FINANCIAL STABILITY BOARD

Implementation and Effects of the G20 Financial Regulatory Reforms

16 October 2019 5th Annual Report

The Financial Stability Board (FSB) is established to coordinate at the international level the work of national financial authorities and international standard-setting bodies in order to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies. Its mandate is set out in the FSB Charter, which governs the policymaking and related activities of the FSB. These activities, including any decisions reached in their context, shall not be binding or give rise to any legal rights or obligations under the FSB's Articles of Association.

Contacting the Financial Stability Board

Sign up for e-mail alerts: www.fsb.org/emailalert
Follow the FSB on Twitter: @FinStbBoard
E-mail the FSB at: fsb@fsb.org

TABLE OF CONTENTS

Executive Summary

Implementation of the reforms called for by the G20 after the global financial crisis is progressing, and is contributing to an open and resilient financial system…

- Coordinated by the FSB, the main financial reforms are now in place. Their implementation is well underway, including further progress during 2019.
- Large banks are better capitalised, less leveraged and hold more liquidity.
- Implementation of too-big-to-fail (TBTF) reforms is advancing, including the establishment of effective resolution regimes for banks.
- Over-the-counter (OTC) derivatives markets are simpler and more transparent. The use of central clearing has increased and collateralisation is more widespread.
- Those aspects of non-bank financial intermediation (NBFI) that contributed to the financial crisis, including various forms of structured finance, have declined significantly and generally no longer pose financial stability risks.
- The reforms make the system more resilient to shocks and thereby reduce the likelihood and severity – and associated public cost – of future crises.

… that supports the efficient provision of credit to the real economy.

- The global financial system has continued to grow and the supply of financial services has also become more diversified, including through the expansion in NBFI and through financial technology (FinTech) innovations.
- Lending to firms and households has increased, and its cost remains low – due in part to exceptionally accommodative monetary policies.
- Access to external finance for small and medium-sized enterprises (SMEs) also appears to have improved, especially in advanced economies. The FSB's analysis thus far does not identify material and persistent negative effects of G20 reforms on SME financing in general, although there is some differentiation across jurisdictions.

Yet it is critical to maintain momentum and avoid complacency, in order to fully achieve the goal of greater resilience…

- Some remaining policy work needs to be completed, particularly for the insurance sector and central counterparties (CCPs).
- Despite continued progress, implementation of the reforms is not complete and remains uneven. More work is needed to: implement the final Basel III reforms; operationalise resolution plans for banks and build effective resolution regimes for insurers and CCPs; make OTC derivatives trade reporting more effective; and further strengthen NBFI oversight and implement the agreed reforms, including policies to address asset management vulnerabilities.
- Rigorous evaluation will ensure that reforms remain fit for purpose as the financial system evolves, and new vulnerabilities emerge. The FSB continues to evaluate the effects of reforms and will identify and deliver adjustments where appropriate, without compromising on financial resilience. The FSB will shortly publish the evaluation of the effects of reforms on SME financing and is currently evaluating the effects of TBTF reforms for systemic banks.

… as vulnerabilities are evolving.

- After a decade of very low interest rates, financial institutions and markets may not be sufficiently prepared for potential economic and financial risks from adverse market developments.
- High debt levels, both public and private, in many parts of the world could expose the financial system to significant risk. A rise in risk aversion could trigger sharp increases in risk premia and swings in cross-border capital flows, which could spill over to local capital and foreign exchange markets. Changes in the global financial system, including an increasing role of investment funds, could affect the transmission and amplification of shocks.
- Financial institutions are exposed to riskier credit instruments, including leveraged loans, directly and through collateralised loan obligations (CLOs). While CLO structures appear more robust now than before the global financial crisis, leveraged loan credit quality has deteriorated and underwriting standards have loosened over the past few years.
- The FSB is closely monitoring these markets and collecting information to obtain a fuller picture of the pattern of exposures to these assets globally.

Rapid structural and technological change require continued vigilance to maintain a sound and efficient financial system.

- The FSB continues to monitor and assess the resilience of evolving market structures. These include the resilience of financial markets in stress, and the growth of NBFI and cyber risks.
- A deep and early understanding of how innovation may transform financial institutions and markets is key for harnessing benefits while containing risks. Furthering such understanding is one focus of the FSB's work.
- A wider use of new types of crypto-assets, such as global 'stablecoins' for retail payment purposes, warrants close scrutiny by authorities to ensure that they are subject to high standards of regulation.

An open and resilient financial system, grounded in agreed international standards, is crucial to support sustainable growth...

- Regulatory reforms in response to the financial crisis have been supportive of global financial integration. Some types of market fragmentation might nonetheless be a by-product of measures to improve domestic resilience.
- The FSB has identified several areas for further work on approaches and mechanisms to enhance the effectiveness and efficiency of international cooperation, and help to mitigate any negative effects of market fragmentation on financial stability.

...and requires the support of the G20 in implementing the agreed reforms and reinforcing global regulatory cooperation.

- Regulatory and supervisory bodies should lead by example in promoting the timely, full and consistent implementation of remaining reforms. This will support a level playing field and avoid regulatory arbitrage.
- Frameworks for cross-border cooperation between authorities should also be enhanced in order to build trust, allow the sharing of information, and preserve an open and integrated global financial system.
- Authorities should evaluate whether the reforms are achieving their intended outcomes, identify any material unintended consequences, and address these without compromising on the objectives of those reforms.
- Financial stability authorities should continue to contribute to the FSB's monitoring of emerging risks and stand ready to act if such risks materialise.

Implementation of reforms in priority areas by FSB jurisdictions (as of September 2019)

The table provides a snapshot of the status of implementation progress by FSB jurisdiction across priority reform areas, based on information collected by FSB and standard-setting bodies' (SSBs) monitoring mechanisms. The colours and symbols in the table indicate the timeliness of implementation. For Basel III, the letters indicate the extent to which implementation is consistent with the international standard. For trade reporting, the letters indicate to what extent effectiveness is hampered by identified obstacles.

	Basel III^						**Compen-sation**	**Over-the-counter (OTC) derivatives**				**Resolution**				**Non-bank financial intermediation**	
Reform Area	Risk-based capital	Liquidity Coverage Ratio (LCR)	Require-ments for SIBs	Large expos-ures frame-work	Lever-age ratio	Net Stable Funding Ratio (NSFR)		Trade reporting	Central clearing	Platform trading	Margin	Minimum external TLAC require-ment for G-SIBs	Transfer / bail-in / tempor-ary stay powers for banks	Recovery and resolution planning for systemic banks	Transfer / bridge / run-off powers for insurers	Money market funds (MMFs)	Securit-isation
Agreed phase-in (completed) date	*2013 (2019)*	*2015 (2019)*	*2016 (2019)*	*2019*	*2018*	*2018*		*end-2012*	*end-2012*	*end-2012*	*2016 (2021)*	*2019/2025 (2022/2028)*					
Argentina	C	C					△										**
Australia	C	C		C	&	C										*	
Brazil	C	C		C		C	△										**
Canada	C	C		C		C										**	
China	C, △	C	C, &				△	R, F									
France	MNC	LC	C														*
Germany	MNC	LC	C														
Hong Kong	C	C														**	
India	C	LC		C		C											
Indonesia	LC	C														**	
Italy	MNC	LC	C														*
Japan	C	C	C														
Korea	LC	C														**	
Mexico	C	C						R								**	*
Netherlands	MNC	LC	C														*
Russia	C	C					△									**	
Saudi Arabia	C	LC		C		C		R								**	
Singapore	C	C														**	
South Africa	C	C					△									**	
Spain	MNC	LC	C														*
Switzerland	C	C	C													**	
Turkey	C	C														**	
United Kingdom	MNC	LC	C														*
United States	LC	C	C, &				△										

Legend

	• **Basel III:** Final rule published and implemented. Risk-based capital and leverage ratio are based on the initial reform package agreed in 2010 prior to Basel III finalisation in December 2017. Requirements for SIBs – covering both D-SIBs and higher loss-absorbency for G-SIBs (for G-SIB home jurisdictions) – published and in force. • **OTC derivatives:** Legislative framework in force and standards/criteria/requirements (as applicable) in force for over 90% of relevant transactions. • **Resolution:** Final rule for external Total Loss-Absorbing Capacity (TLAC) requirement for G-SIBs published and implemented. For the powers columns, all three of the resolution powers for banks (transfer, bail-in of unsecured and uninsured credit claims, and temporary stay) and insurers (transfer, bridge and run-off) are available. Both recovery and resolution planning processes are in place for systemic banks. • **Compensation:** All FSB Principles and their Implementation Standards for Sound Compensation Practices (Principles and Standards) implemented for significant banks. • **Non-bank financial intermediation (NBFI):** MMFs – Final implementation measures in force for valuation, liquidity management and (where applicable) stable net asset value (NAV). Securitisation – Final adoption measures taken (and where relevant in force) for an incentive alignment regime and disclosing requirements.
△	• **Basel III:** Final risk-based capital rule implemented, with the exception of countercyclical capital buffer rule. • **Compensation:** All except a few (three or less) FSB Principles and Standards implemented.
	• **Basel III:** Final rule published but not implemented, or draft regulation published. • **OTC derivatives:** Regulatory framework being implemented. • **Resolution:** Final rule for external TLAC requirement for G-SIBs published but not yet implemented, or draft rule published. For the powers columns, one or two of the resolution powers for banks (transfer, bail-in of unsecured and uninsured credit claims, and temporary stay) and insurers (transfer, bridge and run-off) are available. Recovery planning is in place for systemic banks, but resolution planning processes are not. • **Compensation:** FSB Principles and Standards partly implemented (more than three Principles and/or Standards have not yet been implemented) for significant banks. • **NBFI:** MMFs – Draft/final implementation measures published or partly in force for valuation, liquidity management and (where applicable) stable NAV. Securitisation – Draft/final adoption measures published or partly in force for implementing an incentive alignment regime and disclosing requirements.
	• **Basel III**: Draft regulation not published. • **Resolution**: Draft rule for external TLAC requirement for G-SIBs not published. For the powers columns, none of the three resolution powers for banks (transfer, bail-in of unsecured and uninsured credit claims, and temporary stay) and insurers (transfer, bridge and run-off) are available. Neither recovery nor resolution planning processes are in place for systemic banks. • **NBFI**: MMFs – Draft implementation measures not published for valuation, liquidity management and (where applicable) stable NAV. Securitisation – Draft adoption measures not published for implementing an incentive alignment regime and disclosing requirements.
	• **Resolution**: Minimum TLAC requirements not applicable for jurisdictions that are not home to G-SIBs or to a subsidiary of a G-SIB that is a resolution entity under a multiple point of entry resolution strategy.
C / LC / MNC / NC	• **Basel III**: Regulatory Consistency Assessment Program (RCAP) – assessed "compliant" (C), "largely compliant" (LC), "materially non-compliant" (MNC) and "non-compliant" (NC) with Basel III rules. See the RCAP scale. The grade for SIB requirements relates only to the G-SIB requirements.
^	• **Basel III**: Does not include reforms finalised in December 2017, which take effect from 2022. Risk-based capital column excludes certain technical standards that came into force in 2017. Leverage ratio column based on the 2014 exposure definition.
&	• **Basel III**: Australia's implementation status on the leverage ratio is based on the revised (2017) exposure definition. China's G-SIB requirements are in force, while its D-SIB policy framework is under development. The US does not identify any additional D-SIBs beyond those designated as G-SIBs; its framework was found to be broadly aligned with the D-SIB principles; see the US RCAP assessment (June 2016).
R / F	• **OTC derivatives**: Further action required to remove barriers to full trade reporting (R) or to access trade repository data by foreign authority (F). See the FSB report on Trade reporting legal barriers: Follow-up of 2015 peer review recommendations (November 2018).
* / **	• **NBFI**: Implementation is more advanced than the overall rating in one or more / all elements of at least one reform area (MMFs), or in one or more / all sectors of the market (securitisation). The 2019 update was undertaken by IOSCO using the assessment methodology in its 2015 peer reviews in these areas.

Changes in implementation status since the 2018 G20 Summit

The table shows the changes in implementation status by FSB jurisdiction across priority areas since November 2018. The colour on the left-hand cell reflects the status as of November 2018, while the colour on the right-hand cell indicates the status as of September 2019.

Reform area / Jurisdiction	Basel III	OTC derivatives	Resolution	Non-bank financial intermediation+
Argentina	Large exposures	Trade reporting		
Australia	Leverage ratio			
Canada	Large exposures NSFR			
China			Recovery and resolution planning for systemic banks	
France			Minimum TLAC requirement for G-SIBs	Securitisation
Germany			Minimum TLAC requirement for G-SIBs	
Hong Kong	Large exposures		Minimum TLAC requirement for G-SIBs	MMFs
India	Large exposures			
Indonesia	Large exposures			
Italy			Minimum TLAC requirement for G-SIBs	Securitisation
Japan	Leverage ratio Large exposures		Minimum TLAC requirement for G-SIBs	
Korea				MMFs
Mexico	NSFR			
Netherlands			Minimum TLAC requirement for G-SIBs, Transfer/bridge/run-off for insurers	Securitisation
Singapore				MMFs
Spain			Minimum TLAC requirement for G-SIBs	Securitisation
United Kingdom				Securitisation
United States	Large exposures			

+ The 2019 update on MMFs and securitisation was undertaken by IOSCO using the assessment methodology in its 2015 peer review reports in these areas.

1. Implementation of reforms

In 2009, the G20 launched a comprehensive programme of financial reforms to fix the fault lines that led to the global financial crisis and build a more resilient financial system.

- The reform programme has four core elements: making financial institutions more resilient; ending too-big-to-fail (TBTF); making derivatives markets safer; and enhancing resilience of non-bank financial intermediation (NBFI).
- This section documents the substantial progress made, and remaining challenges, in implementing these reforms.

1.1 Building resilient financial institutions

Regulatory adoption of several core Basel III elements has generally been timely to date.

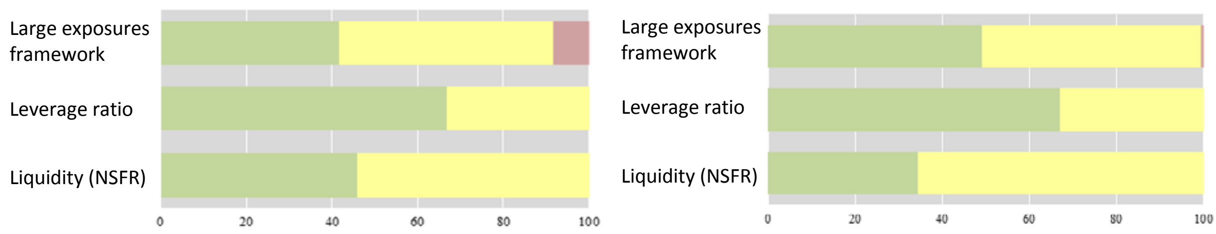
- All 24 FSB jurisdictions have the core elements of the Basel III risk-based **capital** and **liquidity** (Liquidity Coverage Ratio (LCR)) rules in force.
- Final rules on higher loss absorbency requirements for **global systemically important banks (G-SIBs)** are in force in all jurisdictions that have G-SIBs headquartered in them, while final rules on the assessment methodology and higher loss absorbency requirements for **domestic systemically important banks (D-SIBs)** are in force in 23 jurisdictions.

