

Implementation and effects of the G20 financial regulatory reforms

Report of the Financial Stability Board to G20 Leaders

9 November 2015

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Executive Summary

This is the first annual report to the G20 on the implementation and effects of the financial regulatory reforms. The objectives of the report are to:

- describe progress in implementing the reforms;
- present early analysis on the overall effects of reforms; and
- highlight key areas that merit senior-level attention.

The financial reform agenda aims to increase the resilience of the global financial system while preserving its open and integrated structure (Section 2). Eight years after the onset of the financial crisis, the global economy is still recovering from the tremendous budgetary costs and losses in output and employment. A key goal of the reforms is to reduce the likelihood and severity of future crises. *Ex ante* impact assessments carried out on key reforms indicate that their economic costs should be modest and clearly outweighed by the benefits. The full, timely and consistent implementation of the G20 financial regulatory reform programme will support strong, sustainable and balanced growth.

Implementation progress has been steady but uneven (colour-coded table and Section 3):

- ***Building resilient financial institutions*** – Implementation of Basel III capital and liquidity standards has generally been timely and consistent with the Basel framework in most jurisdictions. Banks remain on track to meet these standards. Regulatory frameworks for compensation have been adopted in almost all countries.
- ***Ending too-big-to-fail*** – Implementation of the policy framework – which consists of higher loss absorbency, more intensive supervision and key attributes of effective resolution – has advanced the most for global systemically important banks (G-SIBs). However, substantial work remains in implementing effective resolution regimes.
- ***Making derivatives markets safer*** – Implementation of over-the-counter (OTC) derivatives reforms is well underway, although it continues to be uneven and behind schedule. Progress is most advanced in the largest derivatives markets. Trade repositories (TRs) and central counterparties are increasingly used.
- ***Transforming shadow banking into resilient market-based finance*** – A number of policies were relatively recently finalised in this area (e.g. money market funds, risk alignment of securitisation), so implementation is generally at an early stage.

The FSB, in collaboration with the standard-setting bodies (SSBs), has begun a process to evaluate the effects of the reforms (Section 4).

- ***The evaluation of effects in this report is tentative and will continue to be updated and augmented.*** It is empirically difficult to isolate the effects from other post-crisis factors. The effectiveness of reforms can only be fully assessed over a period of time that includes a full financial cycle and both normal and stressed market conditions.
- ***The most tangible effect of the reforms has been to make the banking sector more resilient.*** Banks have built larger and better quality capital buffers, lengthened the maturity of their funding, and begun to reduce excessive levels of leverage. The reforms, alongside increased risk awareness and lower risk appetite by market

participants, have contributed to a fundamental re-appraisal of the risks associated with many types of products and activities.

- ***This improved resilience has been achieved while maintaining the overall provision of credit to the real economy.*** The extended phase-in period of the reforms coupled with exceptionally accommodative monetary policies and jurisdiction-specific circumstances have contributed to this outcome. Most banks have built up their capital buffers by retaining earnings and issuing equity rather than by cutting back sharply on lending. The volume of financing has recovered at a different pace across regions, while the cost of financing, whether from banks or bond markets, has remained low.

The FSB has identified key areas that merit ongoing attention (Section 5):

- ***Implementing reforms in emerging market and developing economies (EMDEs)*** – No major unintended consequences have been identified to date from the implementation of reforms in EMDEs. However, some EMDEs face challenges in implementing the reforms or are affected by spill-overs from implementation in home jurisdictions of global financial institutions. The FSB, working with SSBs and international financial institutions (IFIs), will continue to monitor the effects on EMDEs and assist them in implementation.
- ***Ensuring effective use of resources for implementation*** – As reforms come online, there are heavy demands on a limited pool of official sector resources, leading to skill shortages in certain key reform areas. The FSB will work with its members (including SSBs and IFIs) to enhance coordination of monitoring efforts and share experiences to facilitate more effective use of limited resources.
- ***Maintaining an open and integrated global financial system*** – Past financial crises have frequently led to a retrenchment in international financial activity. While it is still too early to determine the full impact of reforms, the post-crisis evidence suggests that they have helped to avoid significant retrenchment and fragmentation. The FSB and SSBs are working to maintain an open system by deepening cross-border cooperation.
- ***Market liquidity*** – There have been some concerns that the depth of liquidity in fixed income markets has declined in recent years. However, evidence of this is mixed, and the unsustainable excess liquidity that existed prior to the crisis should not be used as a baseline for comparison. The FSB is analysing the causes and financial stability consequences of any shifts in market liquidity.

G20 Leaders' support is needed to overcome implementation challenges involving legal powers and resources. This includes:

- removing legal barriers to the reporting of OTC derivatives to TRs and having legal frameworks in place to permit authorities' access to TR-held data;
- promoting cooperation to address duplicative or overlapping requirements to cross-border OTC derivatives transactions;
- putting in place legal powers to share information across borders and to be able to give prompt effect to foreign resolution actions; and
- ensuring that national authorities are adequately resourced for full and timely implementation of reforms as well as for supporting their effective monitoring.

Implementation of reforms in priority areas by FSB jurisdictions (as of 31 October 2015)

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' monitoring mechanisms. The colours and symbols in the table indicate the timeliness of implementation, while the letters indicate the extent to which implementation is consistent with the international standard (Basel III) or its effectiveness is hampered by identified obstacles (trade reporting).

Reform Area	Basel III				Compen- sation	Over-the-counter (OTC) derivatives				Resolution#			Shadow banking	
	Risk-based capital	Liquidity coverage ratio (LCR)	Higher loss absorbency for G-SIBs (home jurisdictions)	Requirements for domestic systemically important banks (D-SIBs)		Trade reporting	Central clearing	Platform trading	Margin	Availability of transfer / bail-in / temporary stay powers for banks	Recovery planning for systemic banks	Resolution planning for systemic banks	Money market funds (MMFs)	Securitisation
<i>Agreed phase-in (completed) date</i>	<i>2013 (2019)</i>	<i>2015 (2019)</i>	<i>2016 (2019)</i>	<i>2016</i>		<i>end-2012</i>	<i>end-2012</i>	<i>end-2012</i>	<i>Sep 2016 (2019)</i>					
Argentina	Δ				Δ								**	**
Australia	C												*	*
Brazil	C			&	Δ								**	**
Canada	C					D, F							**	
China	C	Δ			Δ	R, D, F				Δ			**	
France	MNC	Δ											**	*
Germany	MNC	Δ											**	*
Hong Kong	C	C											**	
India	C	LC			Δ	D, F								
Indonesia	Δ					R							**	
Italy	MNC	Δ									Δ			*
Japan	C					D								
Mexico	C	C				D							**	*
Netherlands	MNC	Δ											**	*
Rep. of Korea						D							**	
Russia	Δ				Δ								**	**
Saudi Arabia	C	LC				R, D							*	
Singapore	C	Δ											**	
South Africa	C	C			Δ	D, F							**	
Spain	MNC	Δ												*
Switzerland	C				Δ						Δ	Δ	**	
Turkey		Δ				D, F							**	
United Kingdom	MNC	Δ											**	*
United States	LC	Δ			Δ	D								

Legend

	<ul style="list-style-type: none"> • Basel III: Final rule published or in force. • OTC derivatives: Legislative framework and standards/criteria/requirements (as applicable) in force for over 90% of relevant transactions. • Resolution: Element of resolution regime in the FSB <i>Key Attributes of Effective Resolution Regimes</i> that is implemented / in place. For the powers column, all three of the bank resolution powers (transfer, bail-in and temporary stay) are available. • Compensation: All FSB <i>Principles and Standards for Sound Compensation Practices</i> implemented. • Shadow banking: 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 implementing an incentive alignment regime and disclosing requirements.
△	<ul style="list-style-type: none"> • Basel III: Final rule in force, but certain elements (e.g. Basel II or 2.5 provisions, LCR disclosure rules) are not yet finalised. • Compensation: All except a few (3 or less) FSB <i>Principles and Standards for Sound Compensation Practices</i> implemented. • Resolution: Jurisdiction requires recovery or resolution planning for all domestically incorporated banks that could be systemically significant in failure, but applies them only for G-SIB(s) at present.
	<ul style="list-style-type: none"> • Basel III: Draft regulation published. • OTC derivatives: Regulatory framework being implemented. • Resolution: Element of resolution regime in the FSB <i>Key Attributes of Effective Resolution Regimes</i> that is partially implemented / in place. For the powers column, one or two of the bank resolution powers (transfer, bail-in and temporary stay) are available. • Compensation: FSB <i>Principles and Standards for Sound Compensation Practices</i> partly implemented (more than 3 <i>Principles</i> and/or <i>Standards</i> have not yet been implemented) • Shadow banking: 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.
	<ul style="list-style-type: none"> • Basel III: Draft regulation not published (light red colour indicates deadline for reform not lapsed). • OTC derivatives: No regulatory framework in place (dark red colour indicates that deadline for reform has lapsed). • Resolution: Element of resolution regime in the FSB <i>Key Attributes of Effective Resolution Regimes</i> that is not implemented / in place. For the powers column, none of the three bank resolution powers (transfer, bail-in and temporary stay) are available. • Shadow banking: 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. • Basel III: Requirements reported as non-applicable.

Notes

C / LC / MNC / NC	<ul style="list-style-type: none"> • 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. For the RCAP compliance scale, see http://www.bis.org/publ/bcbs264.pdf.
R / D / F	<ul style="list-style-type: none"> • OTC derivatives: Existence of legal barriers to domestic participants’ reporting to trade repositories (TRs) for which cure or mitigant is not available (R); access to domestic TR data by domestic authorities other than the primary authority is not permitted, or is permitted with material conditions (D); neither direct nor indirect access to domestic TR data by foreign authorities is permitted, or is permitted only with material conditions (F). See the OTC derivatives trade reporting review report.
&	<ul style="list-style-type: none"> • Basel III: The updated status of D-SIB implementation for Brazil is based on self-reporting since the October 2015 Basel Committee progress report, and will be reviewed in the next Committee update.
#	<ul style="list-style-type: none"> • Resolution: The table assumes that all FSB jurisdictions that are EU Member States have already implemented the provisions of the BRRD and (as appropriate) of the Single Resolution Mechanism.
*	<ul style="list-style-type: none"> • Shadow banking: Implementation is more advanced than the overall rating in one or more elements of at least one reform area (MMFs), or in one or more sectors of the market (securitisation).
**	<ul style="list-style-type: none"> • Shadow banking: Implementation is more advanced than the overall rating in all elements of at least one reform area (MMFs), or in all sectors of the market of at least one reform area (securitisation).

