK banks*', the SRB forms part of the FPC's work on the Medium Term Capital Framework which considered the necessary levels of capital across the banking system.[3]

Overall, based on an analysis of the economic costs and benefits of going concern bank equity, the FPC judged the appropriate non-time-varying Tier 1 capital requirement for the banking system, in aggregate, should be 11% of RWAs, assuming those RWAs are properly measured. As up to 1.5 percentage points of this can be met with additional Tier 1 contingent capital instruments, the appropriate level of common equity Tier 1 capital is around 9.5% of RWAs. This judgement was made on the expectation that some of the deficiencies in the measurement of risk weights would be corrected over time. Until remedies are put into place to address this, the appropriate level of capital is correspondingly higher. On current measures of risk weighting, the FPC judges that the appropriate Tier 1 capital requirement for the banking system is around 13.5% of RWAs.

This assessment refers to the structural equity requirements applied to the aggregate system that do not vary through time. In addition to baseline capital requirements, the FPC intends to make active use of the countercyclical capital buffer that will apply to banks' UK exposures.[4]

Firms in scope

The SRB Regulations set out that SRB institutions – that is, ring-fenced banks, and large building societies that hold more than £25 billion in deposits and shares (excluding deferred shares) – are covered under the scope of the SRB framework. The £25 billion cut-off for building societies reflects the threshold that applies for banking groups to be subject to ring-fencing. Should this threshold change, it is likely that this change would be reflected in the SRB Regulations, therefore affecting the scope of firms subject to the SRB framework.

Given that the ring-fencing regime applies from 1 January 2019, and therefore ring-fenced banks are not currently in existence, the analysis that has informed the framework and calibration is based on existing data and firms' current ring-fencing plans.

As firms' ring-fence structures evolve (including the type and scale of activities that are kept within and outside of the ring-fence), and better data on the ring-fenced banks becomes available, the FPC — in line with its legal

[1] See *The Capital Requirements (Capital Buffers and Macro-prudential Measures (Amendment) Regulations 2015* (2015/19), available at: www.legislation.gov.uk/uksi/2015/19/regulation/2/made:

[2] See Annex 5 for the FPC's and PRA's legal responsibilities with regards to SRB implementation.

[3] See Bank of England, *Financial Stability Report*, Issue No. 38, December, available at: www.bankofengland.co.uk/publications/Pages/fsr/2015/dec.aspx and see Bank of England, *Supplement to the December 2015 Financial Stability Report: The framework of capital requirements for UK banks*, available at: www.bankofengland.co.uk/publications/Documents/fsr/2015/fsrsupp.pdf.

[4] Consistent with this approach, the FPC announced on 29 March 2016 that it was increasing the UK countercyclical capital buffer rate from 0% to 0.5% of RWAs in light of its assessment of the current risk environment and its intention to move gradually. This new setting will become binding with effect from 29 March 2017. More information is available at: http://www.bankofengland.co.uk/publications/Pages/news/2016/032.aspx.

responsibilities — will review the framework, taking these developments into consideration.

The SRB forms part of a set of policy recommendations that contribute to improving the stability of the UK financial system. These are summarised below.

Structural reform

In response to the financial crisis, a number of jurisdictions have introduced (or are in the process of introducing) measures to change the structure of banking groups in order to improve their resilience and resolvability.

The UK structural reform measures are based on the recommendations of the ICB and have been implemented through the Financial Services and Markets Act 2000, as amended by the Financial Services (Banking Reform) Act 2013. The reforms look to ensure that firms continue to provide core activities in the United Kingdom by ring-fencing certain activities in one part of the group.

The changes are intended to ensure that ring-fenced banks are protected from shocks that originate in the rest of their banking group or the broader financial system in order to minimise disruption to the continuity of the provision of core services. They are also intended to ensure that ring-fenced banks, and groups containing these, can be resolved in an orderly manner with minimal disruption to the provision of core services.

The SRB forms part of the ring-fencing regime because it is designed to prevent and mitigate the distress of ring- fenced banks and large building societies, and the disruption of the provision of core services, primarily lending to households and companies.

Resolution

The United Kingdom has put in place a resolution regime in response to the financial crisis, which provides the Bank as the resolution authority with the tools to resolve a failing firm, so that the authorities can intervene to manage the failure of a bank.

Unlike the SRB — which looks to ensure that banks are able to continue lending as they experience stress — the objective of the resolution regime is to allow firms to fail in an orderly fashion, that is, ensuring the continuity of banks' critical functions while protecting financial stability and public funds. The Bank is working to ensure that feasible and credible resolution strategies are in place for individual firms.[1]

The FPC judged, in the Supplement to the December 2015 *Financial Stability Report*, that the existence of credible and effective bank resolution arrangements will materially reduce both the probability and costs of financial crises. These arrangements were assessed to reduce the appropriate equity requirement for the banking system as a whole by about 5 percentage points of RWAs. As set out in Chapter 3, the FPC took these considerations into account in its SRB calibration.

International context

The SRB is part of the UK framework for identifying and setting higher capital buffers for domestic systemically important banks (and building societies) (D-SIBs), which are groups that upon distress or failure could have an important impact on their own domestic financial system and economy compared to non-systemic institutions.

The Basel Committee on Banking Supervision's (BCBS) framework for dealing with D-SIBs complements the Financial Stability Board's initiative on ending 'too big to fail' by focusing on the impact that the distress or failure of banks (including international banks) will have on the domestic economy.[2] As summarised in Annex 1, a number of other countries — both within the European Union and outside it — have already announced, and in some cases implemented, their D-SIB frameworks.

As part of its legal responsibilities under European and domestic legislation, the PRA is required to identify 'Other systemically important institutions' (O-SIIs). Under the PRA framework, this would consist of a wider set of firms than those in scope of the SRB, and these firms will be subject to more intensive supervision by the PRA, including recovery and resolution planning in line with the current approach to "Category 1" firms. However, at this point UK law specifies that, of this category of O-SIIs, only ring-fenced banks and large building societies are subject to additional going-concern capital buffers. Under the Bank of England Act 1998, the FPC can make recommendations relating to the regulatory perimeter if necessary when it identifies risks to financial stability. Accordingly, the FPC will keep under review the extent to which critical activities are provided by ring-fenced banks compared to other entities, including those identified by the PRA as O-SIIs. Where the FPC identifies risks to the provision of critical services to UK households and non- financial companies from the disruption of such activities, the FPC may act as necessary.

[1] See Bank of England, *The Bank of England's approach to setting a minimum requirement for own funds and eligible liabilities (MREL), Consultation on a proposed Statement of Policy*, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/resolution/mrelconsultation2015.pdf.

[2] See Basel Committee on Banking Supervision, *A framework for dealing with domestic systemically important banks,* October 2012, available at: http://www.bis.org/publ/bcbs233.pdf.

2 Feedback on the FPC's systemic risk buffer consultation paper and the FPC's responses

The FPC's public consultation on the SRB ran from 29 January 2016 until 22 April 2016.[1] The FPC received four responses to its consultation.

The respondents raised concerns about particular aspects of the proposed framework including the:

• scope of firms subject to the SRB;

• interaction of the SRB with the buffer for global systemically important banks (G-SIBs);

• interaction of the SRB with Pillar 2A;

• calibration of the SRB; and

• potential competitive implications of the framework.

The responses received have informed the FPC's further consideration of the proposed SRB framework. Below is a summary of the comments received, the FPC's responses to those comments, and revisions to the framework, where applicable.

Scope of application of the SRB

One response requested clarification on the purpose of the SRB and confirmation of the intended scope of application of the SRB framework. The response argued that if the purpose of the SRB was to address the risk associated with restrictions on lending to UK households and non-financial companies, then firms other than ring- fenced banks and large building societies (such as O-SIIs) should be in scope under the rule, as these firms also provide lending to the UK economy.

SRB institutions are expected to account for a substantial proportion of UK household lending and private non- financial corporate lending (see Chapter 3, **Chart 3.1**), reflecting the large aggregate market share of the existing UK banking groups expected to be subject to the SRB. The majority of systemic risk is therefore expected to be addressed by the SRB.

Firms other than ring-fenced banks and large building societies could also pose systemic risks, but this would be more likely to happen through channels other than domestic lending. Such channels could include their support for capital markets through market-making activity and clearing, custody and settlement activities. Such firms are not within the scope of the SRB and nor does the FPC have the discretion to revise that scope. UK legislation requires the FPC to produce a framework for applying an SRB to ring-fenced banks, and large building societies with deposits and shares (excluding deferred shares) over £25 billion.

In February 2016, the PRA published a statement of policy that outlined the approach to identifying O-SIIs.[2] The criteria and methodology are derived from Article 131(3) of the Capital Requirements Directive (2013/36/EU) (CRD IV) – which requires O-SIIs to be identified - and follow the European Banking Authority's Guidelines on the criteria to determine the conditions of application of Article 131(3) CRD IV in relation to the assessment of O-SIIs. The PRA's statement of policy is relevant to all credit institutions, investment firms, European Economic Area (EEA) parent institutions, EEA parent financial holding companies and EEA parent mixed financial holding companies within the domestic financial sector at their highest level of consolidation in the United Kingdom.

The PRA's statement of policy also made clear that within the range of measures permitted under UK law, O-SIIs are subject to more intensive supervision.

Under the Bank of England Act 1998, the FPC can make recommendations to HM Treasury if necessary when it identifies risks to financial stability relating to regulatory perimeter issues. Within this framework, the FPC will monitor the range and amount of critical services provided by entities other than SRB institutions with a view to ensuring a resilient provision of such services. Should the provision of such services shift beyond the class of institutions currently captured within the scope of the SRB, the FPC may act accordingly.

Interaction of the SRB with the G-SIB buffer

Three responses commented on the interaction of the G- SIB and SRB buffers. Two requested clarification, while another expressed a view on how the SRB should interact with the G-SIB buffer.

One response stated that the interaction between the G- SIB buffer, set at the consolidated level, and the SRB, set for the ring-fenced part of a group, was unclear. Particular concern was expressed that in the case where a ring-fenced bank's SRB requirement exceeded the G- SIB requirement for the group, the group could 'downstream' into its ring-fenced part the whole of its G- SIB buffer capital in order to meet the SRB requirement. The response argued that the extent of such downstreaming might risk undermining the resilience of either the ring-fenced bank sub-group and/or the other

[1] See Bank of England, *The Financial Policy Committee's framework for the systemic risk buffer: A Consultation Paper,* January 2016, available at: http://www.bankofengland.co.uk/financialstability/Documents/fpc/srbf_cp.pdf.

[2] See Prudential Regulation Authority, *The PRA's approach to identifying other systemically important institutions (O-SIIs)*, 19 February 2016, available at: http://www.bankofengland.co.uk/pra/Pages/publications/sop/2016/approachtoosii.aspx.

parts of the group. The response recognises that resolving this issue might require policy action beyond the scope of FPC's statutory role in designing the SRB framework for ring-fenced banks.

Another response asked for confirmation regarding the requirements applied to the ring-fenced bank. Specifically, the respondent asked for clarification that the SRB applied only to the ring-fenced bank sub-group and not to the parent of the ring-fenced bank nor at the consolidated group level; whether the restrictions under EU law on maximum distributable amounts if a firm uses its buffers would be calculated separately for a ring- fenced bank and for its (non ring-fenced) parent; and whether the ALRB, calculated as 35% of the SRB, would be applied to the ring-fenced bank or the consolidated group.

One response provided a view on how the SRB and G-SIB buffers should interact. This response asserted that the SRB framework as proposed by the FPC would incentivise banking groups to move activities outside of the ring-fenced part of the banking group, given that the ring-fenced bank is subject to the SRB and the non-ring- fenced part of the group is not. This response suggested that looking across the activities of the entire group would be more representative of a bank's systemic risk to the UK economy and financial system. This commenter recommended that the FPC should increase buffer requirements at the G-SIB level of consolidation.

Relatedly, another respondent supported the FPC's proposal that the SRB would be applied at the ring-fenced sub-group level, rather than at a higher level of group consolidation. This commenter noted that the framework had not been calibrated for the inclusion of the non-ring-fenced part of the group and requested confirmation that the design of the framework is not intended to be applied beyond the ring-fenced sub- group.

In response to the request for clarifications, the FPC notes that the PRA has consulted on a proposal to require a ring-fenced bank to meet the requirements of the Capital Buffers part of the PRA Rulebook on a sub- consolidated basis in respect of its ring-fenced bank sub- group, and for the SRB to apply at the ring-fenced sub- group level (where a sub-group exists).[1] Consistent with this, restrictions under EU law on maximum distributable amounts for the ring-fenced bank sub-group and the consolidated group would be calculated independently.