However, implementation of some other Basel III standards is behind schedule.

- The **leverage ratio**[1] and the **Net Stable Funding Ratio (NSFR)**, which took effect in January 2018, and the supervisory framework for measuring and controlling **large exposures**, which took effect in January 2019, have yet to be adopted by all jurisdictions (Graph 1). The leverage ratio is now in force in 16 jurisdictions (one more since 2018), while 11 jurisdictions have final rules in force for the NSFR (unchanged since 2018). Only 10 jurisdictions have final rules in force for the large exposures framework.

Implementation is behind schedule on certain Basel III standards Graph 1

As percent of number of FSB jurisdictions[1] | As percent of market size[2]



Final rule in force
Final rule or draft regulation published
Draft regulation not published

[1] The six EU members of the FSB are presented as separate jurisdictions.

[2] Market size based on assets of banks domiciled in each FSB jurisdiction at end-2017.

[1] Based on the existing (2014) exposure definition. Implementation based on the revised exposure definition, agreed in December 2017, is due by 2022.

- There is also limited progress in the adoption of other Basel III standards whose implementation deadline has passed. They include: interest rate risk in the banking book (11 FSB jurisdictions have final rules in place); standardised approach for counterparty credit risk exposures (11 jurisdictions); capital requirements for bank exposures to central counterparties (nine jurisdictions), equity investments in funds (10 jurisdictions) and TLAC holdings (14 jurisdictions); margin requirements for non-centrally cleared derivatives (16 jurisdictions);[2] and the revised Pillar 3 framework (11 jurisdictions).
- Implementation of the finalised reforms to the capital framework, which were agreed in December 2017 and will take effect from January 2022, has started in some jurisdictions but is still at a very early stage.
- Delayed implementation may have implications for a level playing field, and puts unnecessary pressure on those jurisdictions that have implemented the standards based on the agreed timelines. The reported reasons for implementation delays are: concerns over the pace of implementation in other jurisdictions (affecting the level playing field); the complexity of the standards (or difficulties in interpreting and transposing them into domestic rules); and operational challenges for banks (e.g. information technology issues).
- Jurisdictions should lead by example and implement these reforms according to the agreed timelines. The Basel Committee on Banking Supervision (BCBS) is monitoring closely the implementation of the reforms and will consider additional measures to improve implementation timeliness.

The consistency of implementation with some Basel standards should be further improved.

- ***Risk-based capital framework*** – BCBS has assessed all FSB jurisdictions.[3]
  - Eighteen (representing 69% of the market) were found to be compliant or largely compliant with risk-based capital rules; and
  - The six EU members of the FSB (assessed as a single jurisdiction, representing 31% of the market) were found to be materially non-compliant.
- ***Liquidity coverage ratio*** – All FSB jurisdictions have been assessed by the BCBS and were found to be compliant (16) or largely compliant (8) with the LCR.
- ***G-SIB and D-SIB standards*** – Ten of the 11 FSB jurisdictions that are home to G-SIBs were found by the BCBS to be compliant with G-SIB standards.[4] The D-SIB frameworks in these jurisdictions were also found to be broadly aligned with the D-SIB principles.
- ***Net stable funding ratio and large exposures framework*** – In 2018 the BCBS began to assess the consistency of implementation of the NSFR and the large exposures framework. The five FSB jurisdictions assessed so far were found to be compliant with both standards.

Work continues to develop a global insurance capital standard.

- The International Association of Insurance Supervisors (IAIS) is developing a global risk-based Insurance Capital Standard (ICS) for internationally active insurance groups. In 2018, the IAIS consulted on version 2.0 of the ICS. The ICS 2.0 will be finalised by end-2019 for confidential reporting to supervisory colleges in a five-year monitoring phase.

Adoption of regulatory and supervisory frameworks for compensation is almost completed.

- The FSB Principles and Standards for Sound Compensation Practices aim to reduce incentives for excessive risk-taking that may arise from the structure of firms'

---

2 In July 2019 the BCBS and IOSCO extended by one year the final implementation date for the margin requirements for non-centrally cleared derivatives, to 1 September 2021.

3 The most material inconsistencies relate to internal models for credit risk, counterparty credit risk and securitisation, and the definition of capital.

4 Canada's G-SIB standards have not been assessed since it only became home to a G-SIB with the 2017 G-SIB designation.

compensation schemes. These have been implemented for all banks considered significant for the purposes of the Principles and Standards. Fewer jurisdictions have implemented the principles and standards for the insurance and asset management sectors.

- The FSB's compensation-related work is now increasingly focused on assessing the effectiveness of compensation measures and sharing effective practices.

1.2 Ending too-big-to-fail

Processes for identifying G-SIFIs are in place.

- Lists of G-SIBs are reviewed annually, and the BCBS published in July 2018 its revised assessment framework for G-SIBs.
- The IAIS is developing a holistic framework to mitigate systemic risk in the insurance sector. In light of progress with that framework, the FSB, in consultation with the IAIS and national authorities, decided not to engage in an identification of global systemically important insurers (G-SIIs) in 2018. The FSB will assess the IAIS's recommendation to suspend G-SII identification from 2020 once the holistic framework is finalised.[5]
- The assessment methodologies for identifying non-bank non-insurer global systemically important financial institutions (NBNI G-SIFIs) will be finalised after the work on addressing structural vulnerabilities from asset management activities is completed.

Implementation of the policy framework for G-SIFIs has advanced the most for G-SIBs.

- Implementation of Higher Loss Absorbency as well as of reporting and disclosure requirements for G-SIBs is proceeding on a timely basis (see section 1.1).
- Supervisory frameworks have improved and supervisory colleges have been established for almost all G-SIBs. The effectiveness of colleges has improved since 2015 in terms of information-sharing, coordinated risk assessment and crisis preparedness. Yet challenges remain, including those related to legal constraints on information-sharing, supervisory resource constraints and expectation gaps between home and host supervisors.[6]
- The level of compliance with the BCBS Principles on risk data aggregation and risk reporting is still to be improved. Overall implementation progress remains very limited,[7] while the BCBS continues to monitor progress and has made additional recommendations to further promote their adoption.
- Implementation of the TLAC Standard continues. External TLAC requirements have now been finalised in all advanced economy G-SIB home jurisdictions.[8] Furthermore, all G-SIBs subject to the January 2019 implementation deadline met or exceeded the minimum TLAC ratios, as outlined in the FSB's review of TLAC implementation.[9]
- Implementation of internal TLAC is less advanced and approaches to its distribution and calibration differ among G-SIB hosts. More work is needed to ensure the appropriate intra-group distribution of TLAC across home and host jurisdictions and balance between resources pre-positioned at material subsidiaries or subgroups as internal TLAC and those

---

5 See the November 2018 FSB press release on a proposed holistic framework for the assessment and mitigation of systemic risk in the insurance sector. The IAIS will finalise the framework in November 2019, for implementation in 2020. In November 2022 the FSB will, based on the initial years of the framework's implementation, review the need to either discontinue or re-establish an annual identification of G-SIIs in consultation with the IAIS and national authorities.

6 See the BCBS Progress report on the implementation of principles for effective supervisory colleges (December 2017).

7 See BCBS report on Progress in adopting the Principles for effective risk data aggregation and risk reporting (June 2018).

8 Banks that are currently headquartered in an emerging market economy and designated as G-SIBs will comply with the minimum TLAC requirements starting from 2025.

9 See FSB Review of the Technical Implementation of the Total Loss-Absorbing Capacity (TLAC) Standard (July 2019).

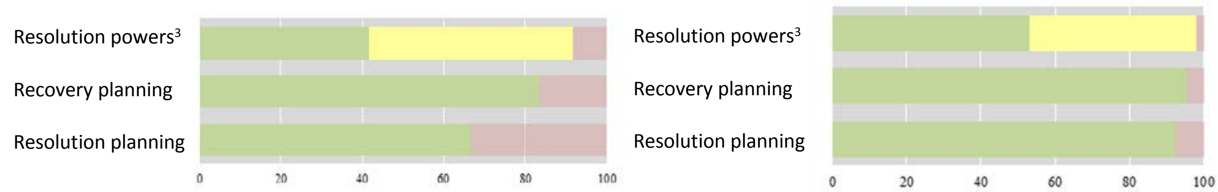
that would be readily available to be deployed flexibly where needed in times of stress. Furthermore, few jurisdictions have introduced the BCBS requirements on cross-holdings of other G-SIBs' TLAC or specific disclosure requirements for TLAC.

Substantial work remains in achieving effective resolution regimes and operationalising plans for systemically important banks and non-bank financial institutions (Graph 2).

- Almost all G-SIB home and key host jurisdictions have in place comprehensive bank resolution regimes that align with the FSB Key Attributes of Effective Resolution Regimes for Financial Institutions. However, implementation of the Key Attributes is still incomplete in some FSB jurisdictions. The powers most often lacking are bail-in (14 jurisdictions) and to impose a temporary stay on the exercise of early termination rights (nine jurisdictions). Reforms underway in several FSB jurisdictions address some, but not all, of these gaps.
- More work is needed to address operational capabilities and execution aspects of bank resolution strategies, such as operationalising bail-in execution as well as ensuring access to temporary liquidity, operational continuity and continuity of access to financial market infrastructures for banks in resolution.
- Bank resolution planning frameworks have been adopted in most (16) jurisdictions, with planning most advanced for G-SIBs and in jurisdictions that are home to them. The range of banks subject to resolution planning and some of the requirements tend to vary, particularly for banks other than G-SIBs or D-SIBs. Notwithstanding the progress made, important work remains to ensure that bank resolution plans can be put fully into effect.[10]
- Crisis Management Groups (CMGs) are established for all G-SIBs, but institution-specific cross-border cooperation agreements (CoAgs) are still not in place for some G-SIBs.[11]
- Implementation of resolution reforms is less advanced in the insurance sector. The majority of FSB jurisdictions do not have in place comprehensive insurance resolution regimes that are aligned with the Key Attributes, and lack powers and tools needed to operationalise resolution plans. Two jurisdictions introduced or strengthened powers and tools to resolve insurers in 2018.

More work is needed to implement comprehensive bank resolution regimes **Graph 2**

As percent of number of FSB jurisdictions[1] | As percent of market size[2]



Fully implemented/in place
Partially implemented/in place
Not implemented

[1] The six EU members of the FSB are presented as separate jurisdictions.

[2] Market size based on assets of banks domiciled in each FSB jurisdiction at end-2017.

[3] Composite indicator on extent to which jurisdictions have transfer, bail-in and temporary stay powers in their regime.

---

10 See the FSB Thematic Peer Review on Bank Resolution Planning (April 2019).

11 See the FSB Eighth Report on the implementation of resolution reforms (forthcoming).

- Many jurisdictions do not yet have in place comprehensive resolution arrangements for CCPs. Authorities have continued to establish CMGs for the 13 CCPs identified as systemically important in more than one jurisdiction,[12] and to agree institution-specific CoAgs that underpin their operation. However, not all CMGs have been established or agreed CoAgs, and resolution planning remains at an early stage for most CCPs.

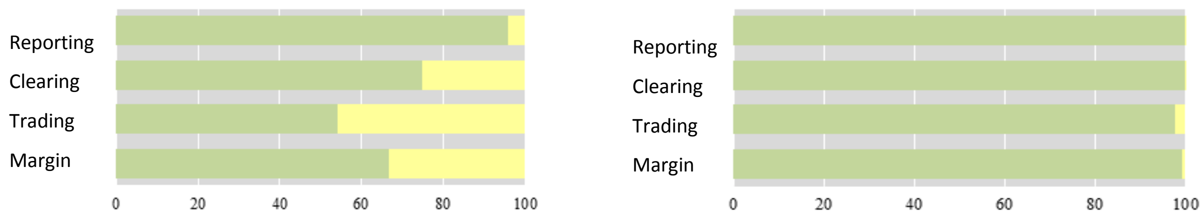
1.3 Making derivatives markets safer

Overall, good progress has been made to date across the G20's OTC derivatives reform agenda, though progress since 2018 has been limited (Graph 3).

- Implementation is most advanced for trade reporting. Comprehensive[13] trade reporting requirements have been implemented in 23 jurisdictions (one more than in 2018).
- Comprehensive central clearing frameworks have been implemented in 18 jurisdictions; platform trading frameworks in 13 jurisdictions; and margin requirements for non-centrally cleared derivatives (NCCDs) in 16 jurisdictions (all of these are unchanged since 2018).[14] Final capital requirements for NCCDs are implemented in seven jurisdictions.
- Some progress took place since last year in jurisdictions where requirements were already in force, for example in expanding the scope of products subject to mandatory clearing or to be executed on organised trading platforms.

Implementation is most advanced in the largest OTC derivatives markets **Graph 3**

As percent of number of FSB jurisdictions[1] | As percent of market size for interest rate swaps[2]



Regulatory framework and standards in force for over 90% of relevant transactions

Regulatory framework being implemented

No regulatory framework in place

[1] The six EU members of the FSB are presented as separate jurisdictions.

[2] Market size is proxied by single currency interest rate derivatives' gross turnover in April 2019 (Bank for International Settlements (BIS) 2019 Triennial Survey).

---

[12] These CCPs were reported as systemically important in more than one jurisdiction by agreement between home and host authorities on the basis of a set of criteria set out in the FSB Guidance on CCP Resolution and Resolution Planning.

[13] For the purposes of this sub-section, "comprehensive" means that the standards, criteria or requirements apply to over 90% of OTC derivatives transactions as estimated by that jurisdiction. In the case of margin requirements, "comprehensive" means that the standards, criteria or requirements in force in a jurisdiction would have to apply to over 90% of transactions covered, consistent with the BCBS–IOSCO Working Group on Margin Requirements phase in periods. See the FSB report on OTC Derivatives Markets Reforms: 2019 Progress Report on Implementation (October 2019).

[14] The BCBS and IOSCO extended in July 2019 the final implementation phase of margin requirements by one year to support smooth and orderly implementation across jurisdictions.

The availability and use of trade repositories (TRs) and CCPs remains stable.

- There were 34 TRs (or similar infrastructures) authorised in FSB jurisdictions as of September 2019, 10 of which were authorised in multiple jurisdictions.[15] Trade reporting requirements are most prevalent for interest rate and foreign exchange derivatives.
- Over the past year, CCPs were recognised to provide clearing services in two jurisdictions, and there has been continued broadening of the asset class offerings of existing CCPs.
- Progress continues on cross-border cooperation and coordination aspects such as deference. One jurisdiction started exercising deference with regard to foreign jurisdictions' regimes, while several others extended deference to further jurisdictions.
- Central clearing of OTC derivatives products has increased over time, though it has plateaued over the past year (Graph 10).

Work is ongoing at the international level to make trade reporting truly effective.