1. Introduction

This is the first annual report to the G20 on the implementation and effects of reforms.

- The purpose of the report is to highlight ongoing progress in fixing the fault lines that led to the global financial crisis and in building a safer, more resilient financial system.
- Over time, these annual reports will enable the G20 to assess whether the financial reforms are achieving their intended results in an effective manner consistent with its objectives for financial stability and growth.

The report is structured in four main parts:

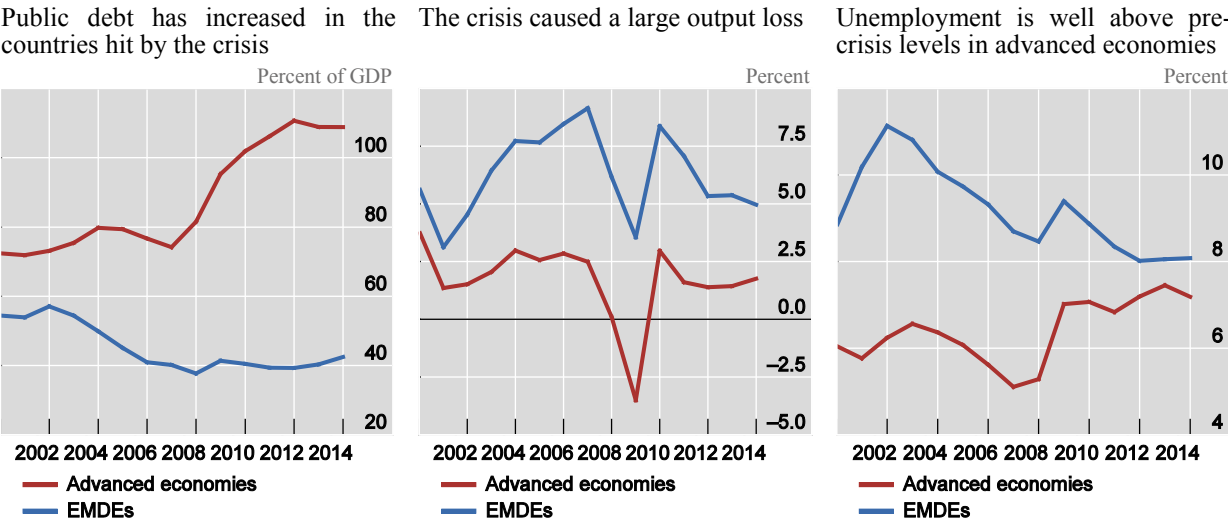
- Section 2 provides a reminder of the costs of the crisis and describes the key reforms.
- Section 3 provides an overview of implementation progress for individual reform areas.
- Section 4 provides a high-level preliminary perspective on the evolution of the global financial system and the effects of reforms in recent years.
- Section 5 highlights areas that merit ongoing attention in terms of implementation challenges and possible interaction and effects of reforms.
- Annexes 1-3 provide supplementary information on particular reform areas, future monitoring work by the FSB and SSBs, and the documents used to prepare this report.

2. The need for financial reforms

The financial crisis imposed tremendous costs on the global economy.

- These costs include much higher public debt, increased unemployment and substantial output losses, particularly for advanced economies. The global economy is still recovering from the effects of the crisis.

The costs of the recent global financial crisis have been substantial Graph 1



Left panel: Public debt to gross domestic product (GDP) ratio for FSB jurisdictions, weighted by nominal GDP. Middle panel: Real GDP growth rates for FSB jurisdictions, weighted by nominal GDP. Right panel: Simple average of unemployment rates for FSB jurisdictions. Source: IMF, [World Economic Outlook Database](#), April 2015.

The G20 launched a comprehensive programme of international financial reforms to increase the resilience of the global financial system, while preserving its open and integrated structure. The FSB was established in 2009 to coordinate this work, which has four core elements:

- **Making financial institutions more resilient** through higher buffers, lower leverage, improved risk management and governance, and sound compensation practices;
- **Ending “too-big-to-fail” (TBTF)** by adopting requirements for higher loss absorbency of global systemically important financial institutions (G-SIFIs), by subjecting those institutions to more intensive supervision, and by establishing legal regimes and regulatory frameworks that allow their resolution in the event of failure without taxpayer support or wider economic disruption;
- **Making derivatives markets safer** through the reporting of all over-the-counter (OTC) derivatives to trade repositories (TRs), clearing of all standardised contracts through central counterparties (CCPs) and trading of those contracts (where appropriate) on exchanges or electronic platforms, and subjecting non-centrally cleared contracts to higher capital and minimum margining requirements; and
- **Transforming shadow banking** into resilient market-based finance through strengthening oversight and regulation of the shadow banking system.¹

The reforms also cover a number of other areas, reflecting the lessons from the crisis.

- These include developing macroprudential policy frameworks and tools; strengthening the oversight, regulation and supervision of financial institutions, markets and infrastructure; improving accounting, auditing and disclosures; promoting adherence to international standards; and enhancing arrangements for international policy coordination.

The reform programme is helping to rebuild confidence and improve the system’s ability to manage risks and intermediate financial flows.

- By reducing the likelihood and severity of financial crises, the reforms aim to reduce the public costs and losses in output and employment associated with such crises.
- *Ex ante* impact assessments on the main reforms indicate that the attendant costs should be modest and clearly outweighed by the benefits (Annex 1, Box 1).
- The full, timely and consistent implementation of the G20 financial regulatory reform programme therefore aims to support strong, sustainable and balanced growth.

¹ Shadow banking is defined as “credit intermediation involving entities and activities (fully or partly) outside the regular banking system.” Some authorities or market participants prefer to use other terms such as “market-based financing” instead of “shadow banking”. The use of the term “shadow banking” is not intended to cast a pejorative tone on this system of credit intermediation. However, the FSB is using the term “shadow banking” as this is the most commonly employed and, in particular, has been used in the earlier G20 communications.

3. Implementation status

3.1 Building resilient financial institutions

Implementation of Basel III has generally been timely.

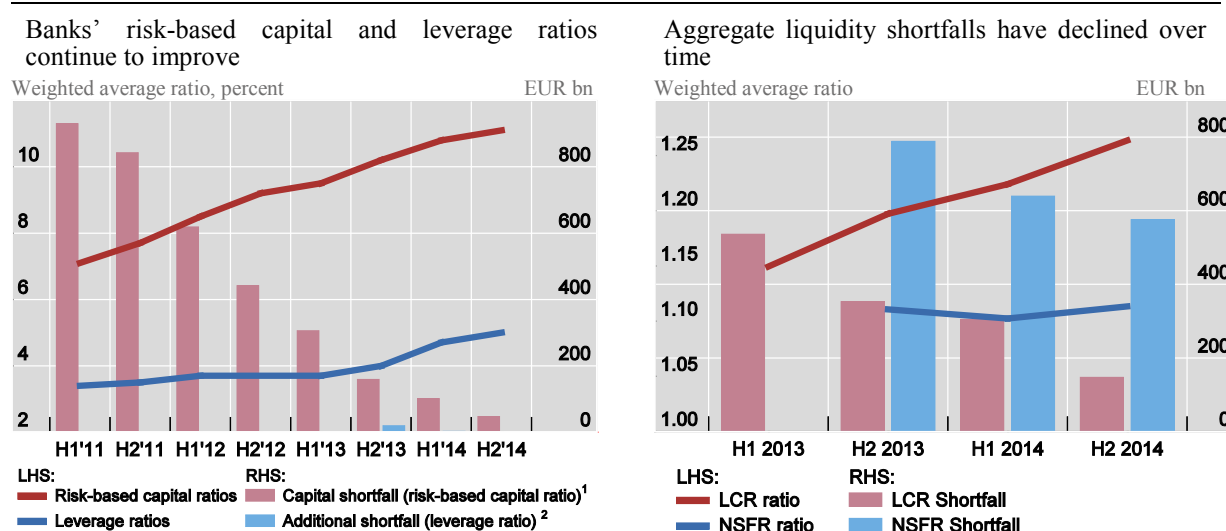
- All 24 FSB jurisdictions have Basel III risk-based **capital** rules in force.
- Final rules on **liquidity** (Liquidity Coverage Ratio, LCR) have been issued in all but two jurisdictions, and are in force in 22 jurisdictions (98% of the market).
- Final rules on higher loss absorbency requirements for **G-SIBs** have been issued in 9 of the 10 FSB jurisdictions that have G-SIBs headquartered in them. These rules have to be in force at the beginning of 2016.
- Final rules on the assessment methodology and higher loss absorbency requirements for **D-SIBs**, also due in 2016, have been issued in 14 jurisdictions (45% of the market).

Banks remain on track to meet the new capital and liquidity standards.

- All large internationally active banks already meet the fully phased-in risk-based minimum capital requirements.
- 80% of these banks meet or exceed the fully phased-in minimum liquidity requirements – the LCR and the Net Stable Funding Ratio (NSFR).

Evolution of banks' regulatory capital and liquidity ratios

Graph 2



¹ Total capital shortfall for banks to reach the fully phased-in 2019 Common Equity Tier 1 (CET1) target ratio of 7% plus bank-specific G-SIB surcharges if applicable, and the respective target levels (and G-SIB surcharges) for the Tier 1 and total capital ratios.

² Additional total capital shortfall to meet leverage ratio (on top of the target risk-based capital ratios), assuming a 3% calibration.