Regarding the application of the ALRB, the FPC has yet to direct the PRA to apply the ALRB to SRB institutions. Section 4 of Chapter 3 sets out the FPC's intention to do so from 2019, in parallel with the introduction of the SRB, as well as the FPC's view on the level of application of the ALRB.

Separately, in light of consultation responses, the FPC has made a Recommendation to the PRA that seeks to ensure that there is sufficient capital within a consolidated group, and distributed appropriately across it, to address both global and domestic systemic risks (see Chapter 4).

Interaction of the SRB with Pillar 2A

Two respondents expressed the view that SRB institutions may be required to hold capital against concentration risk under both the SRB and Pillar 2A. In order to avoid this claimed 'double counting' of risks, these respondents requested that the FPC coordinate with the PRA so that SRB capital requirements may be 'offset' with existing Pillar 2A.

The FPC does not agree that there is a double counting of risks in the SRB and Pillar 2A. Additional Pillar 2A capital set for concentration risk addresses the lack of geographical, sectoral, or specific name diversification in a firm's credit exposures, which could lead to higher credit losses in a downturn. The SRB is intended to capture the greater potential impact an SRB institution may have on the economy through restricting lending to UK households and non-financial companies. The two risks are therefore different – whereas Pillar 2A addresses risks facing the firm, the SRB aims to increase resilience against risks that the firm can pose to the UK economy. Because there is no overlap in the risks accounted for between the SRB and Pillar 2A, the FPC does not believe any adjustment for concentration risk is justified.

Calibration

One respondent stated that the FPC's SRB framework and its wider assessment of appropriate capital requirements had been calibrated at too low a level. This response stated that the equity capital of UK banks is fundamental to the country's financial stability and has been "far too thin and remains too low". The response also stated that the analytical basis for the FPC's optimal capital requirements rests on "very questionable" assumptions, especially concerning the effectiveness of resolution regimes and of dynamic countercyclical buffer policy. In particular, the response stated that it is unsound to base equity buffer policy on analysis for average or typical risk conditions. Rather, the respondent stated that the benchmark should be more elevated risk conditions.

This response also argued that higher bank equity had large social benefits (reducing the probability of banking crises and reducing the damage when they nevertheless occur), while the costs to society of raising additional equity were low. The response proposed common

[1] See *The Implementation of ring-fencing: prudential requirements, intragroup arrangements and the use of financial market infrastructures* CP37/15, October 2015, available at: http://www.bankofengland.co.uk/pra/Documents/publications/cp/2015/cp3715.pdf.

equity requirements of at least 15% of RWAs for major ring-fenced banks and views the FPC's framework to be weaker than that recommended by the ICB. The commenter adds that making more prudent and realistic assumptions about resolution and countercyclical capital buffer policy would result in much higher estimates of optimal equity even on the Bank of England's own analytical approach.

Given that the top rate permitted by the SRB Regulations for the SRB is 3%, the response argued that all major ring-fenced banks and building societies (with total assets equivalent to £160 billion or more) should be subject to a flat 3% SRB rate. The commenter is of the view that even doing so would leave equity capital levels sub-optimal.

The FPC view was that it should set capital in the context of the overall capital framework applicable to major ring- fenced banks and building societies. This takes into account the benefits of having a credible and effective resolution framework, which is expected to reduce materially both the likelihood and probable impact of systemic bank failures and reduce the need for very high capital requirements. The FPC noted that credible resolution plays a key role in the architecture of post- crisis reforms and was one of the fundamental motivations for the ICB's ring-fencing proposals.

The FPC judged, as set out in the evidence by Bank of England staff, that higher equity requirements had a diminishing benefit in reducing the probability of bank failure: when the probability is low, there is less to gain from reducing it further still.[1] In addition, the FPC took note of empirical studies that show that the higher costs to banks of larger equity requirements, at least in part, affect banks' overall funding costs. These costs are passed onto customers, leading to lower returns to savers and a higher cost of borrowing for UK households and companies.

Further, SRB institutions and banking groups more broadly will be held to a more demanding standard of overall loss absorbing capacity (capital requirements and buffers plus eligible debt liabilities) given the Bank's proposals for a minimum requirement for own funds and eligible liabilities.[2]

Having carefully considered the comments received during the consultation period, the Committee decided to adopt as final a framework that was broadly the same as that on which it had consulted.

That said, the FPC's calibration of the overall capital framework was based on a number of important detailed judgements. These were: international work to address definitional shortcomings in measures of risk-weighted assets; the effectiveness of arrangements for resolving banks that failed; and the economic costs of higher capital requirements. The FPC agreed that these would need to be reviewed in due course as further evidence emerged.

Competition

One response raised concerns that the graduated regime set out by the FPC could create disincentives for large firms to compete, particularly those at or near thresholds where SRB rates rise. This is because as a firm's assets cross thresholds, higher SRB rates would apply to the whole of a firm's balance sheet. The commenter noted that the FPC is limited in its design choices by the SRB Regulations. Given these limitations, the commenter views a flat 3.0% rate for the big firms as more supportive of competition.

A number of features of the FPC's framework mitigate the competitive distortions that firms may face when at or near thresholds.

First, the £175 billion threshold for systemic importance ensures that 'challenger' banks have ample space to grow before being subject to the SRB, therefore facilitating entry to markets. This is consistent with the March 2016 FPC remit letter (set out by HM Treasury), which references that the FPC, subject to achievement of its primary financial stability objective, should act in a way that supports "more competition and innovation in all sectors of the industry, particularly retail banking".[3,4] This includes minimising barriers to entry and ensuring a diversity of business models within the industry. A flat 3% rate would mean that a firm below the £175bn threshold would face a very sharp increase in requirements were it to expand, creating a barrier to expansion for new 'challenger' banks.

Second, the gradient of rates across buckets is relatively shallow, with equally sized steps of 0.5 percentage points above the initial 1.0% bucket, the minimum permitted

[1] See Brooke, M, Bush, O, Edwards, R, Ellis, J, Francis, B, Harimohan, R, Neiss, K and Siegert, C (2015), *Measuring the macroeconomic costs and benefits of higher UK bank capital requirements*, Bank of England Financial Stability Paper No. 35, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper35.pdf.

[2] See Bank of England, *The Bank of England's approach to setting a minimum requirement for own funds and eligible liabilities (MREL), Consultation on a proposed Statement of Policy*, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/resolution/mrelconsultation2015.pdf.

[3] FPC's responsibilities on the systemic risk buffer are not 'functions' under the Bank of England Act 1998 and therefore while the FPC can consider such issues if relevant, it is not required by statute to consider its objectives, 'have regards', HMT's Remit letter or other letters or requirements falling outside of the provisions of the SRB Regulations.

[4] See *Remit and Recommendations for the Financial Policy Committee, Letter from George Osborne (Treasury Select Committee, HM Treasury) to Mark Carney (Governor, Bank of England,)* 16 March 2016, available at: http://www.bankofengland.co.uk/financialstability/Documents/fpc/letters/chancellorletter160316.pdf.

under the relevant legislation. A step-wise approach – using 50 basis point intervals – whereby higher rates apply to the whole balance sheet is also used in frameworks set by other national and international authorities – for example, the Financial Stability Board's (FSB) G-SIB framework.

Third, the framework uses wide buckets, where the distance between sequential thresholds is £145 billion (or approximately 8% of UK GDP). This enables firms to expand and compete effectively within buckets, without incurring higher SRB rates.

Wide buckets may also facilitate rivalry between firms that reside within the same bucket. By using wide buckets, it is likely that more than one firm would typically be located in the same bucket. In such cases, firm(s) located in the same bucket but perhaps further away from the next threshold will have space to expand further should they wish to, which could put pressure on other firm(s) in the same bucket to compete (including those larger firms located just below the next threshold).

Fourth, the graduated approach means that SRB rates faced by firms are more proportionate to the scale of systemic risks that they pose. This facilitates effective competition between firms across buckets, for example: firms in one of the lower buckets (so posing less systemic risk) will be able to compete more effectively against larger firms in higher buckets (posing greater systemic risk). A flat 3% would likely be disproportionate for mid-tier firms relative to the financial stability risks that the FPC's SRB framework suggests that they pose to the economy.

Finally, the initially empty 3% bucket ensures that if the largest firms expanded further and in doing so become more systemically important, they would become subject to a higher SRB rate commensurate with their added importance.

One alternative way to mitigate the distortions that firms may face when at or near thresholds – as proposed in the feedback received – would be a framework that follows an income tax-style approach. Under such an approach, SRB rates would apply only to the incremental part of the balance sheet in excess of each threshold. Though there are pros and cons to this approach, this is not an option for the FPC at this time. Specifically, it is not possible under the SRB Regulations that require the buffer to be set at a series of discrete rates (0%, 1%, 1.5%, 2% 2.5%, or 3%).

Box 2

Comparison of the FPC's capital framework and the ICB recommendations on bank capital

On 5 April 2016, the Governor of the Bank of England sent a letter to the Chairman of the Treasury Committee explaining the FPC's steady state framework for capital requirements for UK banks in the Supplement to its December 2015 *Financial Stability Report*.[1] Based on an analysis of the economic costs and benefits of going concern bank equity, the Committee judged the appropriate baseline Tier 1 capital requirement for the UK banking system, in aggregate, to be 11% of risk-weighted assets, assuming those risk-weighted assets are properly measured. A small part of this (1.5 percentage points) can be met with contingent capital instruments. The FPC therefore considered the appropriate end point level of common equity Tier 1 (CET1), the highest quality of capital, to be around 9.5% of risk-weighted assets.

This baseline calibration has two important qualifications. First, it refers to equity requirements that do not vary through time. In addition, the **FPC intends to make active use of the countercyclical capital buffer** that will apply to banks' UK exposures. The Committee has set out that during periods after the recovery and repair phase that typically follows a financial stress, but before the risks facing the system have become elevated, that it expects the countercyclical capital buffer rate to be in the region of 1% for exposures to UK borrowers. This would add around 0.5% of risk-weighted assets to the aggregate common equity capital requirements of UK banking groups, given the geographic composition of their activity. At the time of the ICB's Final Report, the prevailing thinking was that the countercyclical buffer would be built up only if the FPC judged risks facing the system to be elevated.[2]

Second, the PRA currently corrects for gaps and shortcomings in internationally agreed measures of risk-weighted assets ("Pillar 1") as part of its review of individual banks' capital guidance ("Pillar 2A"). Unless and until a series of improvements to risk weights are agreed internationally, the FPC expects major UK banks in aggregate to fund around 13.5% of risk weighted assets with Tier 1 capital. The ICB recommendations were based on existing measures of risk-weighted assets, anticipating some improvements to measures of risk weights in trading books, improvements which have subsequently been agreed at the international level. However, the ICB's Final Report did not recommend a calibration for requirements set under Pillar 2A. Since the publication of the ICB report, the PRA has set out new, robust methodologies for calculating Pillar 2A, and has determined that the quality of capital used to meet Pillar 2A must be as good as that for Pillar 1 (i.e., at least 56% must be met with CET1 resources and at least 75% must be met with Tier 1 resources).

Table 1 compares the current framework of requirements for UK banks set out by the FPC with those recommended by the ICB. It shows that after minimum requirements (Pillar 1 and Pillar 2A) and the FPC's strategy for the countercyclical buffer are taken into account:

- for major UK banking groups (including UK G-SIBs), the FPC framework is expected to deliver overall common equity requirements in aggregate across the system of 11.5%, some two percentage points more than the 9.5% of risk- weighted assets recommended by the ICB; and
- for the ring-fenced parts of the major UK groups and for large building societies, the FPC framework will deliver an estimated 11.2% in aggregate, an additional one percentage point of common equity more than the 10% of risk- weighted assets recommended by the ICB.
- the Bank of England's proposals for total loss absorbency which would result in much higher overall requirements than recommended by the ICB for banking groups. These will require on average at least 28% of RWAs, with an absolute minimum at present of 23% for major UK groups. This compares to 20% total loss absorbency requirements recommended in the ICB report.

[1] See *Letter to Rt Hon Andrew Tyrie MP (Chairman, Treasury Select Committee) from Mark Carney (Governor, Bank of England),* 5 April 2016, available at http://www.parliament.uk/documents/commons-committees/treasury/Correspondence/Mark-Carney-Governor-Bank-of-England-to-Rt-Hon-Andrew-Tyrie-MP-5-04-16.pdf.

[2] For example, the guidance proposal issued by the Basel Committee on Banking Supervision on the use of the countercyclical buffer stated that a *'focus on excess aggregate credit growth means that jurisdictions are likely to only need to deploy the countercyclical buffer on an infrequent basis.'* See Basel Committee on Banking Supervision, *Countercyclical capital buffer proposal*, Consultative Document, September 2010, available at http://www.bis.org/publ/bcbs172.pdf.