- Notwithstanding implementation progress, challenges to the effectiveness of trade reporting remain. These include a lack of globally harmonised data reported to TRs and data quality issues as well as challenges accessing TR data.
- Jurisdictions report efforts to reduce reporting barriers and masking relief (as recommended by the FSB's 2018 follow-up report on trade reporting legal barriers),[16] wider use of the Legal Entity Identifier (LEI) in trade reporting, streamlining reporting processes and TR operations, and taking steps to facilitate access to TR data.
- While TR data is beginning to be more widely used by authorities, its usefulness continues to be affected by data quality issues, including differences in the details of reporting requirements among TRs and jurisdictions that make it challenging to aggregate or compare data from different sources. International work streams have been focusing on technical implementation challenges affecting the effectiveness of trade reporting.[17]

1.4 Enhancing resilience of non-bank financial intermediation

- The FSB has created a system-wide monitoring framework to assess global trends and risks in NBFI and, in collaboration with the standard-setting bodies (SSBs), has been developing policy measures to strengthen its oversight and regulation.[18]

Implementation of the FSB policy framework for the oversight and regulation of NBFI continues to progress.

- In 2018, all FSB jurisdictions (as well as Belgium, Cayman Islands, Chile, Ireland and Luxemburg) participated in the annual monitoring exercise to track global trends and risks (e.g. maturity/liquidity transformation and leverage) in NBFI. The exercise benefited from improvements in data consistency and comprehensiveness, and will continue to be refined

---

15 The EU is counted as one FSB member jurisdiction for this purpose.

16 See the FSB report on Trade reporting legal barriers: Follow-up of 2015 peer review recommendations (November 2018).

17 The joint Committee on Payments and Market Infrastructures (CPMI)-IOSCO working group on harmonisation of key OTC derivatives elements issued technical guidance on the Unique Transaction Identifier (UTI) in February 2017 and on the Unique Product Identifier (UPI) in September 2017, and on critical data elements (CDE) other than the UTI and UPI in April 2018. The FSB has recommended implementation of the UTI in all FSB jurisdictions by end-2020 and of the UPI by 2022Q3. CPMI-IOSCO has also recommended implementation of the CDE by 2022Q3. Governance arrangements for the maintenance, oversight and global implementation of these OTC derivatives data elements have been agreed.

18 These are in the areas of: mitigating risks in banks' interactions with non-bank financial intermediaries; reducing the susceptibility of MMFs to "runs"; improving transparency and aligning incentives in securitisation; dampening pro-cyclicality and other financial stability risks in securities financing transactions; and assessing and mitigating financial stability risks posed by other non-bank financial intermediation.

over time to provide more accurate measures of the degree to which such intermediation gives rise to bank-like financial stability risks.

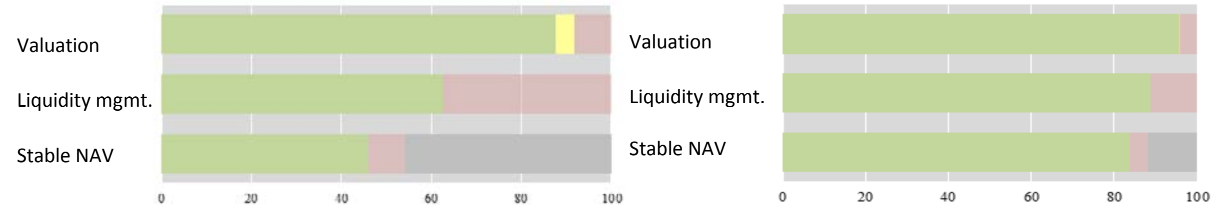
- To strengthen the monitoring of NBFI, the FSB is assessing data availability and making improvements to its annual monitoring exercise. The FSB will also launch a thematic peer review in 2020 to assess progress in implementing its 2013 policy framework.

The implementation of policies to reduce the run risk of MMFs continues (Graph 4).

- Implementation of the International Organization of Securities Commissions (IOSCO) recommendations for MMFs is most advanced in 14 FSB jurisdictions (two more since 2018), including the two largest markets (China and the US).
- Twenty-one FSB jurisdictions have implemented the fair value approach for the valuation of MMF. Thirteen jurisdictions permit MMFs that offer a stable NAV (in specific circumstances and with safeguards). Eleven out of the 13 jurisdictions have final implementation measures in force.
- Progress in liquidity management is less advanced and less even, with nine jurisdictions yet to have published draft regulation in this area.

Implementation progress is most advanced in the largest MMF markets **Graph 4**

As percent of number of FSB jurisdictions[1] | As percent of market size[2]



Final rule in force
Final rule or draft regulation published
Draft regulation not published
Not applicable

[1] The six EU members of the FSB are presented as separate jurisdictions.

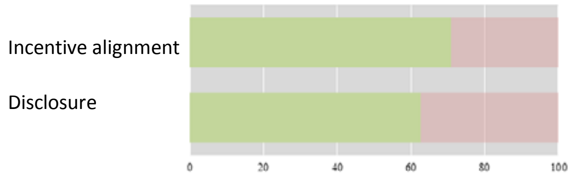
[2] Market size based on assets under management (AUM) in FSB jurisdictions (accounting for 83% of global AUM) at end-2014.

Implementation of incentive alignment approaches for securitisation is ongoing (Graph 5).

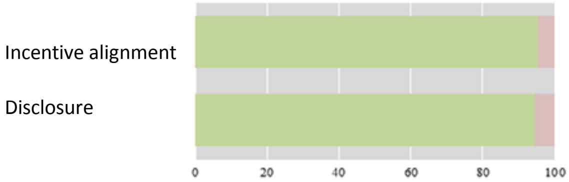
- The IOSCO recommendations have been implemented by 15 FSB jurisdictions (five more since 2018).
- Most jurisdictions that have implemented incentive alignment requirements (partially or fully) oblige issuers to (directly or indirectly) retain typically 5% of the credit risk of the securitisation. However, there are exemptions to these requirements in some jurisdictions.

Implementation of incentive alignment reforms for securitisation is uneven **Graph 5**

As percent of number of FSB jurisdictions[1]



As percent of market size[2]



Final rule in force

Final rule or draft regulation published

Draft regulation not published

[1] The six EU members of the FSB are presented as separate jurisdictions.

[2] Market size based on value of securitisation issuance (collateralised debt obligations, mortgage-backed securities and asset-backed securities) in FSB jurisdictions during 2014.

Implementation of reforms in other policy areas for NBFI is at an earlier stage.

- To mitigate spillovers of risks to the banking system, the BCBS published a framework for the identification and management of step-in risk.[19] Ten jurisdictions have adopted risk-based capital requirements for banks' investments in the equity of funds (one more since 2018), which took effect in 2017. Nine jurisdictions have adopted the supervisory framework for measuring and controlling banks' large exposures (see section 1.1).
- IOSCO issued final recommendations to improve liquidity risk management practices in investment funds,[20] so as to address liquidity mismatch in open-ended funds as part of its operationalisation of FSB policy recommendations to address structural vulnerabilities from asset management activities. IOSCO also issued a consultation paper on a proposed framework to assess leverage used by investment funds.[21] Once implementation of the FSB recommendations is progressed, IOSCO and the FSB will assess if these recommendations have been implemented effectively, and the FSB will report back to the G20.
- Implementation of the FSB policy recommendations for securities financing transactions (SFTs) has seen significant delays in some jurisdictions. These delays stem mainly from the new date for implementing the minimum haircut standards on bank-to-non-bank SFTs into banking regulation as part of Basel III, which is now January 2022. The FSB has therefore decided to adjust the implementation timelines for its recommendations related to minimum haircuts standards for non-centrally cleared SFTs.[22] Meanwhile, efforts continue to adopt standards and processes on global securities financing data collection and aggregation that are relevant for financial stability monitoring and policy responses.

[19] Step-in risk refers to the risk that a bank will provide financial support to a non-bank financial entity beyond, or in the absence of, its contractual obligations should the entity experience financial stress. See the BCBS Guidelines on Identification and management of step-in risk (October 2017).

[20] See the IOSCO Recommendations for Liquidity Risk Management for Collective Investment Schemes (February 2018).

[21] See the IOSCO Report: Leverage – Consultation Paper (November 2018).

[22] See FSB adjusts implementation timelines for its policy recommendations to address financial stability risks in securities financing transactions (July 2019).

1.5 Progress in other reform areas

- Considerable progress has been made in implementing the second phase of the **G20 Data Gaps Initiative** (DGI-2), which aims to address the gaps identified in the crisis by enhancing the collection and dissemination of reliable and timely statistics for policy use. Areas of progress include derivatives data, sectoral accounts and international banking statistics. However, key challenges remain in fully implementing the DGI-2 recommendations and high-level support is essential to overcome them by the initiative's completion in 2021.[23]
- Authorities have warned that publication of the London Interbank Offered Rate (LIBOR), a major **interest rate benchmark**, may cease once official sector support for it is withdrawn at end-2021. A great deal of progress has been made to identify overnight nearly risk-free rates and other alternative reference rates in currency areas currently reliant on LIBOR benchmarks, as well as to plan for and in some markets begin to execute transition to those rates. Work has continued among other widely used interbank offer rates to strengthen both existing methodologies (to make them more grounded in actual transactions) and regulatory frameworks and supervision. Significant work continues to strengthen contractual robustness to the risk of discontinuation of major interest rate benchmarks.[24]
- Since its endorsement by the G20 in 2012, the **Global LEI System** has been successfully brought into operation, with over 1.4 million entities uniquely identified by an LEI in more than 200 countries. Widespread coverage has already been achieved in OTC derivatives and securities markets, where the LEI has come the closest to meeting the G20's objectives. Notwithstanding this progress, the LEI has far to go to meet the G20's objective of truly global LEI adoption and the FSB has published recommendations to deliver on this fundamental post-crisis reform. Further adoption of the LEI by legal entities worldwide and its use by authorities for regulatory purposes are essential to fully reap its collective benefits.[25]
- The international and US accounting standard setters have issued separate standards on accounting for **expected credit losses**: International Financial Reporting Standard (IFRS) 9 came into force in 2018, while the Current Expected Credit Loss standard will be effective from 2020. Both are forward-looking and take account of the lessons of the crisis. The FSB has asked the standard-setters to monitor the consistent application of these standards. In May 2017 the International Accounting Standards Board (IASB) published IFRS 17, which sets out a single, consistent approach to accounting for insurance contracts. The standard will likely come into force in 2022, subject to the final decision of the IASB.
- The FSB is engaging with the International Forum of Independent Audit Regulators (IFIAR), global networks and other relevant stakeholders regarding ways to promote international financial stability by enhancing public confidence in auditors and the **quality of audits**, especially for SIFIs. In May 2019, IFIAR published the latest annual survey of findings from its members' inspections of audit firms. Despite a downward trend in inspection findings, the findings rates are still high and progress is uneven across jurisdictions. These results affirm the view that the global networks must continue efforts to strengthen their systems of quality control and drive consistent execution of high quality audits.

---

23 See The G20 Data Gaps Initiative (DGI-2): The Fourth Progress Report – Countdown to 2021 (October 2019).

24 See the FSB's Reforming major interest rate benchmarks: Progress report (November 2018).

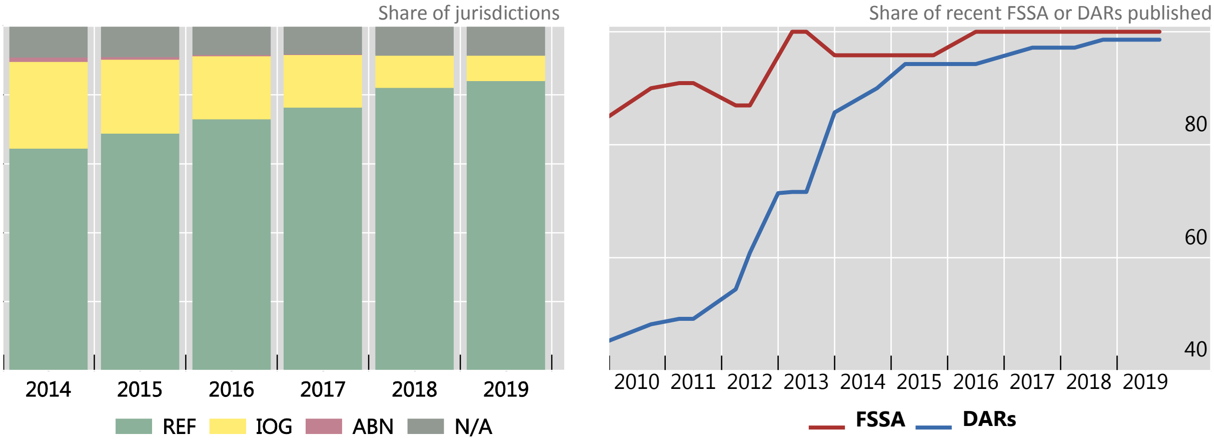
25 See the FSB Thematic Review on Implementation of the Legal Entity Identifier (May 2019).

- FSB jurisdictions report continued progress in implementing other reforms and their commitments to lead by example (Graph 6).[26] The FSB launched the second round of country peer reviews of its members in late 2018, with five underway (see Annex 1).

Progress in other reforms and in disclosing adherence to international standards **Graph 6**

Implementation in other reform areas has continued to progress in recent years

All FSB jurisdictions have published the reports and assessment results of their latest FSAP



Left panel: Percentage of FSB jurisdictions reporting implementation progress in other (non-core) reform areas, adjusting for structural breaks (i.e. substantial changes in the reporting benchmark/guidance of the recommendations) so as to facilitate comparability over time. REF=Implementation completed. IOG=Implementation ongoing. ABN=Applicable but no action envisaged at the moment. N/A=Not applicable. Source: FSB Implementation Monitoring Network Survey.

Right panel: Percentage of FSB jurisdictions publishing their latest Financial Sector Stability Assessment (FSSA) and Detailed Assessment Reports (DARs) of adherence to the core principles for banking, insurance and securities markets.

[26] See the FSB's Monitoring of Other Areas and webpages on FSAP participation and FSB country peer reviews.

2. Effects of reforms

- Regulatory reforms have been an important driver of change in the global financial system. With the main elements of reforms now agreed, the FSB and SSBs are increasingly focused on evaluating their effects. The objective is to assess whether reforms are achieving their intended outcomes and help identify any material unintended consequences that may have to be addressed without compromising on the agreed level of resilience.
- The FSB already completed evaluations under its agreed framework[27] on the financing of infrastructure investment and on incentives to centrally clear OTC derivatives. The findings from the latter evaluation have been used as input by the Basel Committee in revising the leverage ratio treatment of client cleared derivatives in the Basel III framework.[28]
- Additional evaluations are underway on the effects of reforms on SME financing (to be completed in late 2019); and on TBTF reforms (to be completed in late 2020).[29]
- This section describes some changes to the global financial system associated with the reforms, and presents the main findings of the FSB's SME financing evaluation.