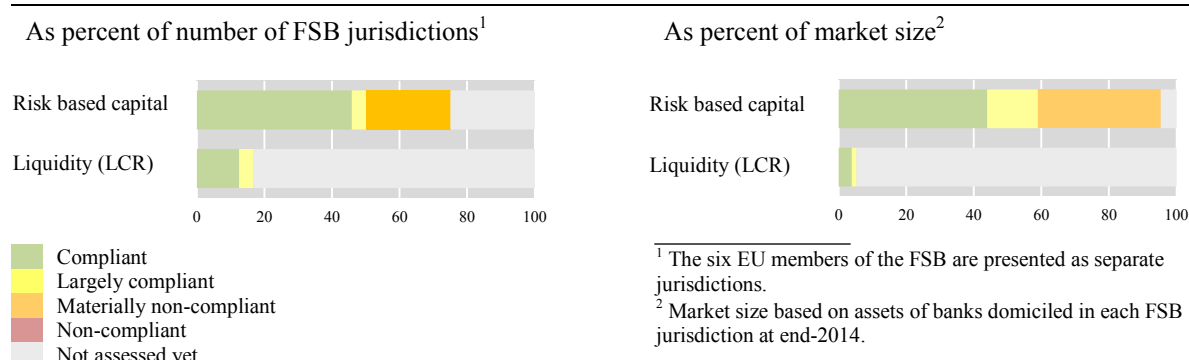
Note: The left graph shows data for banks that have Tier 1 capital of more than €3 billion and are internationally active ("Group 1 banks"), while the right graph is for all banks covered by Basel Committee on Banking Supervision (BCBS) monitoring. The ratios on the left graph are weighted by risk-weighted assets, while the liquidity ratios on the right graph are weighted by CET1 capital. Source: BCBS [Basel III Monitoring Report](#).

Implementation is consistent with the Basel framework in most jurisdictions.

- **Risk-based capital rules** – 19 FSB jurisdictions were assessed by the BCBS.²
 - Twelve (representing 44% of the market) were found to be compliant with Basel III;
 - One (representing 15% of the market) was found to be largely compliant; and
 - Six (representing 36% of the market) were found to be materially non-compliant.
- **Liquidity rules** – all five FSB jurisdictions assessed by BCBS to date (representing 6% of the market) were deemed compliant or largely compliant with the LCR.

Consistency with Basel III risk-based capital rules can be improved

Graph 3



Work is underway to improve consistency in banks' calculations of risk-weighted assets.

- BCBS analysis finds material variations in banks' risk-weighted asset calculations (based on their internal estimates) due to factors other than differences in underlying risk.
- The BCBS is working to address such variations and thereby improve the consistency and comparability of banks' regulatory capital ratios.³

The adoption of regulatory frameworks for compensation is largely completed.

- Almost all FSB jurisdictions have now implemented the FSB *Principles and Standards for Sound Compensation Practices*, which aim to reduce incentives for excessive risk taking that may arise from the structure of firms' compensation schemes.
- Banks' compensation structures have become better aligned with risks since the financial crisis, and there is increasing use of malus provisions to adjust the unvested portion of employees' variable remuneration on an *ex post* basis. However, the use of provisions to claw back from employees the vested portion of variable compensation in the event of adverse risk outcomes, including for cases of misconduct, remains largely untested.
- The focus now is on embedding the oversight of compensation practices in supervisory frameworks and on further improving the governance and risk alignment of compensation.

² The most material inconsistencies relate to internal models for credit risk, counterparty credit risk and securitisation, and the definition of capital.

³ Measures include revisions to the risk weights and approaches for modelling risk exposures, introduction of capital floors, enhanced disclosures and ongoing monitoring.

3.2 Ending too-big-to-fail

The identification of G-SIFIs is underway.

- G-SIBs and global systemically important insurers (G-SIIs) have been designated. A decision on the G-SII status of reinsurers has been postponed, pending further development of the assessment methodology.
- The assessment methodologies for non-bank non-insurer G-SIFIs will be finalised once the current FSB work on financial stability risks from asset management activities is completed.

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

- Implementation of Higher Loss Absorbency as well as of reporting and disclosure requirements for G-SIBs is generally proceeding on a timely basis (see Basel III section).
- Supervisory frameworks for G-SIBs have improved and supervisory colleges have been established for almost all G-SIBs, although more work is needed to strengthen cross-border supervisory cooperation (Annex 1, Box 2).
- Many banks continue to encounter difficulties in achieving effective risk data aggregation and risk reporting, and will not meet the January 2016 deadline set for compliance with the BCBS Principles in this area.
- To ensure that G-SIBs have sufficient capacity to absorb losses in resolution, the FSB has agreed an international standard for total loss-absorbing capacity (TLAC). Impact assessments indicate that the benefits exceed costs by a good margin (Annex 1, Box 3).

Substantial work remains in implementing effective resolution regimes and plans.

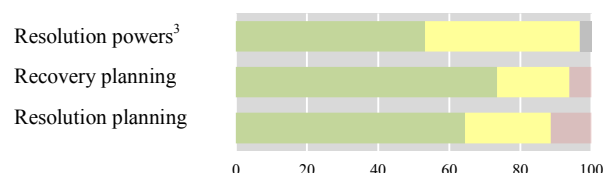
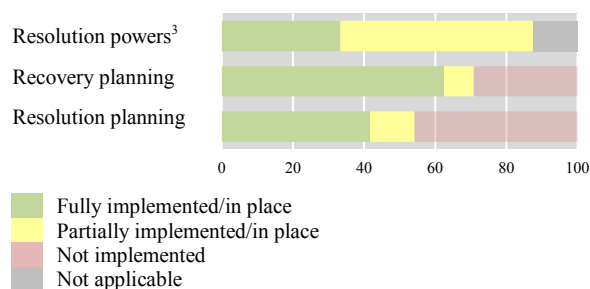
- All G-SIBs have recovery plans and crisis management groups (CMGs), but significant work remains to make resolution strategies and plans operational.
- Only a subset of FSB jurisdictions, mostly G-SIB home jurisdictions, have a bank resolution regime with a scope and range of powers that is broadly in line with the FSB *Key Attributes of Effective Resolution Regimes*.

More work is needed to implement comprehensive bank resolution regimes

Graph 4

As percent of number of FSB jurisdictions¹

As percent of market size²



■ Fully implemented/in place
■ Partially implemented/in place
■ Not implemented
■ Not applicable

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-2014.
³ Composite indicator on extent to which jurisdictions have transfer, bail-in and temporary stay powers in their resolution regime.

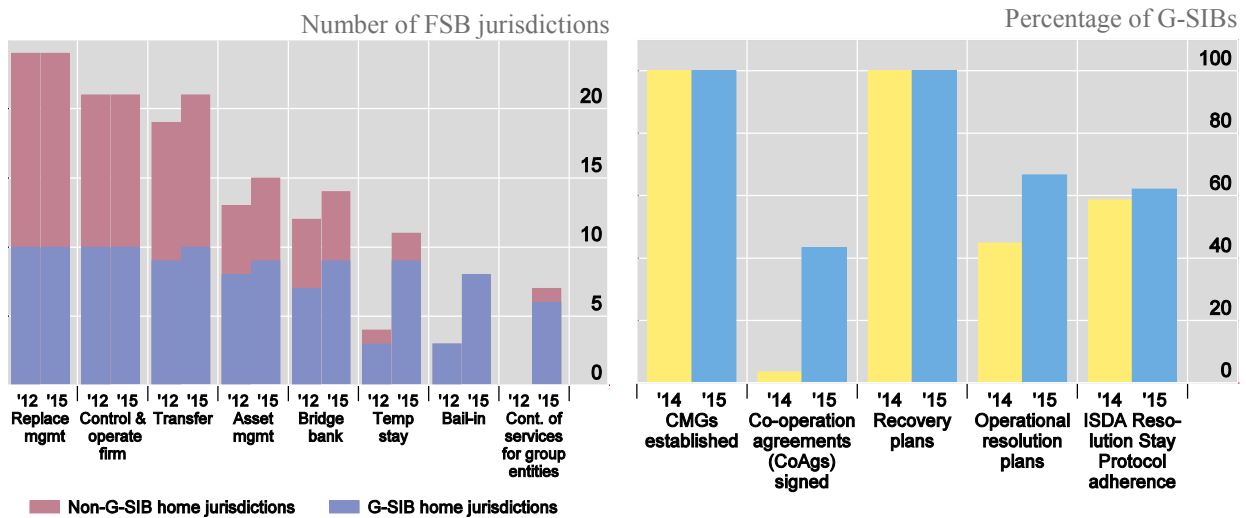
- Implementation of the Key Attributes in the non-bank financial sectors is less advanced, although CMGs have been established for most G-SIIs.
- Systematic cross-border resolution planning processes are not yet in place for the largest CCPs, although work is underway to establish such processes.

Evolution of bank resolution-related requirements

Graph 5

Progress in adopting comprehensive bank resolution powers is greatest for G-SIB home authorities

The implementation of G-SIB-specific resolution requirements has progressed but remains uneven



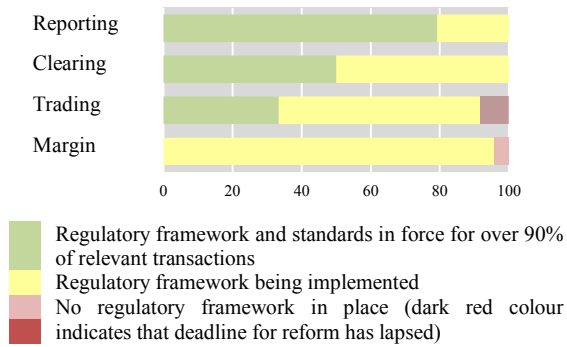
Note: The left graph shows the availability of bank resolution powers in FSB jurisdictions at the time of the 2013 thematic review (which was based on data as of December 2012) and at present. The right graph shows the G-SIB-specific resolution requirements that have been completed as of August 2014 and August 2015. Source: [FSB report to the G20 on progress in resolution](#) (November 2015).