On top of the requirements set out in **Table 1**, the PRA requires firms to hold firm-specific capital buffers (Pillar 2B), which represent a material layer of additional common equity. These buffers cover losses that may arise under a severe stress scenario that are not already covered by the CRD IV buffers and/or where the PRA judges that a firm's risk management or governance may be weak. The FPC expects the aggregate amount of Pillar 2B to continue to represent a material layer of additional common equity loss absorbency above and beyond its capital framework for the foreseeable future.

In addition, the FPC's leverage ratio framework will set a more demanding leverage standard than that recommended by the ICB. The FPC's leverage ratio framework requires major banks and building societies to satisfy a minimum Tier 1 leverage ratio of 3%. Leverage requirements will be scaled up in proportion to any countercyclical capital buffer on UK exposures and for systemically important banks. For example, the ALRB for a UK G-SIB would be set at 35% of a firm's risk-weighted G-SIB buffer rate, on top of a minimum leverage ratio requirement of 3% and a countercyclical leverage ratio buffer, set at 35% of a firm's countercyclical capital buffer rate. The 35% conversion factor aims to ensure complementarity between the risk-based capital framework and the leverage ratio framework across institutions (via the ALRB) and over time (via the countercyclical leverage ratio buffer).

Table 1: Estimated average loss absorbency requirements for major UK banking groups and ring fenced banks weighted by risk-weighted assets as currently measured

	RFB - BoE	RFB - ICB	Group - BoE	Group - ICB
Minimum common equity (Pillar 1)	4.5	4.5	4.5	4.5
Capital conservation buffer	2.5	2.5	2.5	2.5
Systemic buffers (SRB and G-SIB)	1.3	3.0	2.1	2.5
Pillar 2A (common equity)	1.9	-	1.9	-
Countercyclical buffer	1.0	-	0.5	-
Pillar 2B (PRA buffer)	+	+	+	+
Total common equity	**11.2+**	**10.0+**	**11.5+**	**9.5+**
Additional Tier 1	2.1	1.5	2.1	1.5
Total Tier 1 capital	**13.3+**	**11.5+**	**13.6+**	**11.0+**
Tier 2 capital	2.8	2.0	2.8	2.0
Recapitalisation amount for resolution (comprised of additional equity and bail-inable debt)	11.3	3.5	11.3	7.0
Overall loss absorbency	**27.4+**	**17.0+**	**27.7+**	**20.0+**

Notes:

1. Major UK banking groups include: Lloyds, HSBC, Barclays, RBS, Santander UK and Nationwide. RFB refers to the ring-fenced sub-group of the major UK banking groups. Lloyds, HSBC, Barclays, RBS and Santander UK are all expected to be subject to ring-fencing rules in 2019. The SRB is expected to apply on a sub-consolidated basis for banks that contain a ring-fenced sub-group.
2. The 'BoE recapitalisation amount for resolution' is assumed to be equal to the sum of the total capital amounts of Pillar 1 and Pillar 2A, though the final requirements for each group may differ from this. This assumption is based on the proposed calibration of MREL for firms with bail-in as the preferred resolution strategy, as set out by the Bank of England, as UK resolution authority, in its consultation on MREL in December 2015. Under the Bank's proposal, the 'recapitalisation amount for resolution' is calibrated in the same way for ring-fenced banks as for groups with bail-in as the preferred resolution strategy. The ICB recommended 20% loss absorbing capacity, although it did reference a further discretionary 3% 'resolution buffer' for firms that are not readily resolvable. The Bank has the power to require firms to take a range of actions to address barriers to resolvability (see 'The Bank of England's power to direct institutions to address impediments to resolvability' December 2015).
3. Globally Systemically Important Banks ('G-SIB') buffers are equal to the rates announced in 2015. SRB rates are based on the FPC's methodology and the forecasted 2019 RWAs of the relevant institutions.
4. Pillar 2B is a firm-specific buffer, set by the PRA, to cover losses that may arise under a severe stress scenario that are not already covered by the CRD IV buffers and/ or where the PRA assesses a firm's risk management or governance to be sufficiently weak. Its size is confidential to each individual institution. The need for these additional, firm-specific buffers to allow the PRA to exercise its judgement, where appropriate, was also recognised by the ICB.
5. Pillar 2A shows the weighted average of Pillar 2A guidance published by firms in their 2015 annual reports and accounts. Pillar 2A rates for ring fenced banks have been assumed to be equal to those of their groups, although in practice they may vary.
6. Each firm's countercyclical buffer rate is a weighted average of its UK and foreign countercyclical buffer rates, and is therefore affected by the geographic composition of its exposures. The average countercyclical buffer rate is assumed to be 1% for ring-fenced banks and 0.5% for banking groups.
7. Additional Tier 1 includes a 1.5% Pillar 1 requirement and a weighted average of 0.6% Pillar 2A guidance.

3 Design and calibration of the FPC's systemic risk buffer framework

This chapter sets out the criteria for assessing and measuring an SRB institution's systemic importance, and how this assessment and measurement might be translated into a score that can be used to calculate a firm's corresponding SRB rate. In addition, this chapter lays out the FPC's calibration of SRB rates. In doing so, it sets out the Committee's justification for these elements of its framework. The structure is as follows:

Section 3.1 explains the criteria for assessment of systemic importance;

Section 3.2 describes the measuring and scoring of systemic importance;

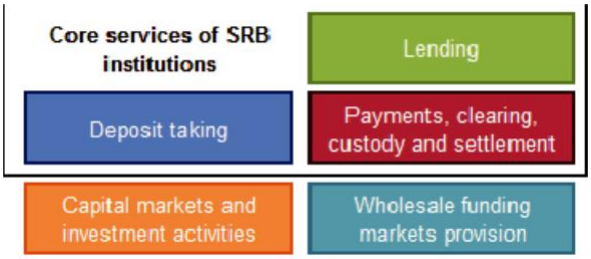
Section 3.3 provides an explanation of how the FPC calibrated the SRB; and

Section 3.4 sets out the implications of the SRB for the leverage ratio requirement.

3.1 Criteria for assessment of systemic importance

The Financial Stability Board has set out the categories of critical economic functions of systemically important banks, as shown in **Table 3.A**. These include deposit-taking, lending, payments services, and capital markets and wholesale activities, and reflect the key channels through which systemic banks can cause damage to the economy and the financial system. In addition, the distress of systemic institutions can also have broader confidence effects on other financial institutions.

Table 3.A Financial Stability Board's critical economic functions and activities of SRB institutions



Source: Bank of England

Ring-fenced banks and large building societies are, however, restricted by legislation from undertaking capital markets and investment activities, from providing wholesale funding, and in their clearing, custody and settlement activities. Their critical economic functions are therefore expected to be predominantly limited to lending, deposit-taking and payments.

The Basel Committee has also set out principles for dealing with D-SIBs (see Annex 2), which, among other elements set out suggested criteria for assessing systemic importance. These criteria include size, substitutability, interconnectedness and complexity — including complexity arising from cross-border activities.

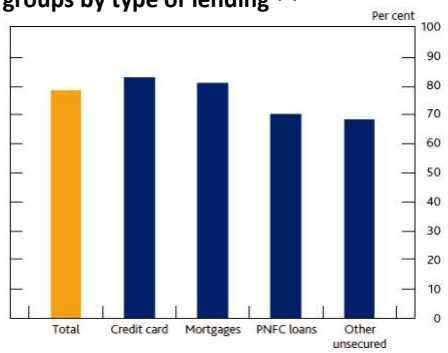
UK legislation implementing the ICB recommendations aims to limit ring-fenced banks and large building societies from becoming systemically important through interconnectedness with the rest of the financial system. It will also limit their involvement in complex financial transactions and their cross-border activities. For example, ring-fenced banks are prohibited (other than in limited circumstances) from having exposures to relevant financial institutions and having subsidiaries or branches outside the EEA. The relevant criteria for assessing the systemic importance of SRB institutions are therefore size and substitutability, focused on their deposit-taking, lending and payments services.

There is currently little evidence to suggest that firms in distress (outside of failure) disrupt deposit-taking and payments activities. Progress on resolution should help ensure the continuity of banks' critical functions in resolution and mitigate any potential systemic risk arising from disruption to deposit-taking and payments following from firm failure.

Taking all of these considerations into account, the FPC judges that the key source of, and so criteria for assessing, systemic importance is the potential impact that an SRB institution may have on the UK economy through restricting lending to UK households and non-financial companies.

Abrupt reductions in the availability of credit on a large scale can have a substantial impact on UK GDP. This is particularly relevant as the SRB institutions are expected to account for a substantial proportion of UK household lending and private non-financial corporate lending (**Chart 3.1**), reflecting the large aggregate market share (c.80%) of the existing UK banking groups expected to be subject to the SRB.

Chart 3.1 Aggregate market shares of major UK banking groups by type of lending [(a)]



Sources: Statistical returns and Bank calculations.

a) Market shares are based on data for all UK-resident monetary financial institutions for sterling only.

3.2 Measuring and scoring of systemic importance

The FPC framework uses 'total assets' of SRB institutions as a proxy to measure and score the criteria for systemic importance.[1]

Lending to UK households and non-financial companies is expected to comprise a large share of SRB institutions' total assets and therefore the FPC judges that total assets is a good proxy of these institutions' potential to constrain the provision of credit to these sectors. Annex 3 sets out further details of this relationship.

Using a measure of total assets also has the advantage of simplicity, and should not affect firms' choices about whether different types of assets are booked inside or outside the ring-fence.

Other metrics considered

For assessing, measuring and scoring the criteria for systemic importance, the FPC also considered using a richer set of criteria in its methodology. In particular, the FPC considered using a broader set of the Financial Stability Board's critical economic functions to assess systemic importance. However, it judged that this was unnecessary, mainly because of the aforementioned restrictions on the activities of SRB institutions.

Additionally, the FPC considered placing greater emphasis on corporate lending in its scoring methodology on the grounds that the impact on the economy may be greater if credit supply is disrupted to companies (as opposed to households). There may also be more alternative providers of household than corporate lending. Such an approach would involve weighting lending to companies higher than lending to households to create an overall score of systemic importance.

The FPC decided against this approach, however, mainly because of concerns that it might create incentives for ring-fenced banks to move corporate lending outside the ring-fence.

Threshold for systemic importance

A key judgement in setting up the SRB framework is the choice of threshold below which firms in scope of the SRB are considered not to be systemically important for these purposes and therefore warrant a 0% SRB rate.

In developing its judgement, the FPC considered a number of corroborative factors that could inform the threshold at which a firm may be considered systemically important, including the potential level of disruption to the supply of credit in the United Kingdom; the size of firms perceived to benefit from government support; as well as a number of competition considerations to minimise the potential of creating barriers to expansion for 'challenger' banks.

Combining firms' market shares in household and corporate lending with empirical evidence about firms' responses to capital shortages in the past, suggests that a typical firm with £175 billion of total assets experiencing a 2.5 percentage point capital shortfall could have the potential to disrupt around one sixth of UK credit supply in distress (see Annex 3 for details).

This suggests that were firms of this size to experience distress significant enough to deplete all of their going-concern Basel buffers (ie the 2.5% capital conservation buffer in absence of a systemic buffer), disruption to markets could be significant in the event that firms seek to rebuild the resulting capital shortage (2.5 percentage points) quickly. In that case it would be difficult for other firms to absorb significant amounts of deleveraging over a short period of time (from both a financial and an operational perspective). Therefore, in that event the FPC considers the resulting market disruption likely to impair the overall provision of credit to the real economy.

Given the existing market shares of UK firms, the majority of lending in the United Kingdom (c. 80%) is provided by firms of size c. £200 billion total assets or more. Those firms were also estimated to receive rating agencies credit rating uplifts now or in the past due to expectations of government support, which contributes to the perception of 'too-big-to-fail'.

Bank of England staff research suggests that banks of sizes up to $100 billion total assets (c. £70 billion) may benefit from economies of scale once funding cost advantages attributable to implicit subsidies are accounted.[2] Such economies may promote more efficient economic outcomes. Given the uncertainty around it, the FPC's systemic threshold of £175 billion total assets errs considerably on the upside of this estimate. This judgement reflects the impact of policy developments that have been introduced since the crisis, which contribute to removing implicit subsidies.

Allowing room for firms to expand and to benefit from such economies may also reduce the risk of the SRB acting as a barrier to entry or expansion for 'challenger' banks. A more diverse provision of financial services

[1] Data on total assets is currently collected under Regulation (EU) 575/2013 (Capital Requirements Regulation (CRR)), CRR financial reporting requirements (FINREP) for certain consolidated groups, and under the PRA's 'FSA001' for solo entities and those consolidated groups that do not report FINREP. The PRA is currently undertaking a stock-take of reporting requirements, which may affect the manner in which total assets data is collected, but any work done will take into account the need to receive data on total assets from SRB institutions, at an appropriate level of consolidation (including ring-fenced bank sub-groups).