2.1 Financial system resilience

Large banks are much better capitalised, less leveraged and hold more liquidity (Graph 7).[30]

- Since 2009, large internationally active banks have more than doubled their common equity tier 1 (CET1) capital and risk-based capital ratios, while their leverage has dropped by half. They now fully meet the Basel III capital reforms agreed in 2010 and in 2017, while 90% (75%) of all G-SIBs also meet the 2019 (2022) minimum external TLAC requirements.
- Banks have increased their capital ratios primarily by retaining earnings, rather than by raising equity or shedding assets. Variation across regions in their adjustment to these ratios reflects different starting points, macroeconomic conditions and structural factors.
- Liquidity profiles have also improved, mainly due to an increase in high quality liquid assets such as government bonds, lower reliance on short-term wholesale funding and, in some cases, deposits at central banks due to unconventional monetary policies. By mid-2018, banks fully met the LCR requirements and liquidity shortfall vis-à-vis the NSFR neared zero.
- The build-up of capital (including TLAC) and liquidity buffers, and the associated shifts in bank business models, reflect both regulatory requirements and market pressures in light of the crisis experience. A number of studies suggest that the core of the global banking system is more resilient to economic or financial shocks than before the crisis.[31]

---

27 See the FSB Framework for Post-Implementation Evaluation of the Effects of the G20 Financial Regulatory Reforms (July 2017).

28 See the BCBS Leverage ratio treatment of client cleared derivatives (June 2019).

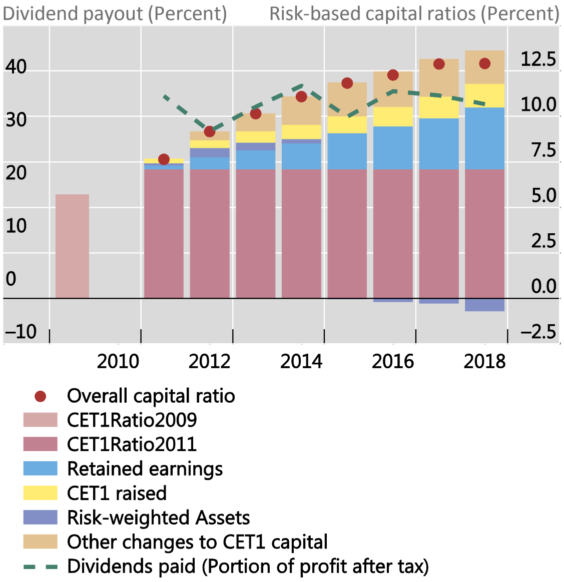
29 See the FSB Evaluation of too-big-to-fail reforms: Summary Terms of Reference (May 2019).

30 See the BCBS Basel III Monitoring Report (March 2019) and the Survey on the interaction of regulatory instruments: results and analysis (BCBS Working Paper 35, March 2019).

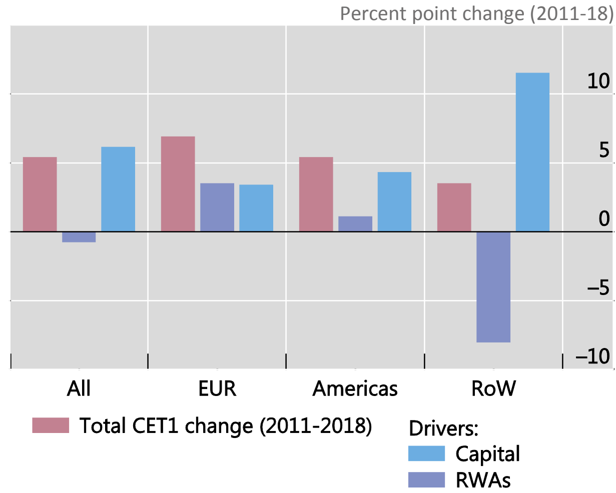
31 See, for example, Structural changes in banking after the crisis (Committee on the Global Financial System (CGFS) Papers No 60, January 2018); the 2018 BIS Annual Economic Report; The costs and benefits of bank capital - a review of the literature (BCBS Working Paper 37, June 2019); Review of New York Fed Studies on the Effects of Post-Crisis Banking Reforms by Crump et al (Federal Reserve Bank of New York Economic Policy Review 24, no. 2, October 2018); Playing it safe: Global systemically important banks after the crisis by Goel et al (BIS Quarterly Review, September 2019); and Is taxpayers' money better protected now? An assessment of banking regulatory reforms ten years after the global financial crisis by Carmassi et al (European Central Bank (ECB) Macroprudential Bulletin, March 2019).

Banks have significantly strengthened their capital and liquidity positions — Graph 7

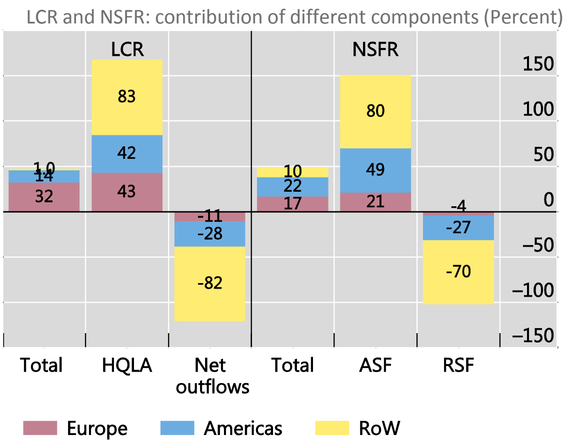
Large banks have increased their capital ratios mainly through retained earnings…



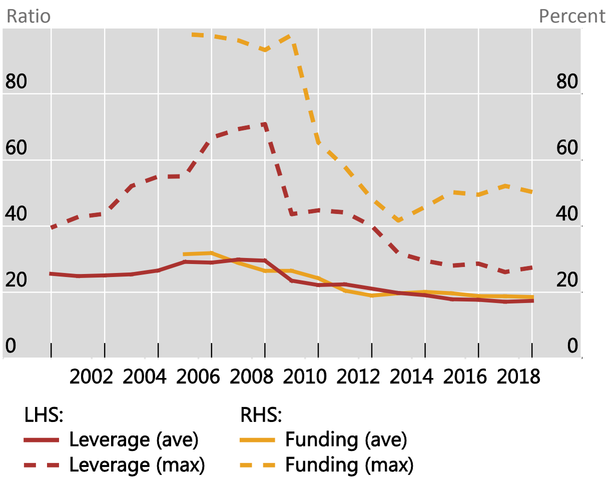
… although there is some variation across regions



Banks have built liquidity buffers largely by increasing the proportion of their liquid assets



Large banks have reduced leverage and improved their funding profiles. Extreme cases have been addressed.



Top left: Evolution of fully phased-in CET1 capital ratios of the BCBS "Group 1" banks (i.e. banks with Tier 1 capital of more than €3 billion and internationally active), decomposed into retained earnings accumulation, CET1 capital raised, changes in risk weighted assets (RWAs), and other changes. The graph also shows dividends as a proportion of after-tax profits paid by these banks. The figure for 2009 is based on the different sample of the BCBS Quantitative Impact Study and is therefore not fully comparable, while there is no available data for 2010.

Top right: The graph displays changes in CET1 capital ratios as of 2018H2 versus 2011H2. RWAs= risk weighted assets. A negative RWA contribution to CET1 capital ratios (due to an increase in exposures or higher RWAs per unit of exposure) implies an increase of RWAs and vice versa. EUR=Europe (31 banks), Americas (18 banks); RoW= Rest of the World (37 banks).

Bottom left: Cumulative contributions (2012-2018) of main components of Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) by region. RoW = Rest of the World. HQLA = High Quality Liquid Assets. ASF = Available Stable Funding. RSF = Required Stable Funding. Number of banks for LCR / NSFR respectively: Europe (23/30), Americas (14/15), RoW (32/40).

Source for these graphs: October 2019 BCBS Basel III Monitoring Report.

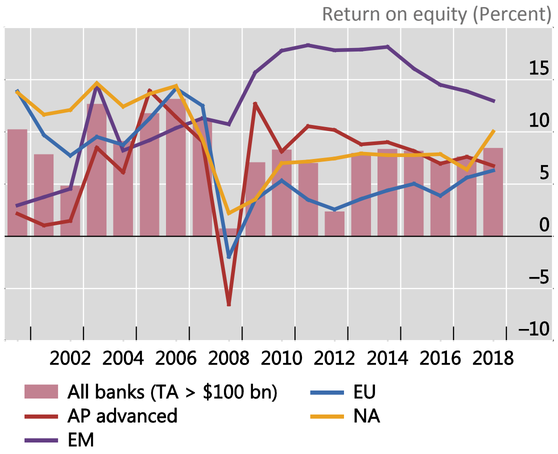
Bottom right: Bank leverage (total assets to tier 1 capital), and wholesale funding (as a portion of total funding) of G-SIBs. All series are adjusted for missing values. Source: FitchConnect.

Bank profitability varies across regions and this is reflected in market valuations (Graph 8).

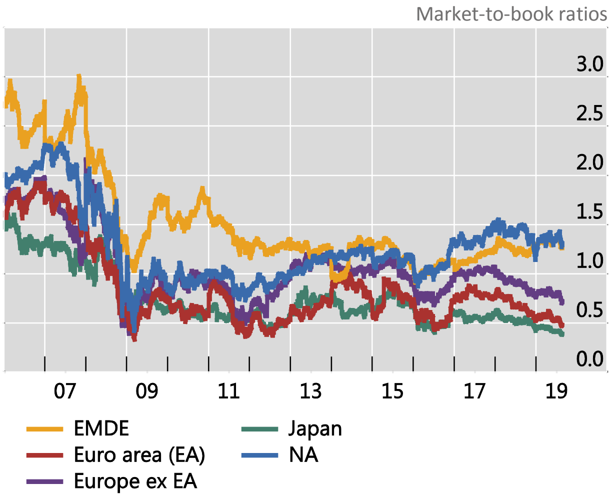
- Overall, bank profitability remains below pre-crisis levels, with large differences across regions. The profitability of banks in Emerging Market and Developing Economies (EMDEs) is declining but remains higher than before the crisis, while the profitability of banks in Advanced Economies (AEs) has improved in recent years but from a lower level.
- The reduction in average return on equity levels of AE banks is explained by macro-financial conditions (low growth and interest rates, flatter yield curves), structural factors (competition from non-banks, inflexible cost structures), lower leverage and maturity transformation (partly due to the reforms and compressed term premia) and, in some cases, legacy issues (e.g. non-performing loans, restructuring costs, misconduct fines).[32]
- The variation in profitability across regions is also reflected in banks' price-to-book ratios,[33] which suggest that market participants expect banks to further adjust their business models in response to changes in technology and the macroeconomic environment. Such changes may be necessary to ensure that banks remain resilient in the face of economic and financial shocks.

Bank profitability varies across regions, and is reflected in market prices **Graph 8**

Large banks' profitability has recovered since the crisis, but differs across regions



Some banks' price-to-book ratios remain low, signaling concerns about their profitability and business models



Left panel: Return on equity for all global banks with total assets exceeding US$100 billion as of end-2015, weighted by total assets as of end-2015 and grouped by region. Asia Pacific (AP) advanced=Australia/Hong Kong/Japan/Korea/Singapore, EU=Europe, NA=Canada/US, EM=Emerging Markets (Brazil/China/India/Malaysia/Mexico/Qatar/Russia/Saudi Arabia/Taiwan/ Turkey/UAE). A few outlier banks were removed from the sample (2002-03 for the AP advanced region, 2010-12 for Europe). Source: FitchConnect.

Right panel: Market-to-book ratios are based on Emerging Markets-Datastream Banks Index (EMDE), EMU-Datastream Banks index (Euro area (EA)), Europe-EMU Out-Datastream Banks index (Europe ex EA), Japan-Datastream Banks index (JP), and North America-Datastream Banks index (NA). Source: Datastream.

[32] See, for example, the 2019 BIS Annual Economic Report (Chart I.14) and the May 2019 ECB Financial Stability Review (Chapter 3.1).

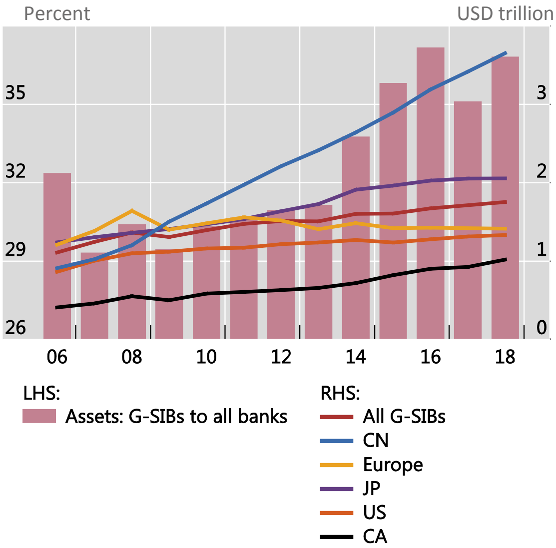
[33] See, for example, The ABCs of bank PBRs: What drives bank price-to-book ratios? by Bogdanova et al. (BIS Quarterly Review, March 2018).

There has also been progress in addressing the risks associated with systemically important banks (Graph 9).

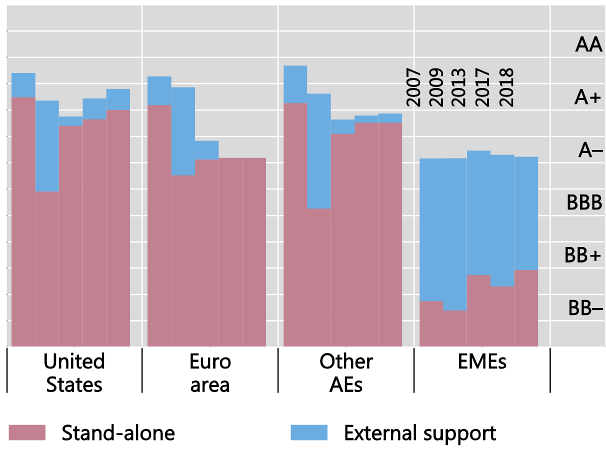
- The share of G-SIB assets in global banking assets has increased in recent years. While the average balance sheet size of G-SIBs in Europe and the United States has remained broadly stable, it has increased markedly for G-SIBs in Asia (particularly China) and Canada. At the same time, most G-SIBs have reduced their systemic importance scores (based on the BCBS assessment methodology) over this period by changing their balance sheets in ways that are consistent with the G-SIB framework's aims.[34]
- Estimates of the perceived funding cost advantages of G-SIBs have generally declined since the crisis. Differences across jurisdictions and banks reflect a number of factors, including the stage of implementation of the reforms as well as macro-financial developments.[35]
- Higher total loss-absorbing capacity and progress in resolution reforms have contributed to this decline. Yet, important technical and operational aspects need to be addressed to ensure that resolution plans can be executed effectively (see section 1.2).

Large regional differences in the evolution of TBTF indicators since the crisis **Graph 9**

G-SIBs' share in global banking assets has increased in recent years, though there are large regional differences



Credit support ratings have dropped in some jurisdictions since the peak of the crisis



Left panel: Evolution of average asset size of G-SIBs in absolute terms by region (using 2015 exchange rates) and overall as a proportion of global banking assets (based on a stable sample of commercial banks in FitchConnect). The sample is based on the 2018 list of G-SIBs published in November 2018. Source: FitchConnect.