3.3 Making derivatives markets safer

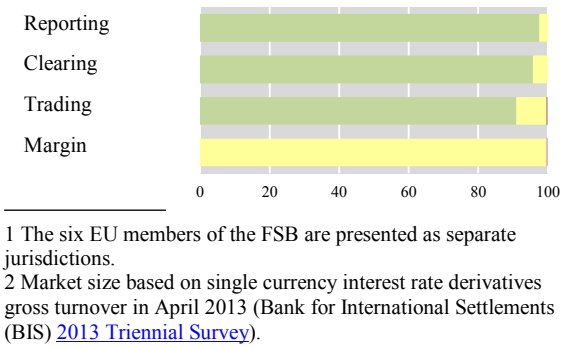
Implementation of OTC derivatives reforms is well-underway, although it continues to be uneven and behind schedule. Progress is more advanced in the largest derivatives markets.

- Implementation is most advanced for trade reporting, central clearing and higher capital requirements for non-centrally cleared derivatives.
- Trade reporting requirements are in place in all except three FSB jurisdictions, although the comprehensiveness of these requirements varies across jurisdictions and asset classes.
- 12 jurisdictions have central clearing frameworks in force for standardised derivatives that apply to over 90% of their markets.
- 8 jurisdictions have exchange/platform trading frameworks in place for standardised derivatives that apply to over 90% of their markets.
- Most jurisdictions are in the early stages of adopting margin requirements for non-centrally cleared derivatives, which will be phased-in between September 2016 and 2019.

As percent of number of FSB jurisdictions¹



As percent of market size for interest rate swaps²

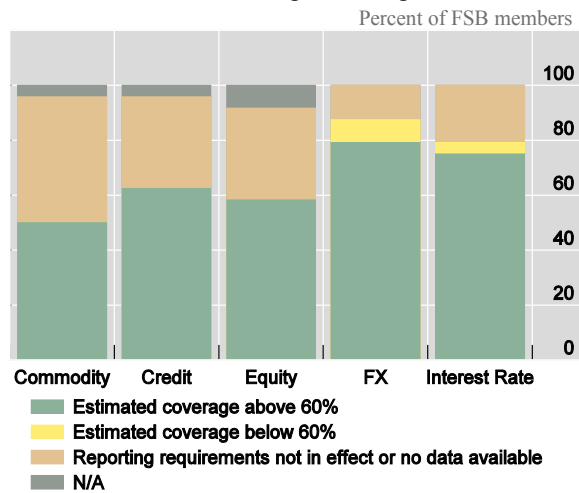


1 The six EU members of the FSB are presented as separate jurisdictions.
 2 Market size based on single currency interest rate derivatives gross turnover in April 2013 (Bank for International Settlements (BIS) 2013 Triennial Survey).

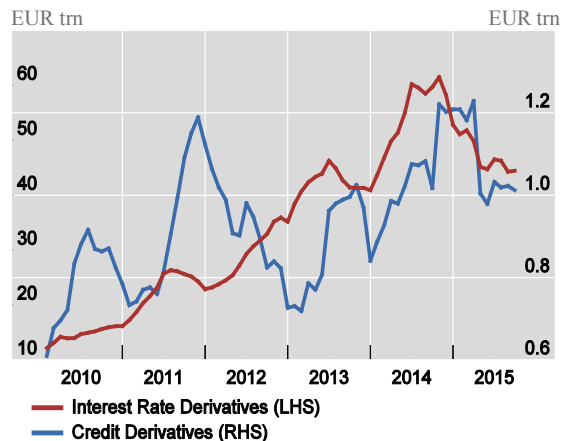
The availability and use of TRs and CCPs continues to expand globally.

- The trade reporting rates are highest for interest rate and foreign exchange transactions. Market evidence indicates growing global usage of CCPs particularly for interest rate derivatives, which is the asset class for which CCP product offerings are most extensive.
- Progress is being made in adopting frameworks for TRs and CCPs and in setting expectations for their sound design and operation in accordance with the *Principles for Financial Market Infrastructures* by the Committee on Payments and Market Infrastructures (CPMI) and International Organization of Securities Commissions (IOSCO).

Trade reporting requirements are most prevalent for interest rate and foreign exchange derivatives¹



Central clearing of OTC derivatives has increased²



¹ Estimated regulatory coverage of reporting requirements (% of all new transactions that are required to be reported) across FSB jurisdictions by asset class as of April 2015. ² 6-month moving average of volumes in OTC interest rate and credit derivatives cleared by selected US and European CCPs. Source: FSB, 9th and 10th Progress Reports on the implementation of OTC derivatives market reforms.

Work is underway to make trade reporting truly effective.

- An FSB peer review found weaknesses in the quality and completeness of data reported to TRs, and in authorities’ ability to access, use and aggregate this data (Annex 1, Box 4).
- The FSB and SSBs are addressing these, including through steps to harmonise transaction reporting, and to develop a framework for global unique trade and product identifiers.
- FSB member jurisdictions have agreed to remove legal barriers to reporting of OTC derivatives to TRs, have legal frameworks in place to permit authorities’ access to TR-held data, and work together with TRs and market participants to improve TR data quality.

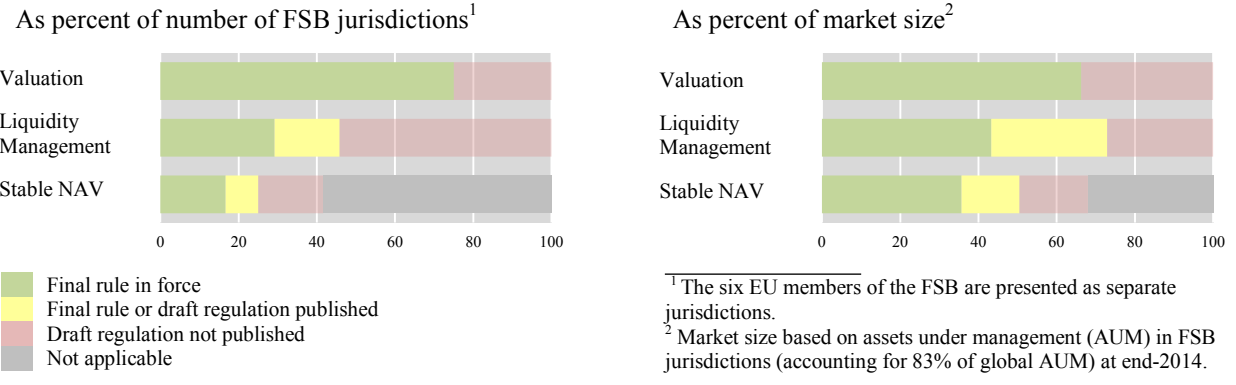
3.4 Transforming shadow banking into resilient market-based finance

- The FSB has created a system-wide monitoring framework to track global trends and risks in the shadow banking system and, in collaboration with SSBs, has been developing policy measures in five areas to strengthen oversight and regulation.⁴

Implementation of policies to reduce money market funds’ (MMFs) run risk is ongoing.

- Overall implementation of the IOSCO recommendations for MMFs is most advanced in five FSB jurisdictions (63% of the global market), including the largest market (US).
- Most jurisdictions have implemented the fair value approach for the valuation of MMF portfolios, but progress in liquidity management is less advanced and less even.
- Nine FSB jurisdictions continue to permit MMFs that offer a stable net asset value (NAV), and further work is needed in some of these jurisdictions to reinforce the resilience of those funds and their ability to meet redemptions.

Implementation progress is most advanced in the largest MMF markets Graph 8



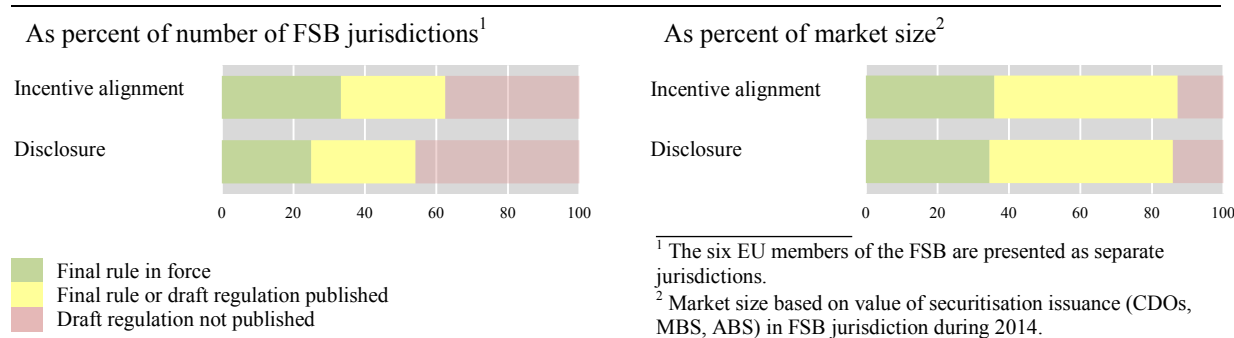
⁴ These are: mitigating risks in banks’ interactions with shadow banking entities; reducing the susceptibility of money market funds to “runs”; improving transparency and aligning incentives in securitisation; dampening pro-cyclicality and other financial stability risks in securities financing transactions; and assessing and mitigating financial stability risks posed by other shadow banking entities and activities.

Implementation of incentive alignment recommendations for securitisation is uneven.

- There is significant but mixed progress across FSB jurisdictions in implementing IOSCO's recommendations on incentive alignment approaches for securitisation.
- 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.

Divergence in implementing incentive alignment recommendations for securitisation

Graph 9



Implementation of other shadow banking reforms is generally at an early stage.

- Implementation of policy measures in some other areas (e.g. capital requirements for banks' investments in funds, framework for banks' large exposures, FSB policy framework for the oversight and regulation of other shadow banking entities) has started.
- Policy development in another area – the framework to address financial stability risks in securities financing transactions – will be completed shortly with the publication of numerical haircut floors to non-centrally cleared transactions between non-bank entities.⁵
- The BCBS is continuing its review of the scope of consolidation for prudential regulatory purposes and plans to issue a consultative document soon.