[2] See Davies, R and Tracey, B, 'Too big to be efficient? The impact of too big to fail factors on scale economies for banks', *Journal of Money, Credit and Banking*, Vol. 46, No. 1, pages 219–53, February 2014.

could spread market shares across a wider number of firms, reducing some of the risks posed by systemically important institutions and supporting efforts to build a more resilient provision of financial services.

A range of thresholds for systemic importance have been set by other countries (**Table 3.B**). The smallest identified D-SIBs vary considerably in size across countries, ranging between 2% to 48% of GDP and reflect the nature of the provision of services in their economies. In UK terms, £175 billion total assets would correspond to c.10% of GDP. This would place the United Kingdom around the mid-point (median) of this range of thresholds. However this data should be interpreted with care given differences in the structures of credit provision across countries. For example, to capture c.80% of US aggregate credit provision, the corresponding threshold would have to be set at c.2% or more of US GDP.

Table 3.B Smallest systemically important bank in other countries

Country	Total assets as a per cent of GDP
Australia	48
Austria	3
Finland	14
Netherlands	10
Canada	10
Denmark	8
Hong Kong	35
Norway	14
Sweden	17
United States	2

Sources: Capital IQ, Thomson Reuters Datastream and Bank calculations.

Taking all of the above together, the FPC judges that £175 billion of total assets is an appropriate threshold for systemic importance. Setting a nominal threshold is consistent with the wider regime (including the threshold for becoming an 'SRB institution'). However such a threshold could be adjusted in the future (for example in line with nominal GDP or inflation) as part of the FPC's mandated two-yearly reviews of the framework.

3.3 Calibration of the SRB

This section sets out the FPC's calibration of the SRB - that is, how a firm's measure of systemic importance maps to a specific SRB rate. The FPC's framework calibrates SRB rates in a way that reflects SRB institutions' systemic importance, meaning that firms with higher levels of total assets — and therefore greater potential to damage the UK economy by restricting credit in distress — would be subject to higher buffers and therefore greater levels of resilience.

In calibrating the SRB, the FPC considered how much additional capital is needed to offset the greater potential harm that the distress of these institutions could do to the UK economy.

SRB institutions that are below the threshold where the FPC considers firms to be systemically important for these purposes (£175 billion total assets), but are above the £25 billion threshold required to be designated an SRB institution map to a 0% SRB rate under the FPC's framework.

For determining the necessary level of additional capital required for systemic firms via the SRB, the FPC drew on a range of inputs, before reaching a judgement on the appropriate design and calibration of the SRB framework. Inputs include an 'expected impact' framework complemented by an analysis of historical losses incurred by banks. This section sets out these inputs and the judgements reached by the FPC in determining its calibration.

Expected impact framework

One way to approach the calibration of an SRB is to set additional capital buffers for systemic firms commensurate with estimates of the additional damage that they could cause to the economy in the event of their distress.

Such an 'expected impact approach' determines the additional capital required so that the expected impact on the economy from the distress of a systemic firm is made equal to that of a non-systemic firm.

A firm's 'expected impact' is estimated as the product of its probability of distress and its size, measured by total assets. Size is used as a proxy measure for its impact on the economy in the event of distress. (The probability of distress (PD) will depend on a range of factors, not necessarily linked to size.)

$$\text{Expected Impact} = \text{PD} * \text{Total Assets} \qquad (1)$$

Using this equation, the SRB may be set to lower the PD of SRB institutions so that the expected impact of their failure is equal to that of a non-systemic firm.

This is not an exact science and a number of assumptions are needed to gain insight from this framework.

First, size was used as a proxy for the impact on the economy of a firm's distress. Larger firms have higher lending market shares in the United Kingdom, and so have the potential to do more harm to the economy through constraining lending when in distress.

Second, a benchmark non-systemic firm needs to be identified against which to compare the expected impact of an SRB institution. A firm with total assets

corresponding to the FPC's systemic threshold — £175 billion assets — was used.

Third, estimates are required for the rate of reduction in the probability of distress as equity capital requirements are increased above the requirements for non-systemic firms. Historical data that was used to estimate this relationship suggested that the rate at which the probability of distress decreases slows as capital ratios rise.

Fourth, all institutions were assumed to start at a baseline Basel III Tier 1 capital requirement (including capital conservation buffer) of 8.5% of RWAs.[1]
Using these assumptions, the framework is applied for an SRB institution by (i) calculating the ratio of its total assets to that of the benchmark firm of £175 billion, and (ii) setting the required SRB rate at the level that reduces its PD in proportion to (i). The higher a firm's total assets relative to the benchmark (right-hand side of (2)), the higher its SRB rate to deliver the necessary reduction in relative PD (left-hand side of (2)).

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$$\frac{PD\ (8.5\%)}{PD\ (8.5\% + SRB)} = \frac{\text{total assets}^{\text{systemic}}}{\text{total assets}^{\text{non-systemic}}} \qquad (2)$$

Repeating this approach for SRB institutions of different sizes sets a sliding scale of SRB rates as the amount of a firm's total assets increases. And buckets for SRB rates – that is ranges of total assets corresponding to a specific SRB rate — can be determined. The steps to do so are illustrated in Annex 4 together with the outcomes for SRB buckets. These outcomes reflect one set of assumptions, however.
A number of those assumptions are particularly uncertain, including how the potential damage to the economy caused by the distress of an SRB institution varies with its size. The results should therefore be taken as indicative only.

Historical loss distributions

Given the policy objective to hold SRB institutions to a higher standard of resilience, an alternative perspective is to ask what proportion of past losses experienced by banks would be covered by different SRB rates. This approach is analogous to that commonly used in risk management. And it complements the expected impact approach which, while also using historical losses, is not designed to consider how far various SRB rates might mitigate losses in the tail of the probability distribution of losses.

Changes to the risk-weighting regime make it difficult to compare losses over time in the risk-weighted space. Therefore, losses are compared with buffer rates where both are measured in units of un-weighted exposures, rather than in units of RWAs.

The FPC's calibration of the leverage ratio minimum requirement drew on similar historical losses and provides a starting point to gauge how much of the tail of the loss distribution would be covered at different SRB rates. This is done by scaling the SRB rates by the 35% conversion factor which is used to translate risk-weighted requirements into leverage space.

Scaling the SRB rates by the 35% conversion factor means that a 3% SRB rate corresponds to a c. 1% rate on un-weighted exposures. **Chart 3.2** and **Chart 3.3** show that an additional 1 percentage point requirement on un-weighted exposures above the 3% leverage ratio minimum requirement would be sufficient to cover peak losses experienced by about 80% of UK or international banks in the recent crisis.

The sample of firms in **Chart 3.2** is not large enough to determine what SRB rates would be necessary to cover percentiles above the 90th percentile, but drawing on the international sample of large banks (**Chart 3.3**) suggests that requirements on un-weighted exposures above the leverage ratio minimum of up to c. 4% could be warranted to cover, for example, the 95th percentile, translating to risk-weighted buffers of up to 12%.

In line with the FPC's stated intention in its leverage ratio policy statement the SRB will raise requirements on un-weighted exposures via the ALRB. This is discussed in detail in Chapter 3.[2]

This measure of losses seeks to determine systemic buffer requirements based on a very demanding standard: peak losses incurred in the recent systemic crisis. It presumes that the most systemic firm should maintain capital at all points in the cycle against the risk of maximum losses incurred in a systemic crisis. As such, it may be interpreted as a broader assessment of going-concern buffers appropriate for the most systemic firms — which would include the G-SIB and SRB systemic buffers, countercyclical buffers and firm- specific PRA buffers.

[1] This baseline excludes Pillar 2 and buffers for systemic banks, as well as the countercyclical capital buffer.

[2] See Bank of England, *The Financial Policy Committee's powers over leverage ratio tools: a policy statement*, July 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/policystatement010715ltr.pdf.

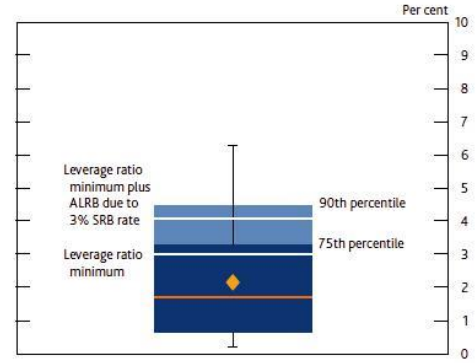
An alternative approach is to look at the losses that large, international banks have experienced in periods other than the recent crisis, in order to consider the losses that banks may face across a range of periods of financial instability. This data is only available for a sample of large, international banks. **Table 3.C** shows that to cover losses up to the 97.5–99th percentile in risk-weighted terms for example, banks would need capital buffers of at least 6.1–10.9 percentage points in order to absorb losses, maintain lending and to continue to meet minimum equity requirements. Outside of those minimum requirements, current and prospective requirements for firms may be expected to cover c. 6.0 percentage points of losses.

An activist countercyclical policy would be expected to add to the SRB and the structural capital requirements as risks build in the system. The FPC has announced that it intends to make active use of the countercyclical buffer that will apply to banks' UK exposures. During periods after the recovery and repair phase that typically follows a financial stress, but before the risks facing the system have become elevated, the Committee currently expects the countercyclical capital buffer rate to be in the region of 1% for exposures to UK borrowers. A 1% UK countercyclical buffer rate would add around 0.5% of RWAs to the aggregate common equity capital requirements of UK banking groups, given the geographic composition of their activity. The FPC announced in March 2016 that it was increasing the UK countercyclical capital buffer rate from 0% to 0.5%, in light of its assessment of the current risk environment and its intention to move gradually. This new setting will become binding with effect from 29 March 2017.

Building up, for example, 2.5 percentage points or more of requirements countercyclically as risks become elevated means an SRB rate of 2.5–3.0 percentage points would then be warranted to cover losses between those percentiles of the historical loss distribution.

Both of these historical loss analyses are sensitive to a number of uncertainties, including the interpretation of losses data from the past given the extent of regulatory reform post crisis, survivorship biases in the past data, the point of non-viability for institutions in the future, the impact of previous public sector interventions, and mappings from un-weighted to risk-weighted assets. As a result, these numbers may inform, but cannot on their own determine, an SRB calibration.

Chart 3.2 Distribution of peak losses as a percentage of 2006 total un-weighted exposures for a sample of UK banks[(a)(b)(c)]



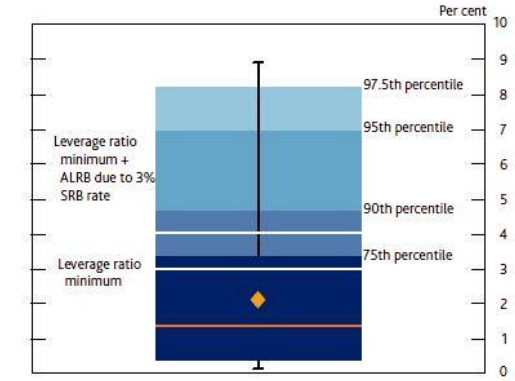
Sources: Annual reports and Bank calculations.

a) Half-yearly loss values calculated as loss to pre-tax net income plus unrealised net gains/losses. Peak losses calculated over the period 2007 H1 to 2013 H1.

b) Eleven firms in sample. Lines extending vertically from the box indicate firms with the minimum and maximum peak losses in the sample. Lower and upper boundaries of box represent first and third quartiles of the distribution, respectively. Line within box represents the median. Marker within box represents the mean.

c) Internal calculations are used to estimate total exposures from 2006 total asset values.

Chart 3.3 Distribution of peak losses as a percentage of 2006 total assets for an international sample of banks[(a)(b)]



Sources: Capital IQ, SNL Financial Bank calculations.

a) Half-yearly loss values calculated as loss on estimated pre-tax net income plus unrealised net gains/losses. Peak losses calculated over the period 2007 H1 to 2013 H1. Income values exclude income attributable to minority interests.

b) Forty-two firms in sample. Lines extending vertically from the box indicate firms with the minimum and maximum peak losses in the sample. Lower and upper boundaries of box represent first and third quartiles of the distribution, respectively. Line within box represents the median. Marker within box represents the mean.

Table 3.C Losses experienced by international banks 1993-2014

Percentile	Three-year loss (percentage of RWAs)
90	0.1
95	3.2
97.5	6.1
99	10.9
99.5	17.5

Sources: Capital IQ and Bank calculations.

Committee judgements on framework calibration and Design

Given these uncertainties, the FPC recognised that it needs to supplement the approaches described above with a series of key judgements. This section sets out the judgements that informed the Committee's calibration of the framework.