Right panel: Decomposition of bank credit ratings into stand-alone rating (red) and ratings uplift from external support (blue). Asset-weighted averages. Based on a sample of 47 large banks, using Fitch ratings. Source: Updated series based 2018 BIS Annual Report.

---

34 The categories of systemic importance are cross-jurisdictional activity, size, interconnectedness, substitutability/financial institution infrastructure, and complexity. See An examination of initial experience with the global systemically important bank framework (BCBS Working Paper 34, February 2019). See also The Impact of the Identification of GSIBs on their Business Model by Violon et al (ACPR/Banque de France, Economic and Financial Discussion Note 33, March 2018).

35 See, for example, Do the Basel III Capital Reforms Reduce the Implicit Subsidy of Systemically Important Banks? Australian Evidence by Cummings and Guo (CIFR Paper no. 131/2016, 2019); To be or not to be a G-SIB: Does it matter? by Schich and Toader (Journal of Financial Management, Markets and Institutions 2/2017, 2017); and The value of an implicit state guarantee for systemic banks by Blix et al (FI Analysis No. 15, 22 January 2019).

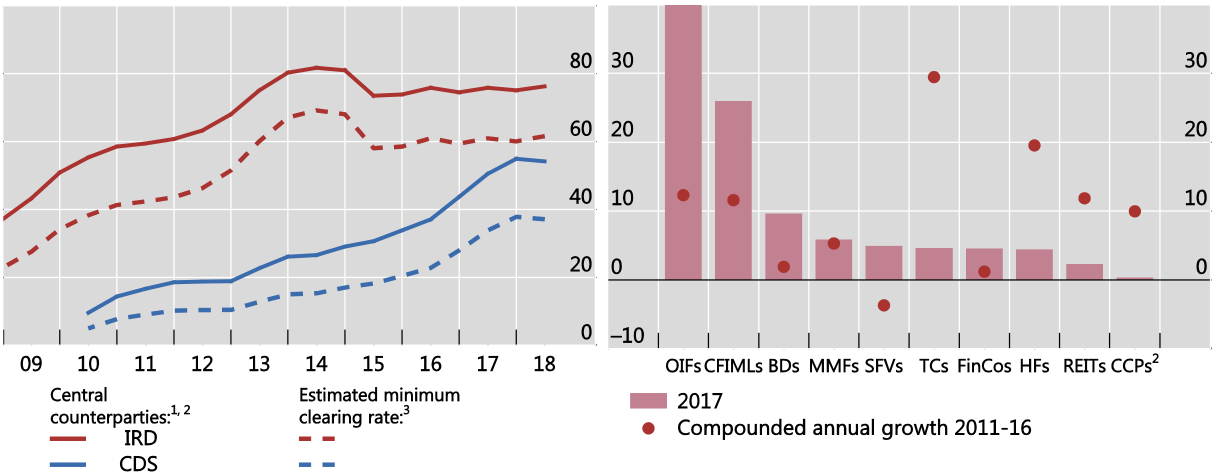
The reforms have enhanced the resilience of the non-bank financial sector, but continued monitoring is needed to address potential vulnerabilities (Graph 10).

- Meaningful progress has been made toward mitigating systemic risk in OTC derivatives markets. These markets are more transparent due to trade reporting data; central clearing has increased markedly in interest rate derivatives and credit default swaps, simplifying much of the previously complex and opaque web of derivatives exposures; the CCPs supporting that clearing are more resilient;[36] and more collateral is in place to reduce counterparty credit risks within the system.
- At the same time, clearing is concentrated in a few CCPs and their systemic importance has increased.[37] Work by the FSB and SSBs is underway to promote CCP resilience, recovery planning and resolvability, including in relation to financial resources to support CCP resolution and the treatment of CCP equity in resolution.
- Asset-backed commercial paper programmes, structured investment vehicles and collateralised debt obligations of sub-prime and other lower quality credits have declined significantly since the crisis. Reforms have also contributed to a reduction in vulnerabilities in areas such as MMFs, repos and securitisation.[38]
- Other forms of non-bank financing, such as trust companies and investment funds, have grown rapidly since the crisis, underscoring the importance of effective operationalisation and implementation of agreed policies to address their structural vulnerabilities.[39]

Improvements in resilience of financial markets **Graph 10**

Clearing rates have increased over time, as have collateralisation rates

The composition of non-bank financial assets has shifted and legacy assets have declined.



---

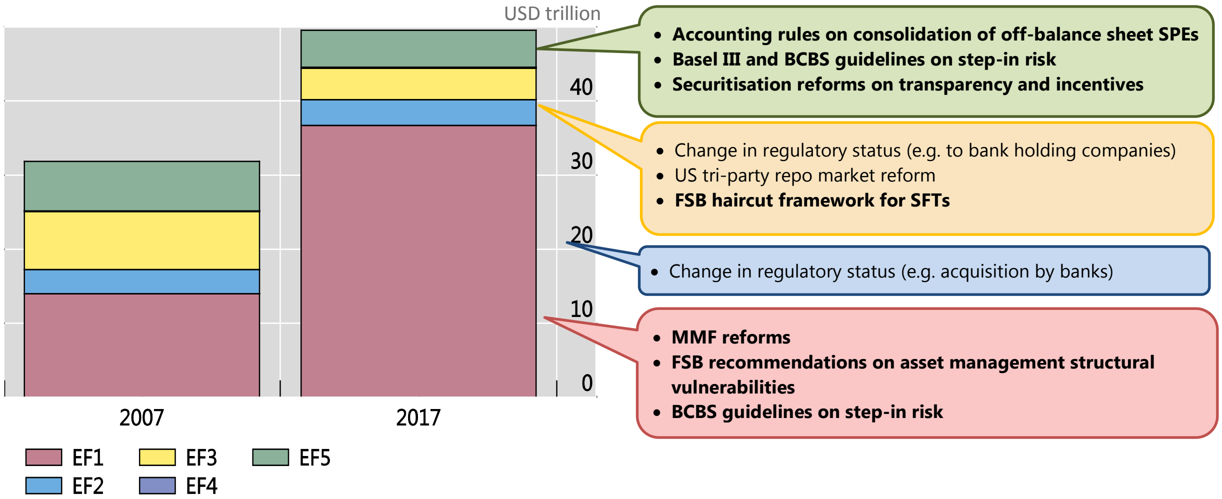
36 See the FSB-BCBS-CPMI-IOSCO Incentives to centrally clear over-the-counter (OTC) derivatives: A post-implementation evaluation of the effects of the G20 financial regulatory reforms – final report (November 2018).

37 See Clearing risks in OTC derivatives markets: the CCP-bank nexus by Faruqui et al (BIS Quarterly Review, December 2018).

38 See the FSB Assessment of shadow banking activities: risks and the adequacy of post-crisis policy tools to address financial stability concerns (July 2017).

39 See the FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019). IOSCO is taking steps to operationalise FSB policy recommendations to address structural vulnerabilities from asset management activities.

The reforms are addressing the evolving system of non-bank financial intermediation



Top left: 1 For interest rate derivatives (IRD), data for CCPs prior to end-June 2016 are estimated by indexing the amounts reported at end-June 2016 to the growth since 2008 of notional amounts outstanding cleared through LCH's Swapclear service. 2 As a percentage of notional amounts outstanding against all counterparties. 3 Figures for the share of positions to which CCPs are counterparties (solid line) are used to estimate the proportion of trades that are cleared (dashed line). The latter is estimated as (CCP/2)/(1–(CCP/2)), where CCP represents the share of notional amounts outstanding that dealers report against CCPs. The CCP share is halved to adjust for the potential double-counting of interdealer trades novated to CCPs. Source: Clearing risks in OTC derivatives markets: the CCP-bank nexus by Faruqui et al (BIS Quarterly Review, December 2018).

Top right: Growth of major Other Financial Intermediary (OFI) subsectors, 2016 vs 2011. TRs=Trust companies, HFs= Hedge Funds, REITs=Real estate investment trusts and RE funds, OIFs= Other Investment funds, CFIMLs=Captive Financial Institutions and Money Lenders, MMFs= Money Market Funds, BDs=Broker Dealers, FinCos=Finance Companies, SFVs= Structured Finance Vehicles. Source: FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019).

Bottom graph: The bubbles show examples of policy measures applied to the relevant economic functions (EFs) since the financial crisis. The five EFs are: (i) management of collective investment vehicles with features that make them susceptible to runs; (ii) loan provision that is dependent on short-term funding; (iii) intermediation of market activities that is dependent on short-term funding or on secured funding of client assets; (iv) facilitation of credit creation; and (v) securitisation-based credit intermediation and funding of financial entities. Measures in bold are those agreed by the G20. Economic Function 4 (EF4) is not visible in this graph as it represents only 0.4% of total assets for the narrow measure of NBFI. Source: Adapted from the FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019).

2.2 Trends in financial intermediation

The financial system has grown since the crisis, particularly non-bank finance (Graph 11).

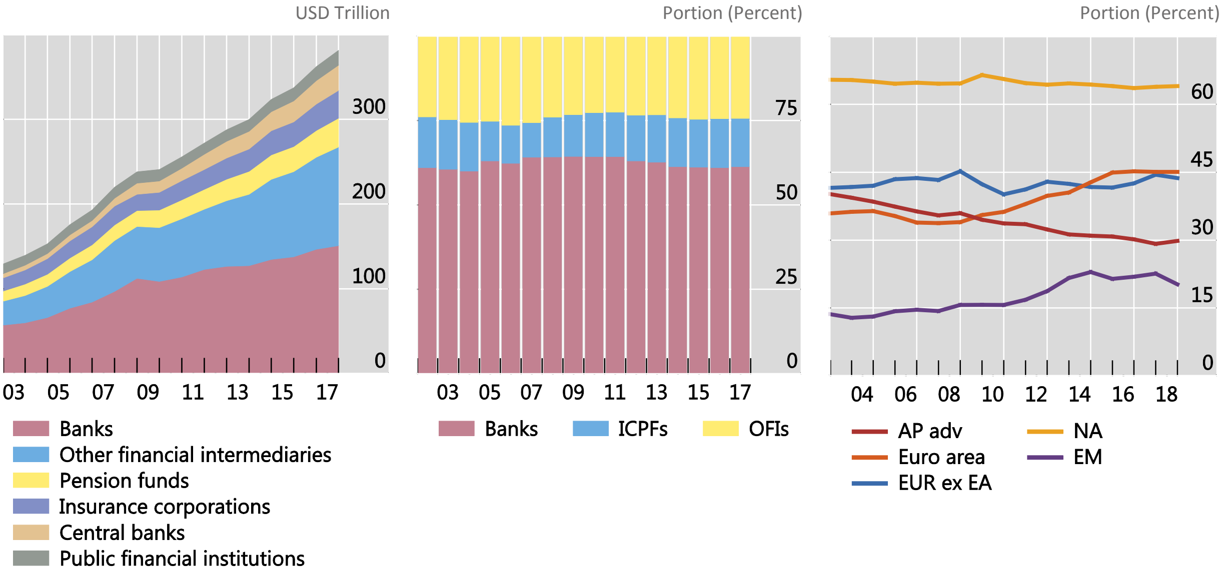
- After a short dip associated with the crisis, global financial assets have continued their growth both in absolute terms and relative to gross domestic product (GDP). This has been mirrored by higher indebtedness of sovereigns, non-financial corporates and households.
- Although banks' assets have grown in absolute terms, their share has gradually dropped from 45% in 2009 to about 40% of total financial system assets in recent years.
- NBFI has grown in several AEs (particularly in the Euro area) and EMDEs since the crisis, while it has declined in some advanced Asian economies. At the aggregate level, non-bank credit has grown most rapidly in some EMDEs, albeit from low levels, but also for specific market segments in AEs (e.g. mortgage and consumer lending). Underlying drivers for this growth include long-term structural (e.g. demographics leading to asset accumulation) and

conjunctural (e.g. accommodative monetary policies, search for yield) factors. The reforms may have contributed to growth by increasing the relative cost of bank-based finance.[40]

- This shift represents a welcome increase in diversity of the sources of finance supporting economic activity and is therefore in line with the G20 reform objectives, provided that such financing is resilient. To this end, the FSB has been monitoring and, if applicable, assessing the growth and any associated financial stability risks in NBFI (see section 3.2).

The financial system continues to grow, particularly non-bank finance **Graph 11**

Global financial system assets have continued to grow, driven by non-banks | The share of total credit granted by non-bank financial intermediaries has grown since the crisis | The share of non-bank credit to the private non-financial sector has increased in the Euro area and EMs



Left Panel: Assets of financial institutions, 21 jurisdictions and the Euro Area. Public FIs=Public Financial Institutions; OFIs=Other Financial Intermediaries (such as investment funds, hedge funds, broker dealers, money market funds etc.). Source: FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019).

Middle panel: Data refers to credit granted to all sectors for 21 jurisdictions and the euro area. Exchange rate effects have been netted out using a constant exchange rate (from 2015). ICPFs = Insurance corporations and pension funds. OFIs = Other Financial Intermediaries. Source: FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019).

Right panel: Portion of total credit to private non-financial sector granted by non-banks (debt securities, including bonds and short-term paper as well as currency/deposits). AP adv=Australia/Hong Kong/ Japan/Korea/Singapore. EUR ex EA=Switzerland/UK. NA=Canada/US. EM=Emerging Markets (Argentina/Brazil/ China/India/Indonesia/Mexico/Russia/Saudi Arabia/South Africa/Turkey). Source: BIS statistics on credit to the non-financial sector.

The improvement in resilience has been achieved without impeding the overall provision of credit to the real economy (Graph 12).

- Total lending as well as bank lending to non-financial firms and households has been growing in all regions in recent years. This is consistent with the empirical literature that finds changes in capital requirements associated with reductions in loan supply in the shorter term, but also that financially stronger banks are better able to lend over a longer-

[40] See, for example, the FSB Global Monitoring Report on Non-Bank Financial Intermediation 2018 (February 2019) and the 2018 BIS Annual Economic Report.