3.5 Progress in other reform areas

- Several jurisdictions have established inter-agency bodies for **macroprudential policies**, strengthened system-wide monitoring, and are using various tools to address financial stability risks.
- The framework to close the **data gaps** identified in the financial crisis has been substantially established. The BIS International Data Hub has been created to collect and share data among authorities on G-SIBs and their linkages with national financial systems.
- Of the three FSB jurisdictions identified in the 2012 FSB peer review as not having an explicit **deposit insurance system**, China introduced such a system in May 2015 while Saudi Arabia and South Africa intend to introduce one in the near future.
- Almost all jurisdictions report having in place an oversight framework with registration and ongoing requirements relating to **hedge funds** or their managers.

⁵ These floors set an upper limit on the amount that non-banks can borrow against securities of different asset classes.

- Almost all jurisdictions report that they have put in place requirements for the registration and oversight of **credit rating agencies (CRAs)**. However, more work is needed to avoid mechanistic reliance on CRA ratings by reducing references to CRA ratings in national laws and regulations, developing alternative standards of creditworthiness, and enhancing firms' credit assessment capabilities.
- Significant misconduct issues have arisen in recent years in relation to financial benchmarks. Since the publication of the IOSCO *Principles for Financial Benchmarks* in 2013, the administrators of the most widely used **interest rate benchmarks** (EURIBOR, LIBOR, TIBOR) have taken major steps to improve them. Progress has also been made in implementing FSB recommendations for reforms to **foreign exchange benchmarks**, although more work is needed to apply these recommendations to all such benchmarks.
- The international and US accounting standard setting bodies are proceeding with separate standards on **expected loan loss provisioning**, both of which are forward-looking and take account of the lessons of the crisis. These standards have not converged, and the FSB has asked the standard setters to monitor their consistent implementation and to continue to seek opportunities for meeting the G20's call for further **accounting** convergence.
- The global **Legal Entity Identifier (LEI)** system is already operational. Over 390,000 entities in 195 countries have received unique identifiers for financial transactions, and authorities in several FSB jurisdictions are already using the LEI to support regulatory actions. Further adoption of the LEI by legal entities worldwide and its use by authorities for a wider range of regulatory purposes is essential to fully reap its collective benefits.
- Implementation by major banks of the **Enhanced Disclosure Task Force (EDTF) recommendations on risk disclosures** continues to be made. Overall, participating banks report disclosure in their 2014 annual reports of 82% of the information recommended by the EDTF, a 48% increase from disclosures prior to the original EDTF report in 2012.

3.6 Strengthening adherence to international financial standards

FSB members are implementing their commitments to lead by example.

- IMF-World Bank Financial Sector Assessment Program (FSAP) assessments for South Africa and the United States were completed over the past year.
- Almost all FSB jurisdictions have published the results of their compliance assessments in Reports on Standards and Codes published by the IMF and World Bank.
- Over the past year, the FSB completed country peer reviews of China, Russia, Saudi Arabia and Turkey, while the reviews of Brazil, India and Japan are either underway or will be launched shortly.

Progress on adherence to standards on international cooperation and information exchange continues to be made.

- All securities regulators in FSB jurisdictions have now become full signatories of IOSCO's Multilateral Memorandum of Understanding.
- 46 of the 61 jurisdictions evaluated by the FSB under an initiative to encourage global adherence to standards on international cooperation and information exchange have demonstrated sufficiently strong adherence.

4. Overall effects of reforms

A key objective of the FSB is to evaluate, in collaboration with SSBs, whether the reforms achieve their intended outcomes.

- It is empirically difficult to single out the effects of reforms from other (particularly conjunctural) factors and post-crisis economic developments. Similarly, individual national reforms or national implementation that is inconsistent with internationally agreed reforms may contribute to overall effects.
- The effects can also be expected to differ across markets and regions given different starting positions and the scope for substituting financial providers and instruments. Given this, one should consider the incidence of reforms in different jurisdictions and markets.
- Since most reforms are still in the process of implementation, longer-term effects (in terms of the reduced frequency and severity of financial crises) may not yet be fully apparent. Whether the reforms are truly effective can only be assessed over a longer period of time that includes a full financial cycle and both stressed and normal market conditions.
- The period immediately prior to the crisis was one in which the financial system had become badly weakened, distorted and much financing was misallocated. That period cannot therefore serve as a relevant point of reference for judging the effects of reforms.
- Given these factors, the analysis of effects remains tentative and will continue to be updated and enhanced in future reports as implementation advances.

4.1 Building a more resilient financial system

The most important and tangible effect of the reforms has been to make the banking sector more resilient.

- Banks have built higher and better quality capital buffers largely through retained earnings and have begun to reduce excessive levels of leverage. Funding profiles have improved, while the decline in risk weights has been ended.
- The reforms have also contributed to a fundamental re-appraisal of the risks associated with many types of products, while improvements in banks' risk management, governance and compensation structures have helped reduce incentives for excessive risk-taking.⁶

There is also progress in addressing other critical fault lines revealed by the crisis.

- G-SIBs are subject to resolution planning requirements; additional regulatory minimum capital requirements beyond those for other banks (bringing the requirements to a level of 7-10 times compared to those prior to the crisis);⁷ and more intense supervision.

⁶ See the FSB thematic reviews on [supervisory frameworks and approaches for systemically important banks](#) (April 2015) and [risk governance](#) (February 2013), and the FSB progress report on compensation practices (November 2015).

⁷ The tightening in definitions of risk-weighted assets and capital under Basel III itself doubled effective capital requirements, while the numerical requirements have also more than tripled. See the speech on "[The future of financial reform](#)" by Carney (November 2014).

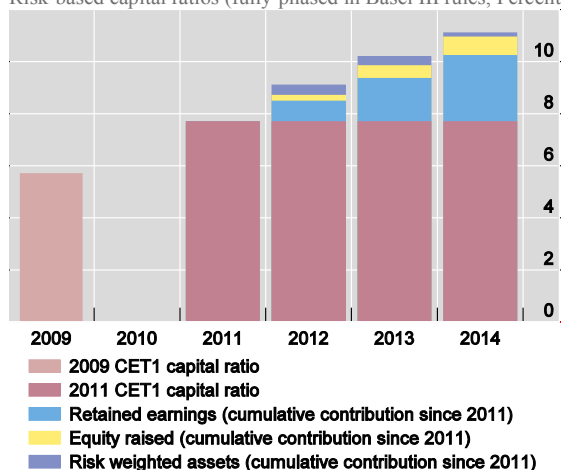
- Contagion risk arising from interconnectedness through counterparty exposures between the core participants in the financial system has been reduced, with an increasing volume of OTC derivative contracts now mandated for central clearing.
- Unsound and unsustainable business practices and products in non-bank credit intermediation, such as complex securitisations and heavy reliance on leverage and short-term wholesale funding, have been sharply curtailed – partly due to stronger regulation and partly due to market participants’ increased risk awareness and lower risk appetite.
- Reforms in these areas are still ongoing and need to be fully implemented to realise the benefits in terms of enhanced resilience.

Banking sector resilience

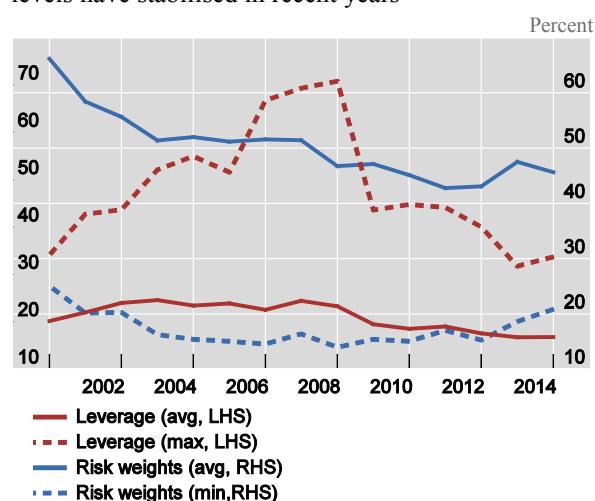
Graph 10

Banks have increased their capital ratios mainly through retained earnings

Risk-based capital ratios (fully-phased in Basel III rules, Percent)



G-SIBs have reduced their leverage while risk weight levels have stabilised in recent years¹



¹ The G-SIBs shown in this graph are the ones that were identified in November 2014. See http://www.financialstabilityboard.org/wp-content/uploads/r_141106b.pdf.

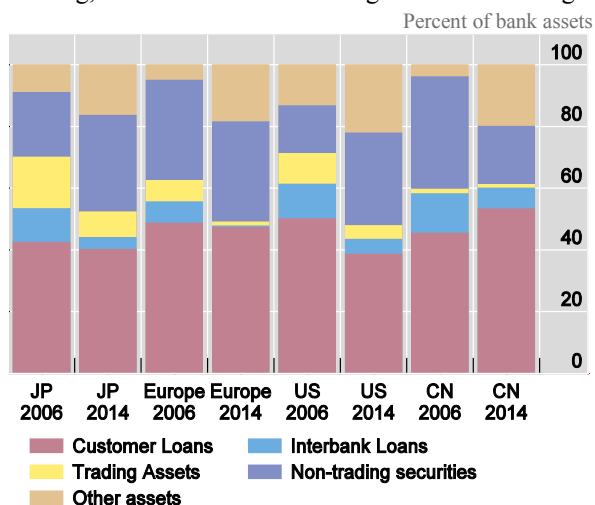
Left panel: Evolution of fully phased-in common equity tier 1 (CET1) capital ratio of the BCBS “Group 1” banks (i.e. banks that have Tier 1 capital of more than €3 billion and are internationally active), and its decomposition into retained earnings’ accumulation, new equity raised, and changes in risk weighted assets. The figure for 2009 is based on the initial Basel III proposal and there is no data for 2010. Source: BCBS Quantitative Impact Study (QIS).