Impact of post-crisis regulatory reforms

A key question is how far data on the past experience of bank losses is informative for the range of potential losses banks might incur in the future.

As set out in the Supplement to the December 2015 *Financial Stability Report*, the FPC judges that post-crisis regulatory reforms — in particular the introduction of credible and effective bank resolution regimes and the prospect of time-varying capital buffers — have materially reduced the appropriate level of going concern equity from earlier estimates.[1]

Credible and effective resolution arrangements are expected to improve market discipline, and therefore reduce the probability of a future financial crisis by around a third. The ability to recapitalise banks promptly and sufficiently at the onset of a crisis is also expected to reduce the economic costs of a crisis.

Orderly resolution will minimise the damage to the real economy caused by bank failure and avoid unnecessary interruption to the critical functions those banks provide to the real economy.

Effective supervision, such as the forward-looking and judgement-led prudential supervision carried out by the PRA, can help to ensure that individual banks do not take excessive risks.

Structural reform, including ring-fencing critical activities of major UK banks, will support resolvability and increase the resilience of ring-fenced banks and large building societies to risks originating in other parts of their group or the global financial system.

Active use of the UK countercyclical capital buffer applied to banks' UK exposures will, like other equity buffers, allow losses to be absorbed in stress, enabling banks to continue to support the real economy and therefore avoid situations in which they amplify the stress. Varying the buffer both up and down will avoid the need to capitalise the banking system for high risk conditions at all points in time, which the FPC judges would be economically inefficient.

Taking account of all of these developments in the regulatory frameworks, the FPC's view is that the appropriate SRB calibration would, all else equal, lie below those suggested mechanically by approaches based on expected impacts or historical loss experiences.

Choice of the maximum applicable SRB rate

As set out in the SRB Regulations, the FPC can specify SRB buffer rates up to a maximum of 3%. This is consistent with what the FPC judges as necessary for the SRB, once the impact of post-crisis regulatory reforms are taken into account.

The analysis of historical losses illustrated how the FPC could consider a maximum 3% SRB combined with a countercyclical capital buffer, varied according to changes in the Committee's view of the risk of potential losses on banks exposures, as sufficient in order to generate the necessary level of capital to be maintained throughout the cycle.

The Bank of England's cost-benefit assessment for overall capital requirements for the major UK banks suggests there are net benefits of additional capital requirements across the systemic banks of up to 1%– 3% at the mid-point of the financial cycle relative to the Basel III end-point.[2] This is based on an assessment of macroeconomic costs and benefits of higher bank capital requirements relative to the Basel III Tier 1 requirements, which come into full force in 2019. The economic benefits derive from the reduction in the likelihood and costs of financial crises. The economic costs are mainly related to the possibility that they might lead to higher bank lending rates which dampen investment activity and, in turn, GDP.

As set out in the Basel Committee's D-SIB framework, home and host authorities should seek to avoid the double counting of risks when applying buffers at

[1] See Bank of England, *Supplement to the December 2015 Financial Stability Report: The framework of capital requirements for UK banks,* December 2015, available at: www.bankofengland.co.uk/publications/Documents/fsr/2015/fsrsupp.pdf.

[2] See Brooke, M, Bush, O, Edwards, R, Ellis, J, Francis, B, Harimohan, R, Neiss, K and Siegert, C (2015), *Measuring the macroeconomic costs and benefits of higher UK bank capital requirements*, Bank of England Financial Stability Paper No. 35, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper35.pdf.

different levels of consolidation.[1] Given the scope of the SRB and the geographical scope of SRB institutions, the FPC believes that there is currently no such double counting given D-SIB regimes elsewhere.

Calibration of SRB buckets below the maximum rate

As set out in the SRB Regulations, the FPC can specify a finite set of buffer rates (0, 1.0, 1.5, 2.0, 2.5, and 3.0%) for its framework. The FPC considered setting equally- sized buckets or setting buckets that widen as firms become more systemically important. The FPC framework uses equally-spaced buckets. This is because:

• equally-sized buckets are less likely to spur the most systemic firms to become more systemic, compared with buckets that widen as total assets increase;

• such an approach may facilitate effective competition from the less systemic firms (all else equal); and

• the resulting framework aligns more closely with other frameworks internationally — including the Financial Stability Board's and the US Federal Reserve Board's framework for US G-SIBs as well as a number of D-SIB frameworks introduced elsewhere.

Within the set of buffer rates permitted under the SRB Regulations, the FPC can also decide the increment in SRB rates across buckets. With the range of buffers rates permitted under the SRB Regulations, the minimum increment permitted after the initial 1% SRB rate is 0.5 percentage points.

Larger increments between SRB buckets would deter firms from becoming more systemically important to a greater extent. But such increments could also distort firms' incentives to compete with rivals for market share. Similar frameworks that have been implemented internationally operate with increments of 0.5 percentage points, with little evidence so far of significant distortions of firm behaviour.[2]

Taking the above into account, the FPC's framework sets out that SRB rates rise in intervals of 0.5 percentage points from 1% to 3%. The resulting bucket structure is set out in **Table 3.D**.

The framework would be expected to initially have an empty bucket of 3% which would be applied to the most systemic firms should their assets expand further than those set out in existing data and in firms' current ring-fencing plans.

Table 3.D SRB resulting bucket structure

	Total assets (£ billions)	
Risk-weighted SRB rate	Lower threshold	Upper threshold
0%	–	<175
1%	175	<320
1.5%	320	<465
2%	465	<610
2.5%	610	<755
3%	≥755	

The SRB calibration is estimated to add less than 1 percentage point to the aggregate capital ratios of the UK parents of the six largest SRB institutions. This is within the Bank's assessment of the level at which extra capital would yield positive net macroeconomic benefits. The costs and benefits of the calibration are discussed further in Chapter 5.

As set out in the SRB Regulations, the FPC is required to review the SRB framework at least every two years. The calibration of the SRB, including the thresholds and the 3% top bucket, forms part of these reviews. For example, the thresholds could be adjusted in line with nominal GDP or inflation given they are expressed in nominal terms. In addition, the FPC can, if necessary, consider making a recommendation to HM Treasury to change the legal framework for the SRB.[3]

3.4 Implications of the SRB for the leverage ratio requirement

The SRB is a risk-weighted capital buffer. The FPC has already indicated that firms that are subject to a systemic risk buffer will be subject to a corresponding supplementary leverage ratio buffer, referred to as the ALRB.[4] The ALRB will apply to UK G-SIBs and other major domestic UK banks and building societies, including ring-fenced banks, as systemic risk-weighted capital buffers for these banks are rolled out.

The FPC directed the PRA to apply the ALRB to UK G-SIBs, to be phased in alongside risk-weighted requirements in July 2015, when it issued a Direction and Recommendation to the PRA to implement the leverage ratio framework for UK G-SIBs and other major UK banks

[1] See BCBS (2012) para 40: 'The Committee is of the view that any form of double-counting should be avoided and that the higher loss absorbing requirements derived from the G-SIB and D-SIB frameworks should not be additive. This will ensure the overall consistency between the two frameworks and allows the D-SIB framework to take the complementary perspective to the G-SIB framework.'

[2] For example, Denmark, Hong Kong, and the United States have implemented frameworks that increase in increments of 0.5 percentage points.

[3] It is worth noting that raising the SRB rate above 3% would require changes to EU legislation as well as to HM Treasury's SRB Regulations. Furthermore, the European Commission is in the process of considering the macroprudential review of the CRD IV and the CRR.

[4] For more detail on the leverage ratio framework, see Bank of England, *The Financial Policy Committee's powers over leverage ratio tools: a policy statement*, July 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/policystatement010715ltr.pdf.
Note that the Bank of England Act 1998 (Macro-prudential Measures) (No. 2) Order 2015 refers to an 'additional leverage ratio'. The policy statement linked above refers to a 'supplementary leverage ratio'. The two terms refer to the same policy tool.

and building societies on a consolidated basis. For UK G-SIBs, the framework includes an ALRB set at 35% of a firm's risk-weighted G-SIB buffer rate, in addition to a minimum leverage ratio requirement of 3% and a countercyclical leverage ratio buffer. The 35% conversion factor aims to ensure complementarity between the risk- based capital framework and the leverage ratio framework across institutions (via the ALRB) and over time (via the countercyclical leverage ratio buffer). The PRA regime implementing the FPC's Direction and Recommendation on the leverage ratio framework took effect from 1 January 2016.

The FPC has yet to direct the PRA to apply the ALRB to SRB institutions. It intends to direct the PRA to do so from 2019, in parallel with the introduction of the SRB.

In October 2015, the PRA consulted on a number of issues in relation to ring-fenced banks, including the application of risk-weighted capital requirements. The PRA has proposed to apply the SRB for a ring-fenced bank on a sub-consolidated basis where a ring-fenced sub-group is in place; and making a decision on a case-by-case basis where the PRA has determined that a ring- fenced bank should not be required to meet prudential requirements on a sub-consolidated basis.[1]

The FPC has noted more broadly that there are benefits to maintaining consistency in the level of application of risk-weighted capital and leverage ratio frameworks and that these need to be set against potential costs.

Given that the PRA consultation for risk-weighted requirements for ring-fenced banks and the FPC's previous aim to maintain consistency between the risk-weighted and leverage ratio frameworks, the FPC view is that the ALRB, as well as other leverage ratio requirements, would apply to ring-fenced banks at the level of application of the SRB, ie at the level of the ring-fenced bank sub-group.[2] Where the consolidated group is subject to leverage ratio requirements, the relevant leverage ratio requirements would also apply at the level of the consolidated group.[3]

There is a broader question of whether the FPC leverage ratio framework should apply also on an individual basis, that is to individual entities within groups or sub-groups that are also subject to risk-weighted requirements. The FPC's policy statement on the leverage ratio framework in July 2015 set out the FPC's intention to delay a decision on when and how to apply requirements at individual entity level until a review in 2017.[4]

The FPC's policy statement also sets out that the FPC's review would consider progress toward an international standard for a minimum leverage ratio requirement and implications for the calibration of the UK leverage ratio framework, as well as whether to extend the minimum leverage ratio requirement and countercyclical leverage ratio buffer to all PRA-regulated banks, building societies and investment firms from 2018, subject to its review in 2017.

[1] See Prudential Regulation Authority, *The implementation of ring-fencing: prudential requirements, intragroup arrangements and use of financial market infrastructures*, Consultation Paper CP37/15, October 2015, available at: www.bankofengland.co.uk/pra/Documents/publications/cp/2015/cp3715.pdf.

[2] For those ring-fenced banks where the PRA has determined that prudential requirements do not need to be applied on a sub-consolidated basis, a decision will be made on a case-by-case basis.

[3] In such cases, the interaction of requirements set at multiple levels within a group is managed to avoid that requirements are duplicative.

[4] See Bank of England, *The Financial Policy Committee's powers over leverage ratio tools: a policy statement*, July 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/policystatement010715ltr.pdf.

4 Application of the systemic risk buffer

The SRB within the UK capital framework

As set out in the Supplement to the December 2015 *Financial Stability Report,* under international capital standards and EU law, UK banks are expected to hold buffers of common equity made up of specific components that vary across banks and through time.[1] Each captures a specific risk so there is no overlap between them. The elements are:

A **capital conservation buffer**, which applies to all banks, and will be 2.5% of RWAs when transitioned in in full from 2019. This establishes a basic level of capacity to absorb losses across the system.

A supplementary system-wide **countercyclical capital buffer** — to ensure that the banking system is able to withstand stress throughout the cycle without restricting essential services, such as the supply of credit, to the real economy.

Further supplementary buffers for banks judged to be **systemically important** for either the global or domestic economy. In the United Kingdom, this consists of the buffer for G-SIBs — applied at the group level — and the SRB — to apply to SRB institutions (i.e. ring-fenced banks and large building societies). The purpose of these buffers is to raise the resilience of systemic banks in line with the greater costs of their distress or failure to the economy.

Certain components of these buffers are currently being phased in and will come into full effect from 2019.

Interaction of systemic buffers at different levels of consolidation

Internationally-agreed principles for setting systemic buffers recommend that double counting of buffers set for global and domestic systemic importance should be avoided. Under EU law, where a bank is subject to both buffers at the same level of prudential consolidation, the higher of the two buffers applies.

With the implementation of the SRB, UK G-SIB groups containing a ring-fenced bank may become subject to systemic buffers at more than one level of consolidation. This is because the G-SIB buffer applies at the consolidated group level and the SRB at the level of the ring-fenced bank sub-group.[2]

For UK banks that are subject to both the G-SIB buffer and the SRB, the SRB effectively requires a share of existing group resources to be invested (i.e. located) in the ring-fenced bank (subgroup). This is because as set out above, the two buffers – the G-SIB and SRB – are not designed to be additive.[3] In such cases, the impact of the SRB will be a redistribution of resources within the group.