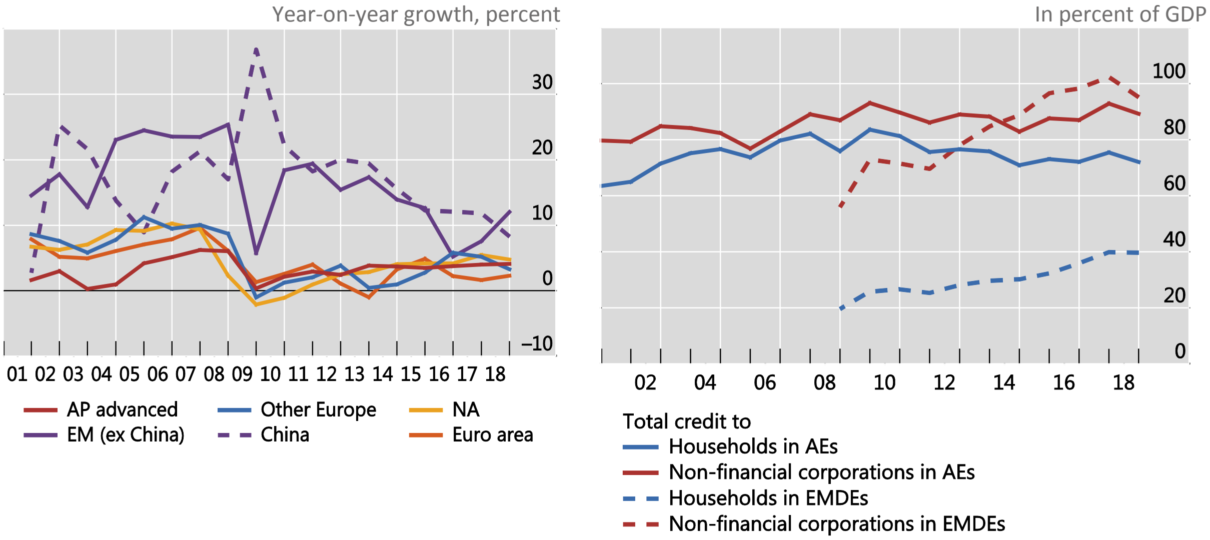
term horizon.[41] The FSB evaluations on the effects of reforms on infrastructure finance and SME financing (see section 2.4) did not point to material unintended consequences.

- Credit growth in EMDEs has been elevated at least since the crisis. Although growth has slowed recently, there are no signs to suggest a shortage in the supply of financing.

Credit to the private non-financial sector continues to grow in all regions **Graph 12**

Total credit growth to the private non-financial sector has resumed in all regions and has slowed in EMDEs

This has led to a significant rise in credit relative to economic output in EMDEs since the crisis



Left panel: Year-on-year growth of outstanding total lending to the private non-financial sector (all data as of Q4, geographical weights based on 2016 data). Asia-Pacific (AP) Advanced=Australia/Hong Kong/Japan/Korea/New Zealand/Singapore. Other Europe=Denmark/Norway/Sweden/Switzerland/UK. NA=Canada/US. EM=Emerging Markets (Argentina/Brazil/Chile/Colombia/India/Indonesia/Malaysia/Mexico/Russia/Saudi Arabia/South Africa/Thailand/Turkey). Source: BIS statistics on credit to the non-financial sector.

Right panel: Outstanding debt of households and non-financial corporates as a percent of GDP at the corresponding level of aggregation. Source: BIS statistics on credit to the non-financial sector.

The cost of bank credit and bond finance has remained generally low in recent years, supported by exceptionally accommodative monetary policies (Graph 13).

- Bond spreads for non-financial corporates have been fairly stable since the crisis while yields have declined due to the low interest rate environment.
- Bank lending rates have decreased while net interest margins have been fairly stable since the crisis, with some variation in levels across regions.

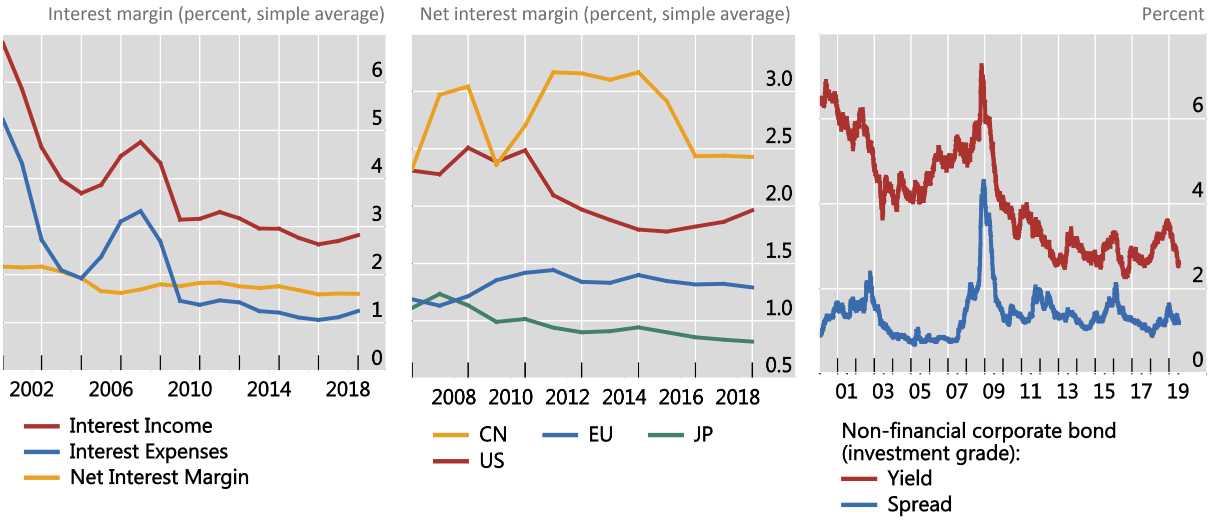
[41] See, for example, Why bank capital matters for monetary policy by Gambacorta and Shin (BIS Working Paper No 558, April 2016), Macroeconomic impact of Basel III: Evidence from a meta-analysis by Fidrmuc and Lind (Journal of Banking and Finance, 2018), The costs and benefits of bank capital - a review of the literature (BCBS Working Paper 37, June 2019); Impact of financial regulations: insights from an online repository of studies by Boissay et al (BIS Quarterly Review, March 2019) and Macroeconomic effects of bank capital regulation by Eickmeier et al (Bundesbank Discussion paper 44/2018, September 2018).

The cost of financing has remained low **Graph 13**

G-SIBs' net interest margins have been fairly stable over time…

…but have tended to vary across regions

Non-financial corporate bond yields and spreads remain at low levels



Left Panel: Interest income = Interest Income to total earning assets. Interest expenses = Interest expenses to total earning assets. Data is limited before 2005. Source: FitchConnect.

Middle panel: Source: FitchConnect.

Right panel: Global Non-Financial Corporates Index. Source: Bank of America Merrill Lynch.

2.3 Global financial integration

Evidence to date suggests that the financial crisis has slowed down, but not reversed, the long-term trend toward higher global financial integration.

- Global financial integration has increased in recent years,[42] driven mainly by an increase in equity and foreign direct investment, while debt financing has exceeded pre-crisis levels.
- The global integration of securities markets continues to grow. Non-financial corporates have accessed international debt markets and holding of cross-border securities have been growing. The availability of financial infrastructures, such as CCPs clearing OTC derivatives in more than one jurisdiction, continues to increase (see section 1.3).

Lending by international banks has shifted to more stable locally funded sources (Graph 14).

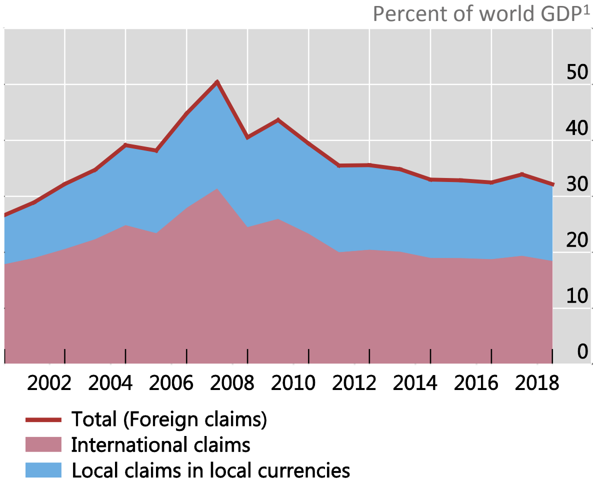
- A decline in cross-border lending by European banks[43] accounts for most of the retrenchment in international banking since the crisis. Cross-border lending between other regions has continued to expand.

[42] Financial integration typically encompasses financial openness, free cross-border movement of capital and integration of financial services.

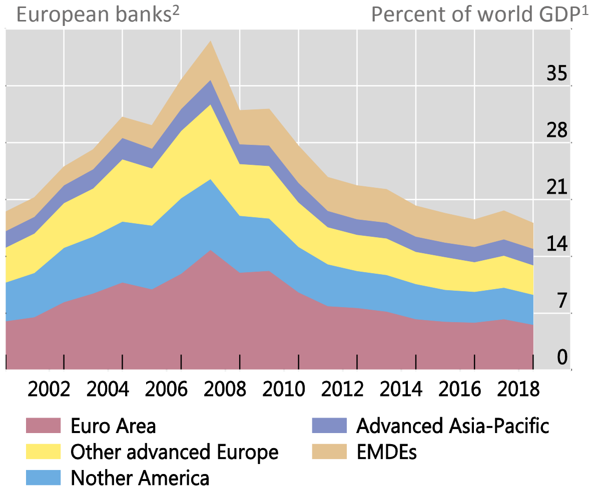
[43] More generally, a substantial portion of the post-crisis decline in international lending is accounted for by interbank lending. See the FSB's 2017 Annual Report to the G20, Graph 21 (top right graph).

International bank lending has declined and its structure shifted post-crisis — Graph 14

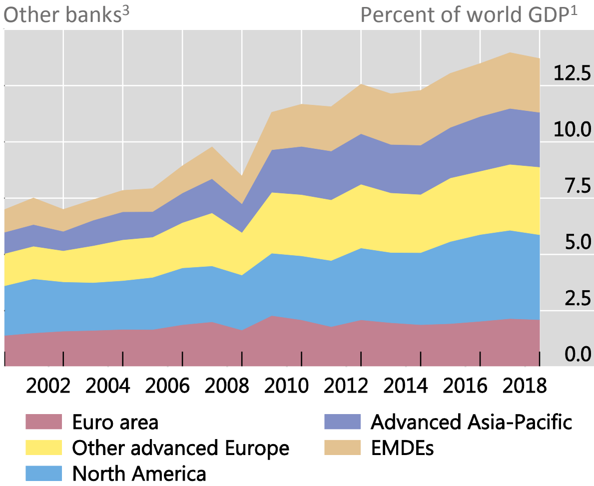
International bank claims have contracted more than foreign banks' local claims



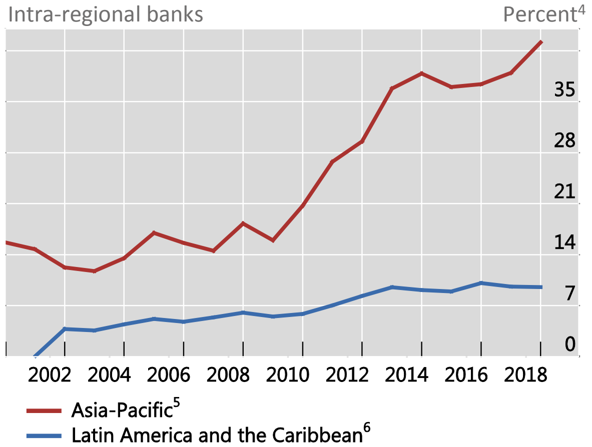
European banks' foreign claims on entities in advanced economies have dropped substantially



Other banks' foreign claims on entities in all regions have continued to increase



The share of intra-regional claims has increased in EMDEs in Asia and Latin America



Foreign claims are BIS reporting banks' worldwide consolidated financial claims on counterparties outside their home country. International claims are cross-border claims in any currency and local claims of foreign affiliates denominated in non-local currencies. Local claims in local currencies are claims with a counterparty located in the same country as the banking office and denominated in domestic currency. See BIS.

[1] Amounts of outstanding claims as a percentage of world GDP converted to US dollars at the exchange rate prevailing on respective reference dates. [2] Foreign claims by banks headquartered in reporting euro area countries (Austria, Belgium, Germany, Spain, Finland, France, Greece, Ireland, Italy, Luxembourg, Netherlands and Portugal); and those in other European countries (Denmark, Norway, Switzerland, Sweden and United Kingdom). [3] Foreign claims by banks headquartered in North America (Canada and United States), Advanced Asia pacific (Australia, Chinese Taipei, Hong Kong SAR, Japan, Singapore and South Korea) and Emerging economies (Brazil, Chile, India, Mexico, Panama and Turkey). [4] As a percentage of total international claims by all banks in BIS reporting countries. [5] For Asia-Pacific, sum of international claims on the region of banks headquartered in Chinese Taipei, Hong Kong, India, Korea, Singapore and the offices of banks located in the region which have a parent institution from a non-BIS reporting country (assuming these are headquartered in Asia). [6] For Latin America and the Caribbean, sum of international claims on the region of regional banks (Brazil, Chile, Mexico, Panama) and the offices of banks located in the region which have a parent institution from a non-BIS reporting country (assuming these are headquartered in the region).op panels and bottom left panel: All series relate to foreign claims. Bottom right panel: The series show international claims (taken from the CGFS Papers No. 60, Structural changes in banking after the crisis, 2018).

Sources: BIS consolidated banking statistics on immediate counterparty basis; IMF World Economic Outlook (April 2019).

- At the same time, international bank lending has become more local, funded by foreign banks' local affiliates in local currency.
- Except for some European banks, cross-border lending by AE banks to EMDE borrowers has grown post crisis. There is also evidence of increased intraregional lending within EMDEs, in particular in Latin America and Asia.[44]

Access to correspondent banking relationships has continued to decline.

- The FSB put in place in 2015 an action plan to assess and address the issue. However, correspondent banking relationships continued to decline in 2018. To be effective, the plan needs further work by the private sector, national and international authorities.[45]
- Initial positive steps have been taken to implement the 2018 FSB recommendations on strengthening the access of remittance service providers to banking services but here too further work by remittance firms, banks, national and international authorities is needed.[46]

2.4 Evaluation of SME financing[47]

The FSB has assessed the effects of G20 financial reforms on SME financing.

- Given that banks are the primary providers of external SME financing, the reforms that are most relevant and have been implemented to date are the initial Basel III capital and liquidity requirements agreed in 2010. These were the main focus of the evaluation.
- The evaluation adopted a multipronged approach to arrive at comprehensive and robust results. It drew on a broad range of information sources and was based on various types of analyses and extensive stakeholder feedback.

SME lending growth has resumed in recent years after falling during the financial crisis for a number of jurisdictions.

- Both bank data and surveys suggest that SME lending has increased and that access to external finance for SMEs has improved in recent years, particularly in AEs (Graph 15). Notwithstanding this, the volume of bank lending to SMEs remains below the pre-crisis level in some jurisdictions. Moreover, the improvements in SME financing are less obvious for EMDEs as well as for micro firms and start-ups with less tangible collateral.
- SME lending rates have followed the overall decline in interest rates in most jurisdictions, although they remain consistently higher than the rates for larger firms. There is also some evidence that the share of collateralised loans to SMEs has increased since the crisis.
- Access to public capital markets for SMEs is not common, partly reflecting the higher cost of tapping those markets and informational opacity relative to large firms. Alternative, non-traditional forms of financing such as FinTech credit have seen their importance increase in recent years, albeit from a low base.

Feedback from stakeholders suggests that SME financing trends are largely driven by macroeconomic conditions and factors other than financial regulation.