Right panel: Bank leverage (total assets to tier 1 capital) and risk weights (risk-weighted assets to total assets) of G-SIBs. Source: Bankscope.

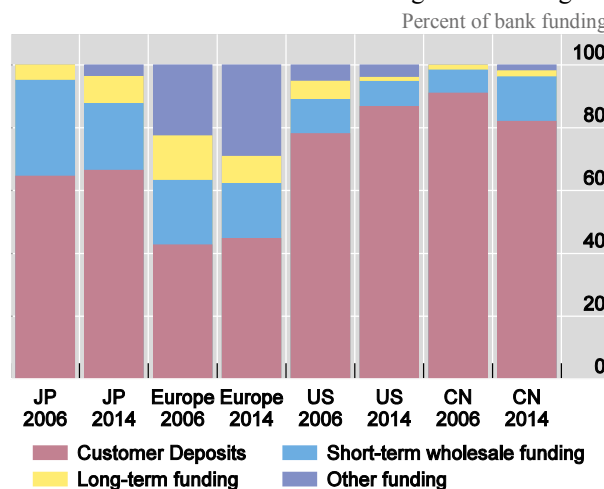
Financial reforms, coupled with other post-crisis developments, are contributing to changes in structure, business models and performance of financial institutions, particularly banks.

- Notably for advanced economy G-SIBs, there has been: a pullback from trading activities and interbank lending; an increase in liquid assets (mainly government bonds); a reduction in short-term wholesale funding; and greater emphasis on deposit-taking.
- The share of G-SIBs as a proportion of global banking assets has declined marginally since the crisis, although their balance sheet size remains large in absolute terms.
- Returns on bank equity have decreased in most cases compared to the pre-crisis period. This has been driven by credit losses, weak post-crisis growth, low interest rates, misconduct fines, as well as by reforms and pressures from investors and counterparties to reduce excessive leverage and asset-liability mismatches.

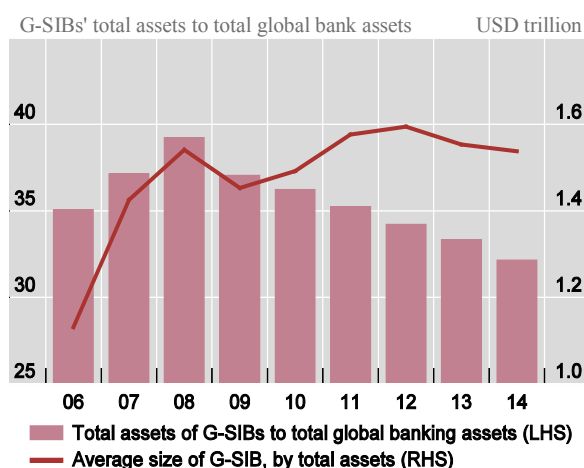
Most G-SIBs have reduced trading and interbank lending, and increased non-trading securities holdings



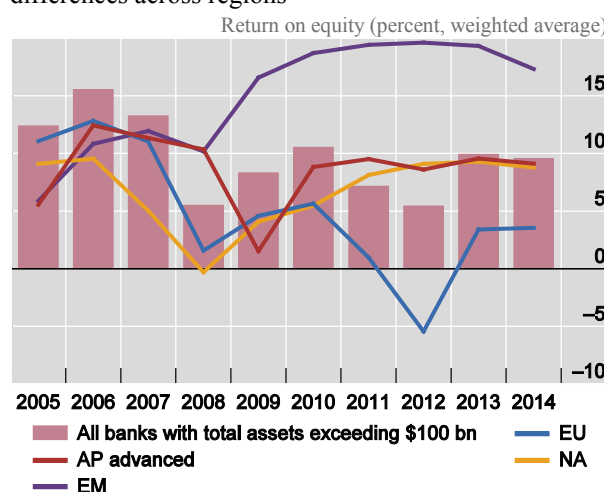
Most G-SIBs have increased retail deposits, and reduced short-term wholesale and long-term funding



The share of G-SIBs to global banking assets has declined, but their balance sheets remain sizeable



Large banks' profitability has recovered since 2008, but to lower levels than pre-crisis and there are significant differences across regions



Top panels: Balance sheet structure for those G-SIBs identified in November 2014 (see www.financialstabilityboard.org/wp-content/uploads/r_141106b.pdf) in 2006 and 2014, grouped by jurisdiction (CN=China, JP=Japan, US=United States) and region (Europe). Source: Bankscope.

Bottom left panel: Evolution of G-SIBs' average balance sheet size in absolute terms and as a proportion of global banking assets. Source: Bankscope and FSB [Global Shadow Banking Monitoring Report 2015](http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/) (November 2015).

Bottom right panel: Return on equity for all global banks with total assets exceeding US\$100 billion as of end-2014, weighted by total assets and grouped by region. 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/United Arab Emirates). Source: Bankscope.

4.2 Supporting sound financial intermediation

The improvement in resilience has been achieved while maintaining the overall provision of credit to the real economy.

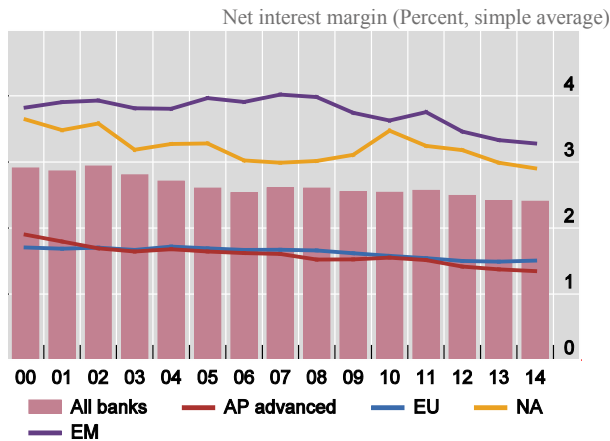
- Overall, banks have met the higher capital requirements without cutting back sharply on lending. Moreover, the cost of financing to the real economy, whether by banks or bond markets, has remained low in recent years.

- The extended phase-in period of the reforms coupled with exceptionally accommodative monetary policies and jurisdiction-specific factors may have contributed to this outcome.
- Most FSB jurisdictions report no material shortage in the supply of long-term investment financing. This is consistent with historical experience,⁸ which suggests that uncertainty about the future state of the economy and expected profits, rather than financing conditions, has played a key role in driving corporate investment.

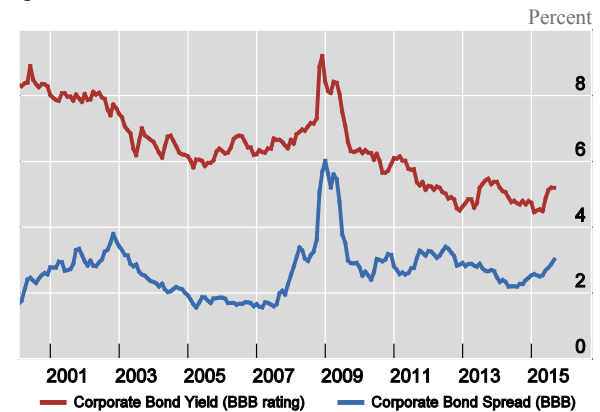
Evolution of financing volumes and spreads

Graph 12

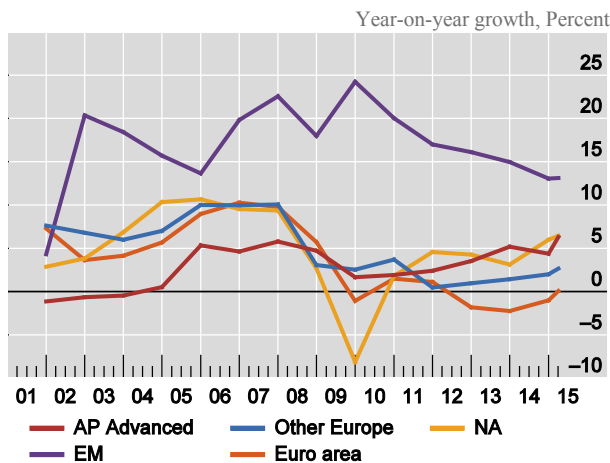
Banks' net interest margins have narrowed since the financial crisis



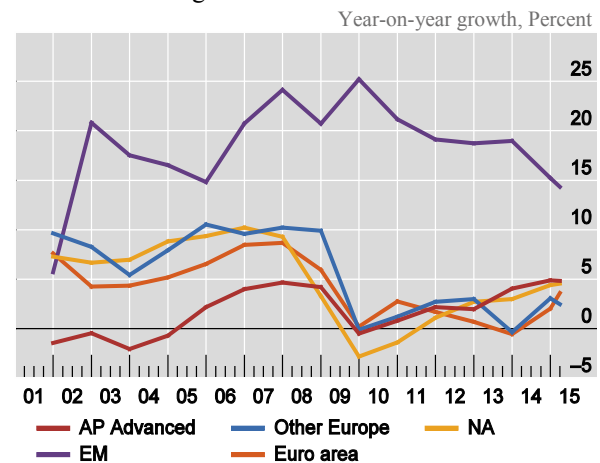
Bond yields have been falling in recent years and spreads have remained at a low level



Bank lending growth has now resumed in all regions



Total lending growth to the real economy has resumed in all regions



Top left panel: Simple average of net interest margins, based on top 1,000 global banks with assets exceeding USD 10 billion. AP advanced=Australia/Hong Kong/Japan/Korea/Singapore, EU=Europe, NA=Canada/US, EM=Emerging Markets (Argentina/Brazil/Chile/China/Egypt/India/Indonesia/Mexico/Philippines/Russia/Saudi Arabia/ South Africa/Taiwan/Thailand/Turkey/UAE). Source: Bankscope.

Top right panel: BBB-rated corporate bond yields and spreads (relative to yield on 10-year Treasuries). Source: Moody's.