Where the SRB rate exceeds the G-SIB buffer rate, a proportionally higher amount of group resources will be in the ring-fenced bank sub-group than the rest of the group.

As noted by some of the respondents to the consultation, this creates the risk that the non-ring-fenced parts of the group will not have access to a pro rata share of the G-SIB buffer, thereby reducing their resilience against global shocks. This risk is illustrated in Box 3.

FPC Recommendation

To address this risk, the FPC has made a Recommendation to the PRA that states:

"The FPC recommends to the PRA that it should seek to ensure that, where systemic buffers apply at different levels of consolidation, there is sufficient capital within the consolidated group, and distributed appropriately across it, to address both global systemic risks and domestic systemic risks."

The FPC Recommendation reflects two aspects related to financial stability. First, that a group that has been designated as a G-SIB and assigned a G-SIB buffer should hold adequate capital across the group to ensure a resilient provision of services domestically as well as globally, when the G-SIB buffer and the SRB are applied. Second, that the activities on which the G-SIB buffer is calibrated (predominantly focused around the group's interaction with the rest of the financial system - e.g. interconnectedness with other financial institutions, complexity, substitutability of underwriting and custody services, and cross-border activities), would largely be located outside the ring-fence subgroup. The FPC's Recommendation therefore is that the PRA should seek to ensure that there is sufficient capital within the consolidated group, and distributed appropriately across it, to address both global and domestic systemic risk.

[1] See Bank of England, *Supplement to the December 2015 Financial Stability Report: The framework of capital requirements for UK banks,* December 2015, available at: www.bankofengland.co.uk/publications/Documents/fsr/2015/fsrsupp.pdf.

[2] For those ring-fenced banks where the PRA has determined that prudential requirements do not need to be applied on a sub-consolidated basis, a decision will be made on a case-by-case basis.

[3] For example the BCBS Principles for D-SIBs require that authorities should impose the higher of the requirements in cases where the banking group has been identified as a D-SIB in the home jurisdiction as well as a G-SIB.

Box 3

Interaction of systemic buffers at different levels of consolidation

The application of systemic buffers at different levels of consolidation may mean that consolidated group buffers may not be high enough to ensure that there is sufficient capital within the consolidated group to address both global and domestic systemic risks.

Broadly within UK groups, the non-ring-fenced part of the consolidated group is expected to supply activities captured under the FSB's framework for G-SIBs, while the UK ring-fenced bank (RFB) will be relatively more important in supplying services critical for the UK domestic economy. So capital held in order to mitigate systemic risks should be appropriately distributed across the whole consolidated group in a way that reflects both global and domestic systemic risks.

As illustrated below, this may not be the case if the RFB sub-group buffer is higher than the G-SIB buffer applied at the consolidated group level. For the purposes of this illustration, assume that a UK consolidated group with total consolidated group RWAs of 100 is subject to a G-SIB buffer equal to 1% of group consolidated RWAs. The consolidated group's G-SIB buffer would be:

$$1.0\% * 100 \quad 1$$

The consolidated group must maintain this additional amount of common equity Tier 1 capital in order to mitigate the systemic risks that it poses to the global economy.

Assume that this consolidated group has two bank sub-groups, each with RWAs of 50, where one is a RFB and the other is a non-ring-fenced bank (non-RFB).[1] The G-SIB capital can be used freely within the consolidated group to absorb losses, so each of these banks has access to at least its proportionate share of the G-SIB buffer.

Assume that the RFB is subject to an SRB equal to 2.5% of the RFB sub-group's RWAs. The RFB's SRB would be:

$$2.5\% * 50 \quad 1.25$$

The RFB must have equity to finance its operations corresponding to this additional amount of capital in order to mitigate its systemic risks to the UK economy. Since the SRB must be financed by equity and the PRA has consulted on an expectation that a UK parent of an RFB should not make use of double leverage to fund its investment in an RFB (or other members of an RFB sub-group), then to meet its SRB the consolidated group would need to in effect place the whole of its G-SIB buffer, plus an additional 0.25, into the RFB.

Having sourced the additional equity, the group raises its equity stake in the ring-fenced bank by 1.25, so the RFB now has equity which is enough to meet its systemic risk buffer. However, this capital is now restricted from being used freely to absorb losses across the consolidated group as it must be maintained within the RFB sub-group. So this means that the whole of the consolidated group's G-SIB buffer is utilised within the RFB sub-group and so the non-RFB is undercapitalised compared to the systemic risks that it poses to the global economy.

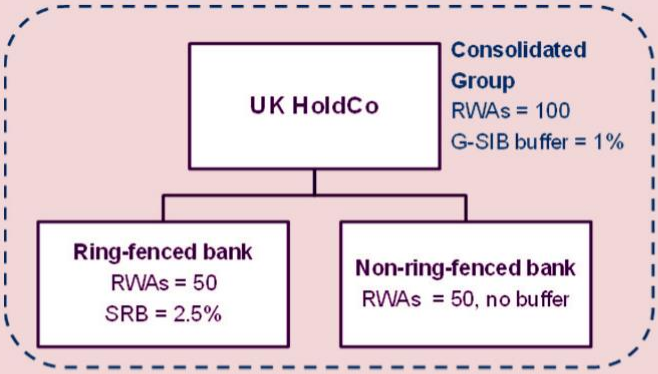
One solution would be for the PRA to seek to ensure that the non-RFB has access to its proportionate contribution of the G-SIB buffer, which would be equal to the non-RFB's RWAs times the G-SIB buffer rate:

$$1.0\% * 50 \quad 0.5$$

In order to mitigate both its domestic and global systemic risks the consolidated group would now need to have 1.25 within the RFB sub-group, to reflect the systemic risks of that bank to the UK economy, and an additional 0.5 at the consolidated group to ensure the non-RFB has access to enough equity capital to reflect its risk to the global economy.

Consolidated Group G-SIB buffer: 1.0% X 100 = 1
RFB SRB: 2.5% X 50 = 1.25
Non-RFB 'share' of G-SIB buffer= 1.0% X 50 = 0.5

Additional CET1 at Consolidated Group to reflect both domestic and global systemic risks: 1.25 – 0.5 = 0.75



Having considered the above, and in line with the spirit of the policy intentions of both the SRB and the G-SIB buffer, the FPC has decided to recommend to the PRA to seek to ensure that, where systemic buffers apply at different levels of consolidation, there is sufficient capital within the consolidated group, and distributed appropriately across it, to address both global systemic risks and domestic systemic risks.

[1] For simplicity we assume that the two sub-groups have no intra-group exposures.

5 Impact analysis

This chapter sets out the high-level costs and benefits of the SRB calibration discussed in Chapters 3 and 4. The main way in which the SRB produces benefits is by increasing the resilience of SRB institutions and therefore reducing the likelihood that they will curtail lending in distress. Reducing the likelihood of disruption to lending supply, leads to higher levels of expected future output than would be the case without the SRB.

These benefits however will be offset by economic costs. In the short run, if firms need to increase capital ratios quickly, they may deleverage, which could lead to output losses during the transition period. Additional capital requirements may also raise firms' long-run funding costs and lending spreads, which may have a structural impact on credit provision.

The analysis below examines these trade-offs. It takes into account: (i) the economic costs of transitioning to the SRB; (ii) the benefits associated with lower deleveraging in future downturns; and (iii) the net long-run benefits of higher capital, based on Bank of England staff analysis of the macroeconomic costs and benefits of higher UK bank capital requirements.[1] The net benefits of the SRB are estimated to be positive.

The cost-benefit analysis reflects the decision by the FPC to recommend to the PRA that it seeks to ensure that there is sufficient capital within a consolidated group, and distributed appropriately across it, to address both global systemic and domestic systemic risks.

This alternative approach to the interaction of systemic buffers implies that additional capital may be required at the group consolidation level compared to the proposal consulted upon. However this change is estimated to result in only a very small increase in capital at the system-wide level. Therefore the estimates of the net macroeconomic benefits are virtually unchanged compared to the proposals and, given the degree of uncertainty surrounding these estimates, should be considered to be the same. The quantitative results shown below are rounded; the differences from the consultation proposal are within the rounding tolerance.

Impact on capital

The SRB calibration discussed above would add aggregate capital of 0.45% of group RWAs for D-SIBs (**Table 5.A**).

Table 5.A Estimated marginal impact of SRB on affected firms and UK system-wide RWAs based on calibration discussed above

Aggregate capital added as % of the RWAs of:	If full SRB increment is raised	Net of G-SIB buffer[(c)]
Firms expected to be impacted[(a)]	0.70	0.45
UK system-wide[(b)]	0.40	0.30

Source: Bank calculations

a) 2019 estimated group RWAs of the firms expected to be impacted by the SRB based on the RFB data received on February 2016.
b) UK system-wide RWAs include all PRA-regulated firms as of Q3 2015.
c) Figures in this column reflect the 'full SRB' less the RFB 'share' of the G-SIB buffer, as described in the example provided in Box 3. Assumes system-wide G-SIB buffer resources equal to 1.9% of the aggregate RWAs of the firms expected to be affected by the SRB.
d) Numbers in table are rounded to the nearest 0.05%.

Costs of transitioning towards the SRB

Banks affected by the SRB that face a capital shortfall may choose to deleverage in the short-run rather than raise the additional capital. This could lead to decreased lending and output losses for the UK economy. The size of this potential deleveraging will primarily depend on the level of firms' capital shortfalls, the length of any transition period, and the extent to which other lenders can substitute for the loss of credit provision.

In markets where substitutability is high, competition from other providers will constrain banks' ability to increase interest rates and any possible reduction in lending will be largely offset through increased lending by other firms or other funding sources.

Evidence suggests substitutability is likely to be high for most types of lending with the exception of small and medium-sized enterprises (SME) lending (Box 4). Given the relatively low substitutability of SME lending in the short run, as well as the importance of SMEs to the UK real economy, any transition costs will likely be driven through the impact of the SRB on SME lending.[2]

To proxy this impact we first make the conservative assumption that firms' deleveraging during the transition phase will be equal to the whole of the net systemic risk buffer. Using different substitutability and point-in-cycle assumptions, the upper bound for the range of transition costs is found to be around a quarter of a per cent of GDP in net present value (NPV) terms (**Table 5.B**).[3]

[1] See Brooke, M, Bush, O, Edwards, R, Ellis, J, Francis, B, Harimohan, R, Neiss, K and Siegert, C (2015), *Measuring the macroeconomic costs and benefits of higher UK bank capital requirements*, Bank of England Financial Stability Paper No. 35, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper35.pdf.

[2] SMEs are estimated to account for around 60% of UK employment, 54% of output and 33% of investment.

[3] This figure is consistent with the analysis by Brooke *et al* (2015) and is calculated on a net present value basis using discount rates from HM Treasury's *Green Book*.

Table 5.B Range of costs of introducing SRB as a % of GDP assuming banks will be short of the full amount of the SRB

Assumption on bank deleveraging	GDP impact (NPV, %)
Low: Based on mid-cycle estimates/high substitution	0 - 0.15
High: Based on downturn estimates/low substitution	0 - 0.25

Source: Bank calculations

Benefits through the impact on firms' deleveraging in future downturns

In an economic downturn, firms with more available loss- absorbing capital face less pressure to cut back their lending growth. Using the same assumptions as for the transition costs, the benefits that will arise from more stable lending growth in future downturns because of the SRB are estimated to be around two thirds of a per cent of GDP (**Table 5.C**).[1]

Table 5.C Gross benefits of SRB via more stable lending growth in future downturns

Assumption on bank lending growth	Gross benefit (NPV, % of GDP)
Low: Based on mid-cycle estimates/high substitution	0.6
High: Based on downturn estimates/low substitution	0.7

Source: Bank calculations

Macroeconomic costs and benefits of higher UK bank capital requirements

The macroeconomic cost-benefit framework published by the Bank of England in December 2015 suggested that there continue to be net benefits of additional capital requirements across systemic banks of up to 1%–3% of RWAs at the mid-point of the financial cycle.[2] The SRB calibration discussed above would add aggregate capital of 0.45% of RWAs for UK D-SIBs, which is well within the range expected to deliver net positive macroeconomic benefits.

Based on the benefits of the additional system-wide capital due to the SRB, the SRB is expected to deliver benefits equivalent to around 0.15% of GDP by lowering the risk of financial crises.

Net benefits

Bringing together the costs and benefits, a net benefit of around 0.6 to 0.8% of GDP is projected. These benefits will outweigh any impact on lending spreads. Assuming a 10% equity premium, each 1% increase in capital requirements would push up firms' overall funding costs by around 5 basis points. The extent to which firms are able to pass this on to consumers will also depend on the level of competition and substitution in the market. Based on the evidence of the substitutability of lending in retail markets outlined in Box 4, the FPC believes that firms' ability to pass on this cost to consumers will be constrained.