- These factors include the public policies put in place to address SME financing constraints as well as benign financial conditions (in particular, the low interest rate environment), which may have mitigated some of the negative effects of financial reforms.

---

44 See The growing footprint of EME banks in the international banking system by Cerutti et al (BIS Quarterly Review, December 2018).

45 See FSB action plan to assess and address the decline in correspondent banking: Progress report (May 2019).

46 See Remittance service providers' access to banking services: Monitoring of the FSB's recommendations (May 2019).

47 The findings here are based on the FSB Evaluation of the effects of financial regulatory reforms on small and medium-sized enterprise (SME) financing: Consultation report (June 2019). The final report will be published in November 2019.

- Various public sector policies are in place across FSB jurisdictions to support SME financing. The focus of these policies has largely shifted from broad-based countercyclical support in the aftermath of the crisis to more targeted policies in recent years.

For the reforms in scope, the analysis does not identify material and persistent negative effects on SME financing in general, although there is differentiation across jurisdictions.

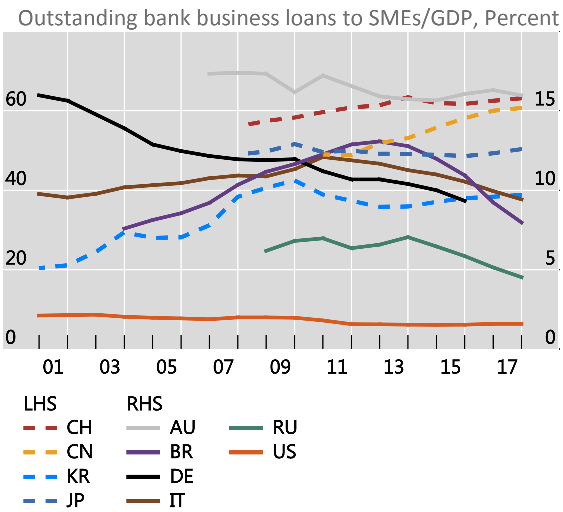
- There is some evidence that the more stringent risk-based capital requirements under Basel III slowed the pace and in some jurisdictions tightened the conditions of SME lending at the most "affected" banks (i.e. those least capitalised ex ante) relative to other banks (Graph 15). These effects are not homogeneous across jurisdictions and they are generally found to be temporary. The type of impact and its relative strength may also depend on the stage of the economic cycle during the reform implementation and may have been stronger for jurisdictions affected by an economic crisis.
- This conclusion is consistent with the literature on the effects of bank capital regulations and with stakeholder feedback that SME financing is largely driven by other factors. The evaluation also provides some evidence for a reallocation of bank lending towards more creditworthy firms after the introduction of reforms, but this effect is not specific to SMEs.

Any potential costs found in this evaluation should be framed against the wider financial stability benefits of the G20 reforms estimated in ex ante impact assessments.

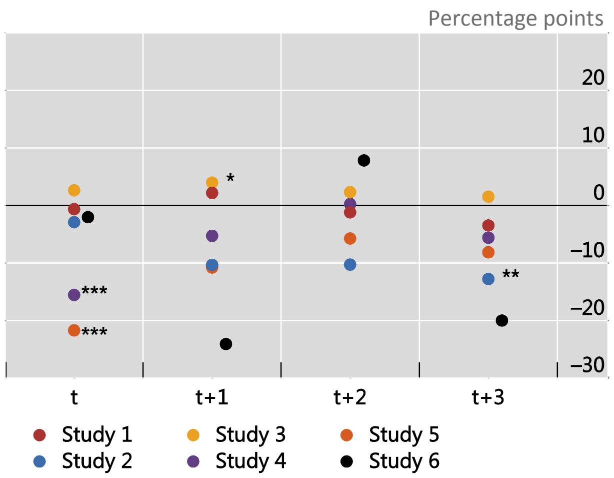
- The costs on SME financing assessed in this evaluation, which appear limited and transitory, should be weighed against the wider benefits of enhanced resilience from the reforms, in terms of reducing the likelihood and severity (lost output) of financial crises.

Effects of G20 financial reforms on SME financing **Graph 15**

SME lending growth has resumed in recent years after falling during the crisis for a number of jurisdictions



More stringent risk-based capital requirements temporarily tightened SME lending conditions at the most "affected" banks



Left graph: Data cover Australia (AU, 2006-17), Argentina (AR, 2000-17), Brazil (BR, 2003-17), China, (CN, 2010-17), Germany (DE, 2000-15), Italy (IT, 2000-17), Japan (JP, 2007-17), Russia (RU, 2008-17), and the United States (US, 2000-17).

Right graph: Each dot in the graph represents the transitory change in SME lending for different countries using data from the credit registry. ***, ** and * denote the significance levels of 1%, 5% and 10%, respectively.

Source: FSB Evaluation of the effects of financial regulatory reforms on small and medium-sized enterprise (SME) financing: Consultation report (June 2019).

3. Looking ahead

The overall trends on resilience have been favourable so far, but vigilance is needed to effectively address shifting risks in the global financial system.

- The financial system keeps evolving, with implications for the provision of financial services and the G20 objective of promoting strong, sustainable and balanced growth.
- Assessing vulnerabilities in the global financial system is at the core of the FSB's mandate. The FSB is developing a new surveillance framework to support the comprehensive, methodical, and disciplined assessment of vulnerabilities.
- This section documents the work underway to assess vulnerabilities in response to changes in the financial system and sets out the benefits of cross-border cooperation.

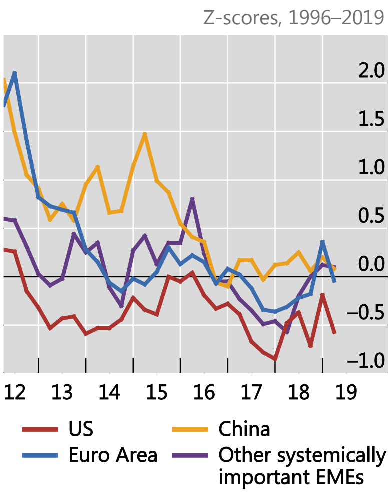
3.1 Promoting a resilient financial system

After a decade of very low interest rates, financial institutions and markets may not be sufficiently prepared for economic and financial risks from adverse market developments (Graph 16).

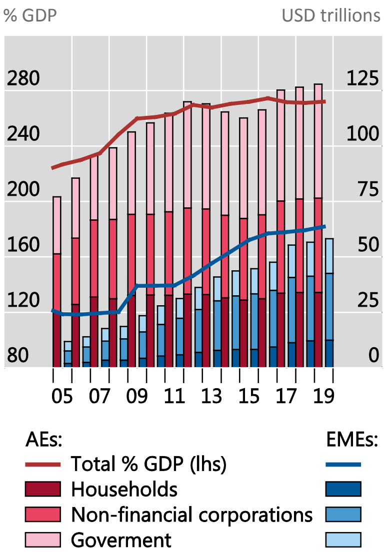
- Financial conditions remain relatively easy and have supported elevated asset prices. The outlook for global growth has weakened and become more uncertain as market expectations have shifted to a prolonged low interest rate environment in AEs. The financial system is susceptible to sudden shifts in market sentiment and tightening in response to a range of economic, financial and geopolitical shocks.

Financial conditions, debt accumulation and term spread compression **Graph 16**

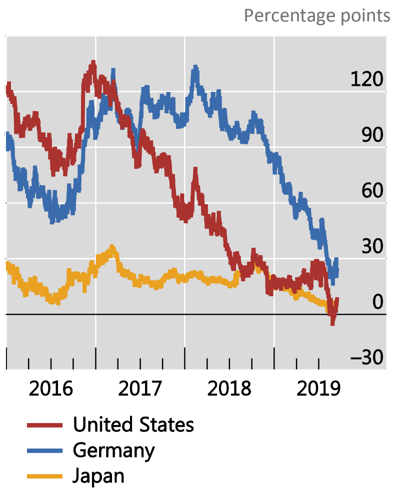
Financial conditions remain relatively easy...



... supporting growth in non-financial sector debt, especially in EMDEs



There has been a compression in the term spread in major AEs recently



Left panel: Global financial conditions indices. The z-score indicates an observation's distance from the population mean in units of standard deviation. Source: IMF Global Financial Stability Report (April 2019).

Middle panel: Total debt of the non-financial sector. Source: IIF Global Debt Monitor.

Right panel: Difference between 10-year and two-year government bond yields. Source: Bloomberg.

- High sovereign, corporate and household debt levels in many parts of the world could weigh on the financial system if these shifts occur. A rise in risk aversion, for example, could trigger sharp increases in risk premia and swings in cross-border capital flows, spilling over to local equity, debt and foreign exchange markets.
- Financial institutions are also exposed to riskier credit instruments, including leveraged loans, directly and in securitised form through CLOs. CLO structures appear to be more robust than before the crisis since higher subordination and thicker equity tranches are required for the same rating. However, leveraged loan credit quality has deteriorated and underwriting standards have loosened recently. The FSB is closely monitoring these markets and collecting information on the pattern of exposures to these assets globally.

The FSB continues to monitor the growth and risks in non-bank financial intermediation.

- Vulnerability assessments need to consider the continued shift of financial intermediation to non-banks, which now account for almost half of global financial assets (see section 2.2).
- The shift toward non-bank financing in several AEs and EMDEs since the crisis represents a welcome increase in diversity of the sources of finance supporting economic activity and is therefore in line with the G20 reform objectives, provided that such financing is resilient.
- To this end, the FSB has been monitoring these changes and assessing whether the existing set of policy tools is sufficient to address the resulting potential vulnerabilities.

The analysis focuses on the potential implications of changes in market structure on market liquidity conditions under stress.

- Previous analyses suggested that some reduction of liquidity in normal times from pre-crisis levels, owing to a better recognition of the costs involved in providing liquidity services, is an expected outcome of reforms that strengthen financial stability.
- One implication of the change in market structure for less liquid securities markets could be that large orders are more difficult to execute under stressed market conditions. Episodes of flash events (i.e. intraday volatility associated with short-term illiquidity) in markets that tend to be more liquid took place in recent years without damage to financial stability.[48]
- Markets continued to function reasonably well through the turbulence of late 2018 and during the tick-up in risk premia in May 2019. Large-scale outflows from funds managed by two managers in June 2019 did not have systemic implications. However, there remain potential vulnerabilities in stressed conditions if open-ended funds that offer short-term redemptions while holding concentrated positions in less liquid assets are collectively of a significant size, do not effectively manage their liquidity risk, and experience significantly elevated investor redemptions. Liquidity risk management at investment funds has been a constant focus of both the FSB and IOSCO over the past years. Effective implementation of the adopted recommendations is essential to addressing financial stability risks. Continued vigilance is needed as the low interest rate environment impacts profitability and fosters a search for yield among investors.
- The FSB has continued to evaluate the impact of portfolio rebalancing behaviour of asset managers (especially investment funds' liquidity management) under different scenarios and potential implications for financial stability.

[48] Bond mutual funds have managed significant outflows in the past (e.g. during previous episodes of monetary policy tightening) and have generally not disrupted financial markets. Yet, past episodes of large redemptions have occurred at times when fund holdings were much smaller, in absolute terms and relative to trading volumes and dealer inventories.

3.2 Implications of changes in digitalisation of finance

Technological innovation in the financial sector has the potential to significantly change the functioning of the global financial system, with a number of possible benefits and risks.

- The digitalisation of finance offers potentially large benefits in terms of efficiency and inclusiveness. However, rapid progress can also present challenges and create risks.
- The FSB and other international organisations have been monitoring digitalisation trends, with the objective of harnessing the benefits while mitigating risks. This work has resulted in a better understanding of the implications of these trends and allows for an ongoing dialogue between public, private and academic stakeholders.

Many of these new technologies could decentralise the provision of financial services.[49]

- There are already examples emerging of decentralisation in payments and settlement, capital markets, trade finance and lending.
- A reduction of intermediaries and centralised processes traditionally involved in the provision of financial services could benefit financial stability in some ways, and may also lead to greater competition and diversity in the system. At the same time, the growing use of such technologies could entail various financial risks that need to be managed, such as the emergence of concentrations in the ownership and operation of key infrastructure and technology, as well as issues of legal liability, consumer protection and resolution.
- Regulators may wish to engage in further dialogue with a wider group of stakeholders, including in the technology sector, with whom they have had limited interaction to date.

One specific application of decentralised technology that is already creating opportunities, and raising challenges, is crypto-assets.[50]

- SSBs and international organisations are working on issues relating to investor protection, market integrity, anti-money laundering and countering the financing of terrorism, and understanding bank exposures to crypto-assets and potential risks to financial stability.
- Assessing the significance of potential gaps is challenging, given the rapidly evolving nature of the crypto-asset ecosystem and related risks. Though crypto-assets do not currently pose a risk to global financial stability, gaps may occur where crypto-assets fall outside the scope of regulators' authority or from the absence of international standards.
- A wider use of new types of crypto-assets, such as global stablecoins for retail payment purposes, warrants close scrutiny by authorities to ensure that that they are subject to high standards of regulation. The FSB and SSBs are assessing the risks very closely and in a coordinated fashion, and will consider additional multilateral responses as needed.

New entrants in the financial system, such as FinTech firms and large technology companies (BigTech), could also materially alter the universe of financial services providers.[51]

- To date, the relationship between incumbent financial institutions and FinTech firms appears to be largely complementary and cooperative in nature. FinTech credit is growing rapidly, but is still small as a proportion of overall credit in most jurisdictions (graph 17).[52]

---

49 See the FSB's Decentralised financial technologies: Report on financial stability, regulatory and governance implications (June 2019).

50 See the FSB's Crypto-assets regulators directory (April 2019) and the report on Crypto-assets: Work underway, regulatory approaches and potential gaps (May 2019).

51 See the FSB's report on FinTech and market structure in financial services: Market developments and potential financial stability implications (February 2019).

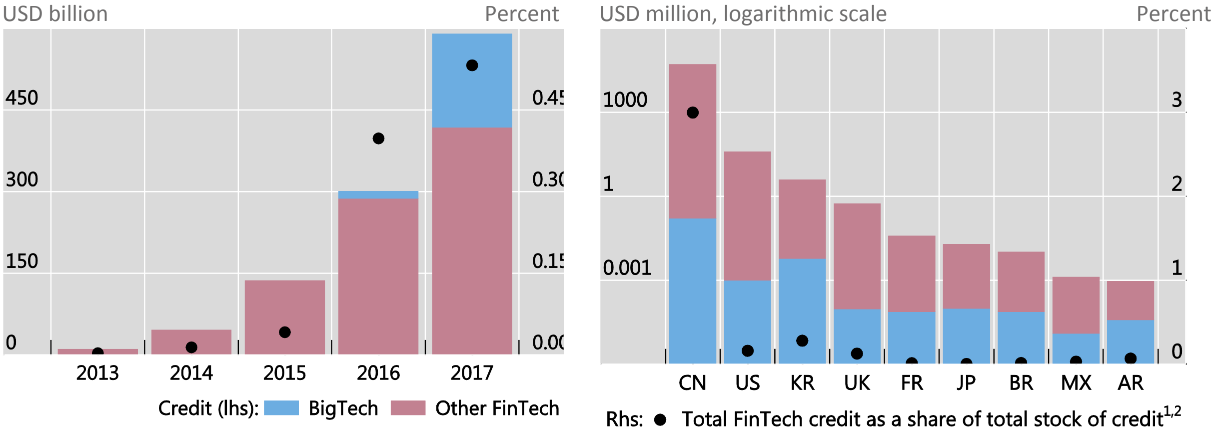
52 See chapter III of the BIS Annual Report 2018 and BigTech and the changing structure of financial intermediation by Frost et al (BIS working paper No 779, March 2019).