Bottom panels: Year-on-year growth of outstanding bank lending (left) and total lending by all sectors (right) to the private non-financial sector. AP Advanced=Australia/Hong Kong/Japan/Korea/Singapore, Other Europe=Denmark/Norway/Sweden/Switzerland/UK, NA=Canada/US, EM=Emerging Markets (Argentina/Brazil/China/India/Indonesia/Malaysia/Mexico/Russia/Saudi Arabia/South Africa/Thailand/Turkey). Source: BIS statistics on [credit to the non-financial sector](http://www.bis.org/publ/credit/non-financial.htm).

⁸ Banerjee, Kearns and Lombardi (March 2015), BIS Quarterly Review, "(Why) Is investment weak?", http://www.bis.org/publ/qtrpdf/r_qt1503g.pdf.

- Banks that had high capital ratios at the time of the crisis have tended to grow more than other banks, underscoring the importance of solid bank balance sheets in supporting lending and economic activity.⁹

Financing to the real economy has recovered at a different pace across regions.

- Following a sharp decline after the crisis, bank lending growth has now resumed in all regions. Bank lending growth has been slow to resume in the euro area, in part reflecting the region’s sovereign debt and banking crises.
- Total credit to the real economy has expanded in all regions, driven in part by increased corporate bond financing and lending by non-bank financial institutions. In a number of advanced economies, this type of non-bank financing has accounted for nearly all of the increase of credit for corporates since 2007.

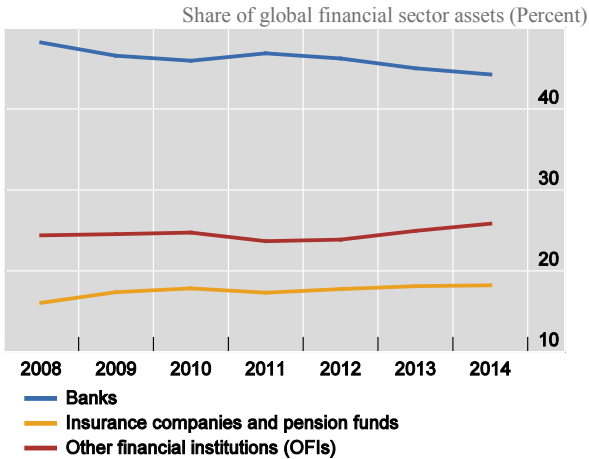
A notable post-crisis trend has been the growth of market-based finance.

- Underlying drivers include regulatory reforms that may have increased the relative cost of bank-based finance, as well as long-term structural (e.g. demographics leading to asset accumulation) and conjunctural (e.g. search for yield) factors.
- The shift toward market-based finance represents a welcome increase in diversity of the sources of finance supporting economic activity, but will need to be matched with measures to address any associated financial stability risks.

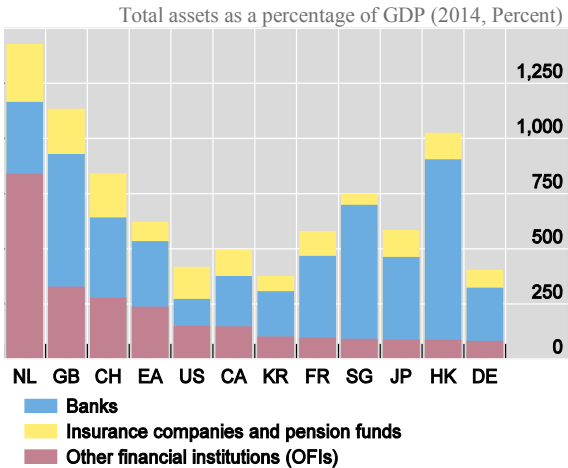
Growth in non-bank financial intermediation

Graph 13

The share of global financial sector assets accounted for by non-banks has grown in recent years



The size of non-banking financial sectors varies widely across jurisdictions



Left panel: The remaining share of global financial sector assets (not shown) is taken up by public financial institutions and central banks. Right panel: Size of financial sectors in selected FSB jurisdictions. CA=Canada; CH=Switzerland; DE=Germany; EA=Euro Area; FR=France; GB=United Kingdom; HK=Hong Kong; JP=Japan; KR=Korea; NL=Netherlands; SG=Singapore; US=United States. Source: FSB [Global Shadow Banking Monitoring Report 2015](#) (November 2015).

⁹ Cohen (September 2013), BIS Quarterly Review, “How have banks adjusted to higher capital requirements?”, http://www.bis.org/publ/qtrpdf/r_qt1309e.pdf.

5. Areas for attention

This section highlights key implementation challenges and areas that merit ongoing attention as to whether there have been material unintended consequences of reforms.

- The monitoring of implementation and the adoption of policy measures to address identified challenges and material unintended consequences represent good regulatory practice and are an essential part of the accountability of the FSB and SSBs.
- Following examination, policy adjustments to avoid unintended adverse effects have already been made in a number of areas, including technical changes in the calibration of the Basel III capital adequacy framework for trade finance, the liquidity ratios and the leverage ratio; in some of these cases, timetables for phase-in have also been adjusted.

5.1 Implementation challenges

Promoting cross-border cooperation

Further cross-border cooperation is needed to overcome obstacles to effective implementation of reforms, particularly for OTC derivatives and resolution regimes.

OTC derivatives

- Several authorities note that unevenness in the pace of implementation as well as inconsistencies or gaps in applying requirements to cross-border transactions can result in duplicative or overlapping requirements, or lead to opportunities for regulatory arbitrage. Some authorities note that it could result in market fragmentation and decreased liquidity.
- Some progress has been made over the past year. International work streams are examining cross-border issues and regulatory tools. Most jurisdictions have the authority to exercise deference to parts of another jurisdiction's regulatory regime where justified in line with the G20 Leaders' statements,¹⁰ but only a small number of jurisdictions have to date made such deference determinations.
- Further work is needed to promote cooperation among regulators, including by increasing efforts to complete the reform agenda as well as by using the options set out in IOSCO's cross-border regulatory toolkit.

Resolution regimes

- Effective resolution planning and the orderly resolution of a cross-border bank require national authorities to have legal powers and efficient processes for sharing information, to have developed firm-specific cooperation agreements (CoAgs) with host authorities on CMGs for G-SIFIs, and to be able to give prompt effect to foreign resolution actions.
- Significant work remains to make these arrangements fully operational. 13 CoAgs have been signed between home and host authorities of G-SIBs, while only a minority of FSB jurisdictions have mechanisms to give prompt effect to foreign resolution actions.

¹⁰ The G20 Leaders at the 2013 St Petersburg Summit agreed that "jurisdictions and regulators should be able to defer to each other when it is justified by the quality of their respective regulatory and enforcement regimes, based on similar outcomes, in a non-discriminatory way, paying due respect to home country regulatory regimes."

- Jurisdictions should proceed with the prompt implementation of the FSB's *Key Attributes* and guidance to make resolution actions effective across borders.

Implementing reforms in EMDEs

EMDEs face some challenges in implementing the agreed reforms.

- Those EMDEs that are members of the FSB are in the process of adopting internationally agreed reforms in accordance with their commitments and the implementation timetable. A number of other EMDEs are also implementing some of these reforms, to the extent they are relevant for their financial systems.
- Some of these EMDEs report challenges in implementing reforms due to the limited size and level of development of their domestic financial markets, capacity and resource constraints, and cost pressures (e.g. for new infrastructure). These challenges were discussed in an FSB Emerging Markets Forum in March 2015 (Annex 1, Box 5).
- EMDEs should continue to make appropriate use of the existing flexibility within international standards to enable them to implement the agreed reforms in a way that is appropriate to their circumstances and in line with their international commitments. This includes using observation and phase-in periods, calibrating parameters, and applying national discretions and proportionality, where these are in accordance with the international standards.

No major unintended consequences have been identified to date from the implementation of internationally agreed reforms in EMDEs.

- Evidence on the effects of reforms in EMDEs is predominantly of a qualitative nature, reflecting the still early stage of implementation and challenges in separating the effects of reforms from broader post-crisis developments.
- Aggregate measures show lending growth has remained high and borrowing costs have fallen in EMDEs in recent years (Graph 12).

Some EMDEs are affected by spill-overs from the implementation of reforms in the home jurisdictions of global financial institutions.

- These spill-overs often arise from the way in which home jurisdictions or the relevant institutions have implemented the reforms – for example, through a parent bank's measurement of risks and assignment of capital on a consolidated basis vis-à-vis its host country subsidiary.
- In certain cases, concerns about spill-overs are also created by national initiatives to improve financial stability that go beyond internationally agreed minimum standards, such as structural bank reform measures in the US and Europe.
- Another potential concern cited by some EMDEs is the cross-border impact of reforms, such as the challenges of meeting recognition/equivalence requirements of major financial centres in OTC derivatives.

The FSB, in collaboration with SSBs and international financial institutions, will continue to monitor the effects of regulatory reforms on EMDEs and assist them in implementation.

- Sharing of experiences and lessons to foster a better understanding of the impacts arising from implementation can facilitate the mitigation of material unintended consequences.

Ensuring effective use of resources for implementation

Stronger coordination of monitoring efforts and greater sharing of experiences are needed to facilitate more effective use of limited implementation resources.

- With more reforms coming online, there are heavy demands on a limited pool of official sector resources, which may lead to shortages in skills in certain key reform areas. This is particularly the case for new areas that require specialised expertise, such as in the case of liquidity standards under Basel III, resolution regimes and OTC derivatives.
- It is important that national authorities are adequately resourced for full and timely implementation of reforms as well as for supporting their effective monitoring.
- To reduce overlapping demands and to assist in the effective prioritisation of monitoring efforts, the FSB is developing a ‘heat map’ of resources for upcoming monitoring work.

The FSB will work with its members (including SSBs) to facilitate the sharing of experiences from implementation through targeted workshops and peer reviews.