These calculations are likely to understate the true benefits of the SRB which, as it focuses capital on those firms that pose the highest risk to UK financial stability, is likely to reduce the probability of financial crises to a greater extent than is achieved by system-wide capital buffers.

The impact of the SRB on competition and diversity in the banking sector

Impact on competition

To the extent that the SRB helps alleviate the funding advantages that SRB institutions enjoy through rating agencies' credit rating uplifts, it will help level the playing field and lessen barriers to effective competition.

The design of the SRB calibration described in this document also facilitates competition by mid-ranking and smaller SRB institutions. The £175 billion threshold for systemic importance ensures that smaller firms have enough space to grow before being subject to the SRB. Past that threshold the widely spaced buckets and graduated increase in the surcharge also ensure that less systemic firms also have enough head-room in which to compete. Box 4 highlights a number of competition considerations given the design of the SRB framework and explains how the FPC's framework seeks to mitigate such considerations and to facilitate competition having ensured that the objective of the SRB is delivered.

Impact on diversity of business models

As a risk-weighted capital requirement, the SRB is sensitive to the different risks that banks and building societies face depending on their business model. Increasing the leverage ratio requirement by an ALRB will complement the risk-weighted systemic requirement.

The additional leverage buffer will ensure that systemically important banks and large building societies that are bound or constrained by the leverage requirement are made more resilient. It will also maintain the same relative calibration of risk-weighted

[1] This is driven by private non-financial corporations (PNFC) lending in future downturns being around 1.5% higher than without the SRB.

[2] See Brooke, M, Bush, O, Edwards, R, Ellis, J, Francis, B, Harimohan, R, Neiss, K and Siegert, C (2015), *Measuring the macroeconomic costs and benefits of higher UK bank capital requirements*, Bank of England Financial Stability Paper No. 35, December 2015, available at: www.bankofengland.co.uk/financialstability/Documents/fpc/fspapers/fs_paper35.pdf.

and leverage requirements for SRB institutions as for other firms subject to the leverage ratio.

Similar to the SRB, the ALRB will help alleviate the funding advantages of SRB institutions that are bound or constrained by the leverage ratio requirement. This will lessen barriers to effective competition between these systemically important firms and other firms.

The impact of the leverage ratio framework, including the ALRB, was considered by the FPC as part of its calibration of the UK leverage ratio requirement in 2014. The FPC concluded at that time that the impact on individual firms would be modest and would not have a detrimental impact on aggregate credit creation for any sector of banks or segment of the lending market. Similar to its conclusions at the time, the FPC expects the ALRB that corresponds to the SRB to have a minor impact on the overall requirements of the firms that will be subject to it.

Box 4

Substitutability of lending in retail markets

'Substitutability' in this context is defined as borrowers' ability to switch to another lender if they face an increase in interest rates, some other deterioration of lending conditions, or are unable to renew a loan with their current lender. For first-time borrowers this simply reflects the range of alternative providers. Substitutability will be lower in markets where competition does not work well. In these markets, clients of firms subject to an SRB are less likely to find an alternative lender if the loan conditions offered by SRB institutions deteriorate.

The Competition and Markets Authority (CMA) identified a combination of factors that limit competition in SME lending — including barriers to searching, product linkages and incumbency advantages.[1] Over 90% of SMEs that borrow from a bank or building society, do so from their main current account provider, and SMEs rarely switch current accounts. Moreover, half of start-up SMEs open their business account with the same provider with which they have a personal current account.

These product linkages give large firms an incumbency advantage. Their SME clients might not react to increases in interest rates or a deterioration in other conditions, and switch to an alternative provider.

Some SMEs, however, are likely to change lender in response to a deterioration in credit conditions. They could include SMEs that in the past have switched business current accounts or have taken a loan from a bank or building society that is not their current account provider, and start-up SMEs without an existing banking relationship. While it is difficult to estimate with precision the level of substitutability, these SMEs could account for 5% to 15% of SME lending.

For other types of lending, substitutability is likely to be higher. While switching rates are low also for personal current accounts, consumers often take out mortgages and credit cards with a provider that is not their main bank or building society.[2] Large companies tend to be more sophisticated borrowers and have multiple banking relationships. They are also likely to have access to capital markets, which SMEs are less likely to.[3]

[1] See CMA (2015), Retail banking market investigation: provisional findings report October at https://assets.digital.cabinet-office.gov.uk/media/563377e8ed915d566d00000f/Retail_banking_market_investigation_-_PFs_V2.pdf

[2] Around 60% of mortgages and 58% of credit cards are provided by a bank that is not the main current account provider. CMA (2015), Retail banking market investigation: updated issues statement.

[3] There might be, however, barriers to competition that limit substitutability also for corporate borrowers, in particular for smaller ones. The Financial Conduct Authority (FCA) is conducting a market study on competition in investment and corporate banking. See FCA (2015), Investment and corporate banking market study — Terms of reference.

Annex 1
Examples of existing and proposed D-SIB frameworks

	Range of capital requirements including SIB buffers[a]	D-SIB buffers (per cent of RWAs)	D-SIB buffer calibration criteria	Current state of policies relating to leverage ratio requirements or buffers
United Kingdom	7.0%–10.0% CET1 10.5%–13.5% total capital	0%–3.0% CET1	Total assets. PRA can overlay supervisory judgement.	3% minimum, plus a countercyclical leverage ratio buffer, to be set to 35% of the corresponding risk-weighted capital buffer and to apply to all firms from the point they become subject to the minimum requirement (1 January 2016 for major UK banks and building societies and 2018 for all firms).[b] There is also a supplementary leverage ratio buffer for G-SIIs and SRB institutions to be phased in alongside the existing systemic risk-weighted capital buffers and to be set to 35% of the corresponding risk-weighted capital buffer rate.
Australia	7.0%–8.0% CET1 10.5%–11.5% total capital	1% CET1	Multiple indicators of size, substitutability, interconnectedness and complexity.	Disclosure requirement from 1 January 2015 for authorised deposit-taking institutions. Government's 'Financial System Inquiry' recommended a leverage ratio of between 3%–5%.
Canada	7.0%–8.0% CET1 10.5%–11.5% total capital	1% CET1 for 6 largest banks	Multiple indicators of size, substitutability, and interconnectedness.	3% minimum as of 1 January 2015.
Denmark	7.0%–10.0% CET1 10.5%–13.5% total capital	1% to 3% CET 1	Multiple indicators of size, substitutability, interconnectedness and complexity.	Expert group recommendation is 3% minimum, with some differentiation for Danish mortgage banks. EU disclosure requirement since 1 January 2015.
Hong Kong	7.0%–10.5% CET1 10.5%–14.0% total capital	1% to 3.5% CET 1	Multiple indicators of size, substitutability, interconnectedness, and complexity, complemented by supervisory judgement.	Disclosure requirement for locally incorporated authorised institutions from April 2015.
Netherlands	7.0%–%10.0% CET1 10.5%–13.5% total capital	1% to 3% CET1	Total assets and lending market shares, quantitative and qualitative indicators of interconnectedness.	De Nederlandsche Bank has imposed an expectation on four systemically important banks that they meet a minimum 4% leverage ratio by 2018. Subject to EU disclosure requirement since 1 January 2015.
Norway	10.0%–12.0% CET1 13.5%–15.5% total capital	2% CET 1	Total assets of at least 10% of GDP, or a lending market share of at least 5%. Discretionary overlay based on size, cross-jurisdictional activity, complexity, substitutability and interconnectedness.	EU on track to introduce a 3% leverage requirement from 2018. Disclosure requirement since 1 January 2015.
Sweden	7.0%–10.0% CET1 10.5%–15.5% total capital	3% CET 1	Multiple indicators of size, substitutability, and interconnectedness.	EU on track to introduce a 3% leverage requirement from 2018. Disclosure requirement since 1 January 2015.
Switzerland	7.0%–10.0% CET1 10.5%–28.6% total capital	1.5% to 2.0% CET1 added to Swiss firms' G-SIB buffers. D-SIB buffers not published.	Information not yet published.	3% minimum and 2% buffer for G-SIBs as of 1 January 2019.[c]
United States	7.0%–11.5% CET1 10.5-15.0% total capital	1% to 4.5% for 8 U.S. G-SIBs	The United States has not designated D-SIBs.	3% minimum requirement. 5% for G-SIBs from 2018. 3% buffer for insured depository institutions (IDIs), giving a total requirement of 6% for IDIs.

Source: Relevant authority

a) Includes only Pillar 1 minimum requirements, capital conservation, and the higher of G-SIB and D-SIB buffers.
b) Subject to a review in 2017.
c) This is a proposed revision to the current Swiss leverage ratio framework.

Annex 2

Basel Committee's D-SIB Principles [1]

Assessment methodology

Principle 1: National authorities should establish a methodology for assessing the degree to which banks are systemically important in a domestic context.

Principle 2: The assessment methodology for a D-SIB should reflect the potential impact of, or externality imposed by, a bank's failure.

Principle 3: The reference system for assessing the impact of failure of a D-SIB should be the domestic economy.

Principle 4: Home authorities should assess banks for their degree of systemic importance at the consolidated group level, while host authorities should assess subsidiaries in their jurisdictions, consolidated to include any of their own downstream subsidiaries, for their degree of systemic importance.

Principle 5: The impact of a D-SIB's failure on the domestic economy should, in principle, be assessed having regard to bank-specific factors:

(a) Size;

(b) Interconnectedness;

(c) Substitutability/financial institution infrastructure (including considerations related to the concentrated nature of the banking sector); and

(d) Complexity (including the additional complexities from cross-border activity).

In addition, national authorities can consider other measures/data that would inform these bank-specific indicators within each of the above factors, such as size of the domestic economy.

Principle 6: National authorities should undertake regular assessments of the systemic importance of the banks in their jurisdictions to ensure that their assessment reflects the current state of the relevant financial systems and that the interval between D-SIB assessments not be significantly longer than the G-SIB assessment frequency.

Principle 7: National authorities should publicly disclose information that provides an outline of the methodology employed to assess the systemic importance of banks in their domestic economy.

Higher loss absorbency (HLA)

Principle 8: National authorities should document the methodologies and considerations used to calibrate the level of HLA that the framework would require for D-SIBs in their jurisdiction. The level of HLA calibrated for D-SIBs should be informed by quantitative methodologies (where available) and country-specific factors without prejudice to the use of supervisory judgement.

Principle 9: The HLA requirement imposed on a bank should be commensurate with the degree of systemic importance, as identified under Principle 5. In the case where there are multiple D-SIB buckets in a jurisdiction, this could imply differentiated levels of HLA between D- SIB buckets.

Principle 10: National authorities should ensure that the application of the G-SIB and D-SIB frameworks is compatible within their jurisdictions. Home authorities should impose HLA requirements that they calibrate at the parent and/or consolidated level, and host authorities should impose HLA requirements that they calibrate at the sub-consolidated/subsidiary level. The home authority should test that the parent bank is adequately capitalised on a standalone basis, including cases in which a D-SIB HLA requirement is applied at the subsidiary level. Home authorities should impose the higher of either the D-SIB or G-SIB HLA requirements in the case where the banking group has been identified as a D-SIB in the home jurisdiction as well as a G-SIB.

Principle 11: In cases where the subsidiary of a bank is considered to be a D-SIB by a host authority, home and host authorities should make arrangements to co-ordinate and co-operate on the appropriate HLA requirement, within the constraints imposed by relevant laws in the host jurisdiction.

Principle 12: The HLA requirement should be met fully by common equity Tier 1 (CET1). In addition, national authorities should put in place any additional requirements and other policy measures they consider to be appropriate to address the risks posed by a D-SIB.

[1] See Basel Committee on Banking Supervision, *A framework for dealing with domestic systemically important banks,* October 2012, available at: http://www.bis.org/publ/bcbs233.pdf

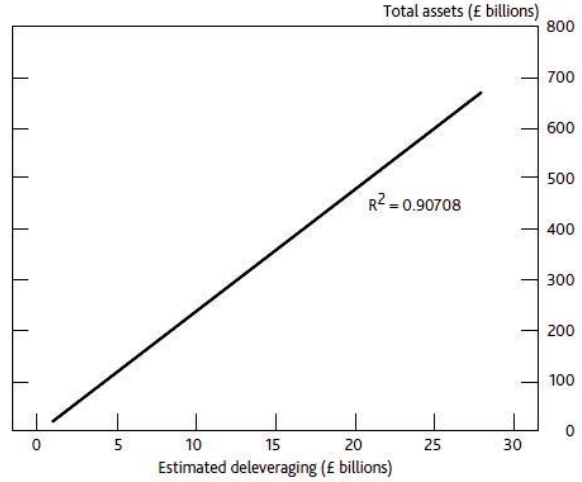
Annex 3
Relationship between total assets and deleveraging

The Financial Stability Board identified a set of critical activities, which are also reflected in the Basel Committee's criteria for assessing systemic importance — namely size, substitutability, interconnectedness and complexity.
Ring-fencing and building societies legislation seeks to prevent SRB institutions becoming systemic through the latter two channels. So the main drivers of systemic importance for SRB purposes for these firms are their size and substitutability in the provision of critical economic functions: deposit-taking, provision of credit and payments services.