- The competitive impact of BigTech may be greater than that of FinTech firms, given their typically large, established customer networks as well as name recognition and trust. Combined with strong financial positions and access to low-cost capital, BigTech firms could achieve scale very quickly in financial services.
- Reliance by financial institutions on third-party data service providers (e.g. data provision, cloud storage and analytics, and physical connectivity) for core operations is estimated to be low at present, but is projected to increase and warrants attention by authorities.[53]

FinTech credit is small but growing fast **Graph 17**

FinTech credit (including credit extened by BigTech firms) is growing rapidly from a small base[1,2]

FinTech credit is largest in China, the US and the UK, and is a moderate share of total credit in a few other countries



The bars indicate annual global lending flows by BigTech and other FinTech firms over 2013-2017. Figure includes estimates.
[1] Total FinTech credit is defined as the sum of the flow of BigTech and other FinTech credit. This is then divided by the stock of total credit to the private non-financial sector. [2] Calculated for countries for which data were available for 2013–2017.
Source: Cambridge Centre for Alternative Finance and research partners; Frost et al. (2019).

The FSB also continues to work on enhancing the cyber resilience of financial institutions.

- Complementing earlier work to promote common understanding through a Cyber Lexicon, the FSB is now developing a toolkit of effective practices to assist financial institutions, supervisors, and other relevant authorities before, during, and after a cyber incident.

3.3 Reinforcing global regulatory cooperation[54]

An open and integrated global financial system has major economic benefits.

- The financial crisis showed how interconnected the global financial system is. G20 reforms promote a global financial system that is open, integrated and resilient against shocks.
- Such a system contributes to the efficient allocation of global savings across countries, and supports international trade and investment through financial deepening, risk sharing and diversification across institutions and markets, with positive effects on growth.

---

[53] See the BCBS Sound Practices: implications of fintech developments for banks and bank supervisors (February 2018).

[54] See the FSB Report on Market Fragmentation (June 2019) and the IOSCO report on Market Fragmentation & Cross-border Regulation (June 2019).

Significant cooperation between jurisdictions has allowed for the design of new financial regulatory frameworks to fix the fault lines revealed by the crisis.

- Authorities worked together in developing the G20 reforms, recognising the benefits of international standards in restoring confidence in the financial system and providing the basis for a resumption of cross-border financial activity in the aftermath of the crisis.
- Regulatory and supervisory cooperation is necessary for the full, timely and consistent implementation of international standards, and for promoting a level playing field and reducing opportunities for regulatory arbitrage. It also helps reduce inefficiencies and frictions that constrain the risk-sharing capacity of global markets and increase costs of doing business.
- Maintaining this level of cooperation is critical as memories of the crisis fade, as implementation fatigue sets in, and as member authorities' focus shifts to other areas.

Notwithstanding the progress made to date, there are concerns that some markets may be fragmented along jurisdictional lines...

- Market fragmentation can arise for various reasons, including differences in national financial regulations and supervisory practices. This, along with differences in the substance and timing of implementation of international standards, may disincentivise or prevent market participants from undertaking certain cross-border activities.
- Some types of market fragmentation might be a by-product of measures to improve domestic resilience and in places can have a positive effect on financial stability. However, other types may reduce the resilience of both global and domestic financial systems by limiting opportunities for cross-border diversification and risk management, impairing market liquidity or preventing movements of capital and liquidity in periods of stress.
- Examples of activities where supervisory and regulatory policies may give rise to market fragmentation in a manner that impacts financial stability and market efficiency are the trading and clearing of OTC derivatives across borders; banks' cross-border management of capital and liquidity; and the sharing of data and other information internationally.

At the request of the 2019 Japanese G20 Presidency, the FSB and SSBs are exploring issues around market fragmentation and considering tools to address them where appropriate...

- These approaches include the more systematic consideration of possible fragmentary effects as international standards are being developed and during their implementation by national authorities. They could also involve greater cross-border communication and information sharing among authorities, including via existing fora such as supervisory colleges and CMGs, and the alignment of data collection.
- Such approaches and mechanisms are not designed to re-open international standards, change institutional responsibilities and setups or add unduly to administrative burdens.

... and are following up on areas of work further to address market fragmentation by promoting approaches to deepen cross-border cooperation and helping to build trust.

- These include: exploring ways to, where justified, enhance the clarity of deference and recognition processes in derivatives markets; strengthening the understanding of approaches by authorities towards pre-positioning of bank capital and liquidity and of its consequences ; considering ways to enhance supervisory communication and information sharing; and considering any evidence of market fragmentation with observed consequences for financial stability as part of the FSB's evaluation of TBTF reforms. The FSB will reinforce its role as a forum for the forward-looking discussion of regulatory and supervisory initiatives with cross-border relevance.

Annex 1: Monitoring and evaluations forward planner

Reform area	Body	Monitoring and evaluation activity	Expected publication date
Building resilient financial institutions	FSB	• Country peer review of the UK (compensation practices)	• 2020H2
	BCBS	• **Evaluations of Basel III reforms** • Progress report on adoption of Basel regulatory framework (semi-annual) • RCAP post-assessment follow-up reports (annual) • Jurisdictional RCAP assessments of NSFR and large exposures standards • Basel III monitoring report (semi-annual)	• **Ongoing** • 2019Q4 • 2020H1 • 2019-2021 • 2019Q4
Ending too-big-to-fail	FSB	• **Evaluation of the effects of too-big-to-fail reforms** • Resolution progress report • Country peer review of South Africa (resolution regime and deposit insurance)	• **2020Q4** • 2020Q4 • 2020Q1
	BCBS	• **Evaluation of the G-SIB framework** • Implementation of BCBS principles for effective risk data aggregation and risk reporting	• **2021H1** • 2020H1
	IAIS	• Baseline assessment of implementation of the supervisory material from the Holistic Framework for identifying and mitigating systemic risk.	• 2020H2
Enhancing resilience of non-bank financial intermediation	FSB	• Global Monitoring Report on NBFI • Thematic peer review on NBFI	• 2019Q4 • 2021Q1
	IOSCO	• Level 2 peer review report on money market funds • Level 2 peer review on securitisation • Assessment of the consistency and effectiveness of IOSCO recommendations on liquidity risk management with regard to asset management	• 2020Q3 • 2021Q1 • 2021
Making derivatives markets safer	FSB	• Progress report on OTC derivatives market reforms • Country peer review of Mexico (OTC derivatives) • Country peer review of Indonesia (OTC derivatives)	• 2020Q4 • 2020Q1 • 2020H2
	CPMI-IOSCO	• Implementation monitoring of the Principles for Financial Market Infrastructures (PFMI) – level 1 – update through on-line tracker • PFMI – level 2 assessment reports (Brazil, Turkey, EU) • PFMI – level 3 assessment reports (topic and FMIs to be assessed)	• Ongoing • 2019-2020 • Ongoing
Other reform areas	FSB	• **Evaluation of the effects of reforms on SME financing** • Country peer review of Germany (macroprudential policy framework) • Country peer reviews of China, the Netherlands, Saudi Arabia and Spain (TBD) • Implementation Monitoring Network survey on progress in other reform areas • Progress report on implementation of the recommendations in the second phase of the Data Gaps Initiative (by the staff of the IMF and FSB Secretariat)	• **2019Q4** • 2020H2 • 2021H1 • 2020Q4 • 2020Q4
	IOSCO	• Thematic review on business continuity plans	• 2020H1
	IAIS	• Thematic peer review on Insurance Core Principles 1 and 2 • Thematic peer review on Insurance Core Principles 4, 5, 7, 8	• 2019Q4 • 2020Q1

Note: Some monitoring activities are ongoing and will be completed in 2019-20. Evaluation activities are shown in bold.

Annex 2: Sources of information

Basel III

- Seventeenth progress report on adoption of the Basel regulatory framework, October 2019 (BCBS)
- Basel III Monitoring Report, October 2019 (BCBS)
- Basel III: Finalising post-crisis reforms, December 2017 (BCBS)
- RCAP jurisdiction-level assessments of final Basel III regulations (BCBS)
- RCAP assessments of the consistency of regulatory outcomes (BCBS)

Compensation practices

- Implementing the FSB Principles for Sound Compensation Practices and their Implementation Standards: Sixth progress report, June 2019 (FSB)

TBTF

- Eighth Report on the implementation of resolution reforms: "Mind the gap", forthcoming (FSB)
- Review of the Technical Implementation of the Total Loss-Absorbing Capacity (TLAC) Standard, July 2019 (FSB)
- Thematic peer review on bank resolution planning, April 2019 (FSB)
- FSB welcomes IAIS proposed insurance systemic risk framework and decides not to engage in an identification of G-SIIs in 2018, November 2018 (FSB)
- Progress in adopting the Principles for effective risk data aggregation and risk reporting, June 2018 (BCBS)
- Progress report on the implementation of principles for effective supervisory colleges, December 2017 (BCBS)
- Guidance on Central Counterparty Resolution and Resolution Planning, July 2017 (FSB)
- Key Attributes of Effective Resolution Regimes for Financial Institutions, October 2014 (FSB)

Non-bank financial intermediation

- Update to the IOSCO Peer Review of Regulation of Money Market Funds, October 2019 (IOSCO)
- Update to the IOSCO Peer Review of Implementation of Incentive Alignment Recommendations for Securitisation, October 2019 (IOSCO)
- FSB adjusts implementation timelines for its policy recommendations to address financial stability risks in securities financing transactions, July 2019 (FSB)
- Global Monitoring Report on Non-Bank Financial Intermediation 2018, February 2019 (FSB)
- Leverage – Consultation Paper, November 2018 (IOSCO)
- Recommendations for Liquidity Risk Management for Collective Investment Schemes, February 2018 (IOSCO)
- Guidelines on Identification and management of step-in risk, October 2017 (BCBS)
- Assessment of shadow banking activities, risks and the adequacy of post-crisis policy tools to address financial stability concerns, July 2017 (FSB)

- Thematic Review on the Implementation of the FSB Policy Framework for Shadow Banking Entities, May 2016 (FSB)

OTC derivatives

- OTC Derivatives Markets Reforms: 2019 Progress Report on Implementation, October 2019 (FSB)
- Governance arrangements for the UPI: Conclusions, implementation plan and next steps to establish the International Governance Body, October 2019 (FSB)
- Governance Arrangements for critical OTC derivatives data elements (other than UTI and UPI), October 2019 (CPMI-IOSCO)
- Margin requirements for non-centrally cleared derivatives, July 2019 (BCBS-IOSCO)
- Trade reporting legal barriers: Follow-up of 2015 peer review recommendations, November 2018 (FSB)
- Harmonisation of critical OTC derivatives data elements (other than UTI and UPI) - Technical guidance, April 2018 (CPMI-IOSCO)
- Governance arrangements for the unique transaction identifier (UTI): Conclusions and implementation plan, December 2017 (FSB)
- Harmonisation of the Unique Product Identifier – Technical Guidance, September 2017 (CPMI-IOSCO)
- Review of OTC derivatives markets reforms: Effectiveness and broader effects of reforms, June 2017 (FSB)
- Harmonisation of critical OTC derivatives data elements (other than UTI and UPI) - technical guidance, April 2018 (CPMI-IOSCO)
- Harmonisation of the Unique Transaction Identifier – Technical Guidance, February 2017, (CPMI-IOSCO)
- Implementation monitoring of the Principles for Financial Market Infrastructures (CPMI-IOSCO)

Other reform areas

- G20 Data Gaps Initiative (DGI-2): The Fourth Progress Report – Countdown to 2021, October 2019 (FSB, IMF)
- Reforming major interest rate benchmarks: Progress report, November 2018 (FSB)
- Thematic review on implementation of the Legal Entity Identifier, May 2019 (FSB)
- Country peer reviews (FSB)
- FSB jurisdictions' responses to the Implementation Monitoring Network survey (FSB)

Adherence to international financial standards

- Initiative on international cooperation and information exchange (FSB)
- Multilateral Memorandum of Understanding Concerning Consultation and Cooperation and the Exchange of Information (IOSCO)
- Multilateral Memorandum of Understanding (IAIS)

Evaluation reports

- Evaluation of the effects of financial regulatory reforms on small and medium-sized enterprise (SME) financing: Consultation report, June 2019 (FSB)

Annex 3: Abbreviations

AEs	Advanced economies
AI	Artificial intelligence
AUM	Assets under management
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CCPs	Central counterparties
CET1	Common Equity Tier 1
CGFS	Committee on the Global Financial System
CMGs	Crisis management groups
CoAgs	Cross-border cooperation agreements
CPMI	Committee on Payments and Market Infrastructures
DAR	Detailed assessment of observance of financial sector standards and codes
DGI	Data Gaps Initiative
D-SIBs	Domestic systemically important banks
ECB	European Central Bank
EMDEs	Emerging Market and Developing Economies
EU	European Union
FinTech	Financial Technology
FMI	Financial market infrastructure
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSSA	Financial Sector Stability Assessment
GDP	Gross domestic product
G-SIBs	Global systemically important banks
G-SIIs	Global systemically important insurers
G-SIFIs	Global systemically important financial institutions
HQLA	High Quality Liquid Assets (Basel III)
IAIS	International Association of Insurance Supervisors
IASB	International Accounting Standards Board
ICS	International Capital Standard (IAIS)
IFIAR	International Forum of Independent Audit Regulators
IFRS	International Financial Reporting Standard
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
LCR	Liquidity Coverage Ratio (Basel III)
LEI	Legal Entity Identifier
LIBOR	London Interbank Offered Rate
MMFs	Money market funds
NAV	Net asset value
NBFI	Non-bank financial intermediation
NBNI	Non-bank non-insurer (G-SIFI)
NCCDs	Non-centrally cleared derivatives
NSFR	Net Stable Funding Ratio (Basel III)
OTC	Over-the-counter (derivatives)
PFMI	Principles for Financial Market Infrastructures (CPMI-IOSCO)
RCAP	Regulatory Consistency Assessment Programme (BCBS)

RWAs	Risk-weighted assets
SFTs	Securities financing transactions
SIBs	Systemically important banks
SIFIs	Systemically important financial institutions
SMEs	Small and medium-sized enterprises
SSBs	Standard-setting bodies
TBTF	Too-big-to-fail
TLAC	Total Loss-Absorbing Capacity (FSB)
TRs	Trade repositories
UPI	Unique Product Identifier
UTI	Unique Transaction Identifier