Within these activities and for SRB purposes, the FPC has identified the key source of systemic importance for SRB institutions to be a sharp reduction in their supply of credit to the real economy in the event of firm distress. This suggests two criteria for assessing the risks posed by SRB institutions: (i) the potential for firms to restrict their provision of credit to UK households; and (ii) the potential for firms to restrict their provision of credit to UK non-financial corporates. The FPC has judged total assets to be sufficient to measure both the size and substitutability of SRB institutions due to the high correlations between total assets and estimates of potential deleveraging of credit for households (**Chart A**) and for private non-financial corporations (PNFCs) (**Chart B**).

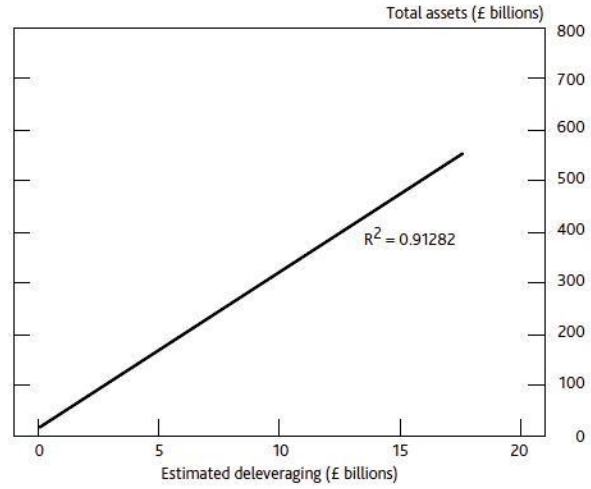
To calculate estimates of firm deleveraging of household and PNFC credit, estimates of firms' credit provision are combined with estimates from academic research conducted by Bank staff for how much firms, on average, responded behaviourally to capital shortages in the past when faced with unexpected rises in (microprudential) capital requirements.[1] These deleveraging estimates are then plotted against firm size. The resulting empirical relationship between firm size and deleveraging of credit suggests that a firm of size £175 billion may be expected, on average, to disrupt around one sixth of estimated aggregate (household plus PNFC) lending flows.

Chart A Estimated relationship between deleveraging of household credit and total assets [(a)(b)(c)]



Sources: Statistical returns, firms' 2019 ring-fencing plans and Bank calculations.
a) Data as of June 2015. Thirteen firms in sample.
b) Household lending includes secured lending, credit card and other unsecured lending to UK resident individuals.
c) Deleveraging estimates calculated based on 2.5 percentage point shock to risk-weighted Tier 1 capital.

Chart B Estimated relationship between deleveraging of PNFC [(a)] credit and total assets [(b)(c)]



Sources: Statistical returns, firms' 2019 ring-fencing plans and Bank calculations.
(a) Private non-financial corporations (PNFCs) are companies that produce goods and/or provide non-financial services.
(b) Data as of June 2015. Thirteen firms in sample.
(c) Deleveraging estimates calculated based on 2.5 percentage points shock to risk-weighted Tier 1 capital.

[1] See Bridges, J, Gregory, D, Nielsen, M, Pezzini, S, Radia, A and Spaltro, M (2014), 'The impact of capital requirements on bank lending', *Bank of England Working Paper No. 486*, available at: www.bankofengland.co.uk/research/Documents/workingpapers/2014/wp486.pdf.

Annex 4
Applying the expected impact framework

Step 1: calibrate buckets of SRB rates on a relative basis (specified in units of relative probability)

(i) Find relationship between probability of distress (PD) and capital ratios.

Using data on the past distribution of losses (1993–2014), an empirical relationship between PD and capital ratios is constructed (**Chart A**). Given this, a firm with a Tier 1 capital ratio of 8.5% would be estimated to have a PD of just over 4%, assuming a distress threshold of 6% Tier 1 (all going-concern buffers exhausted). On this basis, increasing the capital ratio to 9.5% (ie imposing a 1% SRB rate) reduces the PD to 3.5%, a relative reduction in PD by a factor of 1.2 (= 4.2/3.5).

(ii) Determine the SRB rates needed to achieve different reductions in PD.

Repeating the calculation in (i) for different increments of additional capital (ie SRB rates) provides the relative reduction in PD that would be achieved by each SRB rate. This is indicated in 1 percentage point increments in **Table 1**.

(iii) Given this relationship, determine SRB thresholds.

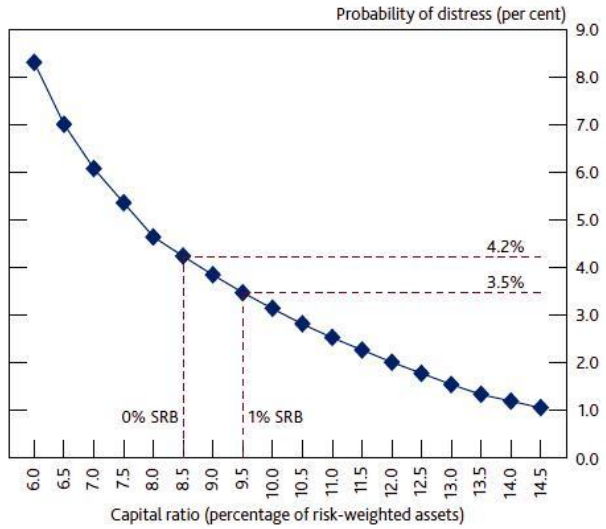
While **Table 1** provides a schedule of SRB rates for different point reductions in probability, discrete intervals of relative probabilities are needed for each SRB rate. For example, graduating the SRB rate in 1 percentage point units would require each bucket to span the range of PD reduction factors requiring between 0.5 percentage points of capital below the SRB rate and 0.5 percentage points of capital above it. Formulae for upper and lower bucket thresholds are set out opposite. Repeating this for different SRB rates provides the illustrative buckets shown in **Table 2**.

Step 2: translating buckets into units of total assets

Systemic importance scores are assumed to proxy individual firm harm. Under this framework, relative harm is equated with relative probability. Therefore SRB buckets are expressed in units of relative scores using relative scores = relative harm = relative probability. Next, the score of the non-systemic benchmark is determined, which corresponds to a relative score of 1.

This is set at a score of **£175 billion total assets**. The remaining thresholds are then translated into (£ billions total asset) scores by multiplying the non-systemic benchmark score by the PD reduction factor of each threshold (**Chart B**).

Chart A Empirical relationship between PD and capital ratios based on historical losses [(a)]



Sources: Capital IQ and Bank calculations.
(a) Distress is defined as falling below six per cent Tier 1 capital ratio.

Table 1 Empirical relationship between PD and capital ratios based on historical losses [(a)]

Setting the SRB rate at…	Reduces the PD by a factor of…
1%	1.2x
2%	1.5x
3%	1.9x
4%	2.4x
5%	3.2x
6%	4x

Sources: Capital IQ and Bank calculations.
(a) Distress is defined as falling below six per cent Tier 1 capital ratio.

$$\text{Lower threshold} = \frac{PD(8.5\%)}{PD(8.5\%) + \text{SRB rate} - (0.5\%)}$$

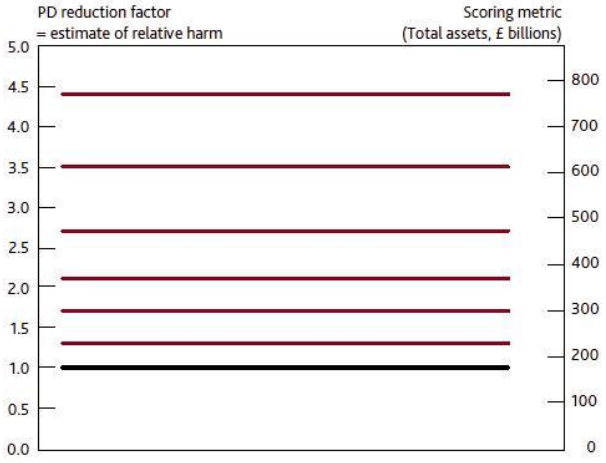
$$\text{Upper threshold} = \frac{PD(8.5\%)}{PD(8.5\% + \text{SRB rate} + 0.5\%)}$$

Table 2 Illustrative PD reduction factor thresholds for SRB surcharge buckets

SRB rate	Lower threshold	Upper threshold
0%	0.0	1.0
1%	1.0	1.3
2%	1.3	1.7
3%	1.7	2.1
4%	2.1	2.7
5%	2.7	3.5
6%	3.5	4.4

Source: Bank calculations.

Chart B Illustrative bucket thresholds in terms of total assets



Source: Bank calculations.

Annex 5
Implementing the systemic risk buffer in the United Kingdom

This chapter sets out the FPC's and PRA's legal responsibilities in regards the SRB implementation.

The SRB is a discretionary buffer in the Capital Requirements Directive (2013/36/EU) ('CRD IV') that can be used to prevent and mitigate long-term non-cyclical macroprudential or systemic risks not covered by Regulation (EU) 575/2013 (Capital Requirements Regulation — 'CRR'). The SRB can be used where there is a risk of disruption in the financial system with the potential to have serious negative consequences for the financial system and the real economy of a specific Member State.

The government has implemented the SRB in the United Kingdom through the SRB Regulations.[1]

The FPC's and the PRA's responsibilities

Under the SRB Regulations, the FPC must:

• specify a set of criteria for assessing the extent to which the failure or distress of an SRB institution might pose a long-term non-cyclical, systemic or macroprudential risk not covered by the CRR;

• create a methodology for measuring the criteria and giving SRB institutions a single score in relation to the criteria; and

• for each score specify a corresponding buffer rate for the systemic risk buffer.

For the purposes of the above, an SRB institution is in distress if, and only if, it experiences a significant deterioration in its financial situation. And a long term non-cyclical systemic or macroprudential risk is a risk of disruption to the financial system with the potential to have serious negative consequences for the financial system and the real economy in the United Kingdom.

In accordance with the CRD IV, the SRB must be made up of CET1 capital. The capital used to meet the SRB cannot be used for any other capital requirements or buffers apart from the buffer for G-SIBs.[2] The only SRB rates which the FPC may specify under the SRB Regulations are 0%, 1%, 1.5%, 2%, 2.5% and 3%.

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[1] See The Capital Requirements (Capital Buffers and Macroprudential Measures),(Amendment) Regulations 2015, available at: www.legislation.gov.uk/uksi/2015/19/pdfs/uksi_20150019_en.pdf.

[2] Referred to as 'global systemically important institutions' in the CRD IV.

Under the SRB Regulations, the PRA must then apply this methodology, as of 1 January 2019, and decide upon the basis of application (individual, sub-consolidated or consolidated). In October 2015, the PRA consulted on its approach to setting the SRB rate for a ring-fenced bank on a sub-consolidated basis where a ring-fenced sub- group is in place; and on making a decision on a case-by- case basis where the PRA has determined that a ring- fenced bank should not be required to meet prudential requirements on a sub-consolidated basis.[3]

From 2019, the PRA may also, in exercise of sound supervisory judgement, set a buffer rate for an SRB institution that is different to the one derived from the application of the FPC's framework or waive the buffer rate.

The split of responsibilities are summarised in **Table B** below.[4]

Table B Split of FPC and PRA responsibilities under the SRB Regulations

Authority	Legal responsibility
FPC	Specify criteria for assessing the extent SRB institutions pose a systemic risk.
	Create methodology for measuring the criteria and giving an SRB institution a single score.
	For each score specify a buffer rate.
PRA	Choose the level of application of the SRB.
	Apply the FPC methodology and derive a buffer rate.
	Exercise supervisory judgement when setting the buffer rate for each SRB institution; publicly justifying any discretion used.

Source: HM Treasury SRB Regulations

[3] See Prudential Regulation Authority, *The implementation of ring- fencing: prudential requirements, intragroup arrangements and use of financial market infrastructures*, Consultation Paper CP37/15, October 2015, available at: www.bankofengland.co.uk/pra/Documents/publications/cp/2015/cp3715.pdf.

[4] The PRA has further responsibilities under the Regulations in relation to recognition of EEA buffer rates.