5.2 Issues for ongoing monitoring

An open and integrated global financial system

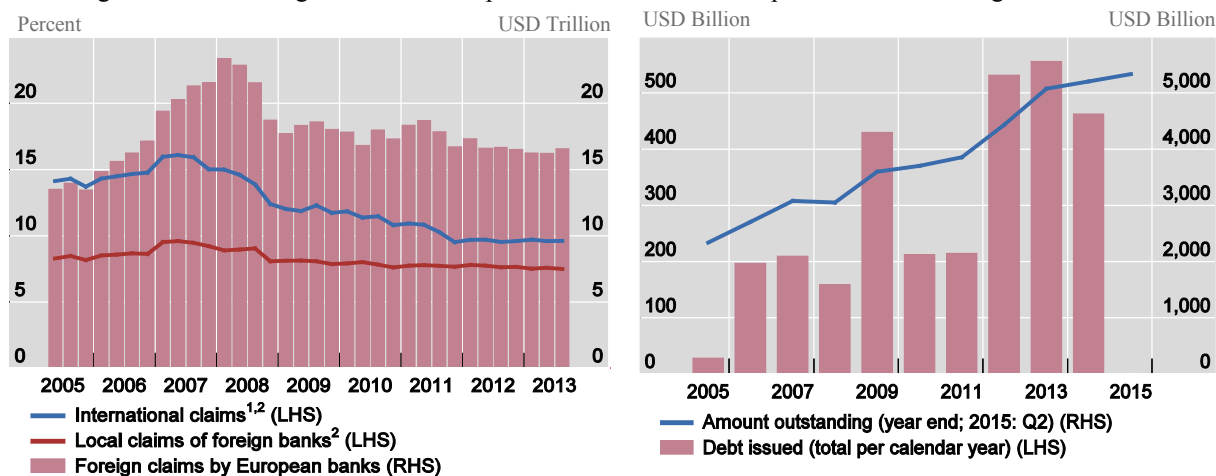
The evidence suggests that the reforms have helped to avoid significant retrenchment and market fragmentation, which has been a common feature of past financial crises.

- On the one hand, direct cross-border lending as a share of total banking assets has declined, primarily because of retrenchment by European banks. A combination of bank clean-up and exit from certain market segments, reduced risk appetite, tighter regulatory rules and adverse regional macroeconomic factors has contributed to this outcome.
- On the other hand, the share of banking assets represented by local lending by foreign bank affiliates has remained fairly stable; new actors have filled some of the gaps, resulting in greater intraregional financial linkages;¹¹ and international bond issuance by non-financial corporates has continued to grow.
- The FSB and SSBs are working to promote an open and integrated system by monitoring implementation of agreed reforms and by developing approaches to deeper cross-border cooperation.

¹¹ See chapter 2 of the April 2015 IMF Global Financial Stability Report (<http://www.imf.org/External/Pubs/FT/GFSR/2015/01/pdf/c2.pdf>) and “EME banking systems and regional financial integration” by the Committee on the Global Financial System (CGFS) (March 2014, CGFS Papers No 51, <http://www.bis.org/publ/cgfs51.pdf>).

Banks have reduced cross-border lending, largely reflecting a fall in the foreign claims of European banks

Net issuance of international securities by non-financial corporates continues to grow since the crisis



¹ Cross-border claims and local claims in foreign currency by foreign banks relative to total banking assets of recipient countries. ² Local claims in domestic and foreign currency by foreign banks relative to total banking assets of recipient countries.

Left panel: Foreign claims by European banks include both international and local claims. More information on definitions is available at <http://www.imf.org/external/pubs/ft/gfsr/2015/01/pdf/c2.pdf>. Source: IMF *GFSR*, April 2015.

Right panel: International debt securities issued by non-financial corporations (net issuance, all instruments, all maturities) by nationality of issuer. The amount of outstanding debt is available until 2015Q2, while the amount of annual debt issued is only available until 2014. Source: [BIS Debt securities statistics](http://www.bis.org/statistics/debt/).

Market liquidity

There have been some concerns that the depth of liquidity in fixed income markets has declined in recent years, although empirical evidence is mixed.

- Daily turnover of US Treasuries has fallen as a share of bonds outstanding (mostly due to increases in the amount outstanding rather than a decline in volume), while corporate bond trading turnover (which has historically been much more limited) has not.
- Bid-ask spreads for many debt products do not suggest that liquidity levels have declined.
- There has been an increased concentration of liquidity providers in fixed income markets and a general reduction in dealer willingness to hold inventories, although this may reflect the low market volatility that until recently has tempered market-making revenues.

A key question for authorities is the extent to which a reduction in market liquidity would pose a financial stability risk during periods of market stress.

- From a stability point of view, less liquid markets are likely to be more volatile and may, as such, trigger or exacerbate financial stress.
- Despite low market volatility in recent years, recent bouts of market turmoil, while short-lived, have illustrated the risks of sudden and sharp price movements.

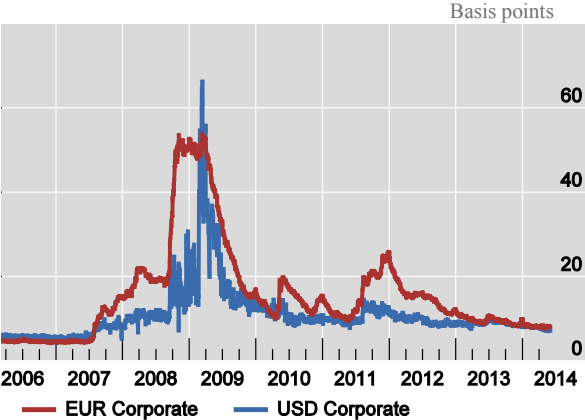
The FSB and its members are analysing the causes and consequences of the shifts in market liquidity in order to respond to identified vulnerabilities as needed.

- The FSB is examining structural and conjunctural risks from market liquidity and asset management activities, such as the extent to which open-ended funds offering on-demand liquidity could suffer mass redemptions that might amplify a severe market sell-off.¹²
- More analysis is needed on whether the interaction of individual regulatory measures has unduly impacted market liquidity conditions. Any such analysis needs to recognise that a reduction in banks’ trading activities was an intended objective, and that the unsustainable excess liquidity prior to the crisis should not be used as a baseline for comparison.
- The broader question is the interaction of reforms with structural shifts in markets, such as the rise of electronic and algorithmic trading, the fragmentation of trading venues, and the sharp increase in asset management.

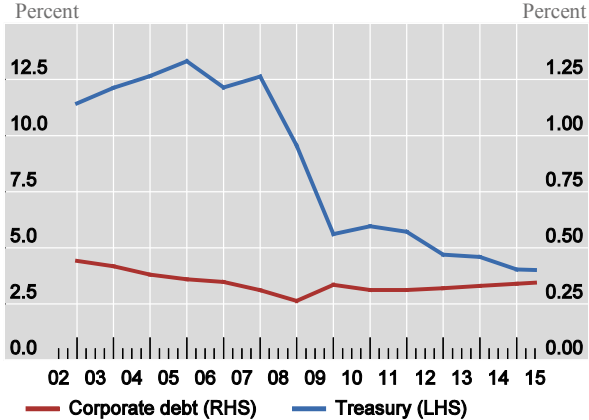
Market liquidity

Graph 15

Corporate bid-ask spreads remain subdued



The turnover ratio in US Treasuries has declined in recent years¹



¹ Average daily bond turnover as a percentage of quantity outstanding.
 Left panel: Evolution of corporate bid-ask spreads. Source: BIS, Quarterly Review March 2015, “[Shifting tides - market liquidity and market-making in fixed income instruments](#)”.
 Right panel: Daily turnover as a share of bonds outstanding. Source: [SIFMA](#).

¹² Other bodies and national authorities are also examining market liquidity and the drivers behind recent bouts of market turmoil. See, for example, “Market-making and proprietary trading: industry trends, drives and policy implications” by the CGFS (November 2014, CGFS Papers No 52, <http://www.bis.org/publ/cgfs52.pdf>), the July 2015 Joint Staff Report by the US agencies on “The U.S. Treasury Market on October 15, 2014” (http://www.treasury.gov/press-center/press-releases/Documents/Joint_Staff_Report_Treasury_10-15-2015.pdf), and chapter 2 of the IMF’s October 2015 Global Financial Stability Report (http://www.imf.org/external/pubs/ft/gfsr/2015/02/pdf/c2_v3.pdf).

Annex 1: Supplementary information

Box 1: *Ex ante* impact assessment studies of financial reforms

A number of ex ante impact studies were carried out to calibrate key elements of the reforms. These studies, organised by the BCBS, BIS and the FSB in 2010, 2011, 2013 and 2015, assessed the transitional and long-term macroeconomic impact of: (i) stronger bank capital and liquidity requirements; (ii) higher loss absorbency for G-SIBs; (iii) OTC derivatives regulatory reforms; and (iv) TLAC. The studies estimate the economic benefits of reforms in reducing the likelihood and severity of financial crises versus the output costs of higher lending rates.

Each of these reforms was estimated to yield net benefits in output terms. The net long-term benefit of increasing bank capital ratios to 12% (along with higher liquidity requirements) was estimated at 1.9% of annual GDP, while the additional net benefits of the G-SIB surcharges, OTC derivatives reforms and TLAC were estimated at around 0.4%, 0.1% and 0.45% annual GDP respectively. While subject to considerable margins of uncertainty, these findings underline the fact that financial crises are very costly. The costs of these crises are estimated at 60% of annual GDP based on the median historic experience.

These studies projected that higher bank capital and liquidity requirements would have a moderate impact on lending volumes and prices. The transitional impact of an increase of risk-based capital requirements by 1% would lead to a reduction in lending volumes by 1.5% over five years, while the long-term impact on lending spreads was found to be 13 basis points. The liquidity rules would add a total of 14 basis points to lending spreads. For the G-SIB surcharges, lending volumes were found to drop by 0.5-1%, while spreads would increase by 5-6 basis points. The costs of the OTC derivatives reforms (in terms of holding more capital and collateral) was estimated to translate in an increase of lending spreads by 8 basis points, while the median estimates of the impact of TLAC on lending rates range from 2.2 to 3.2 basis points (see Box 3 below).

Sources: <http://www.bis.org/publ/bcbs173.pdf>; <http://www.bis.org/publ/othp12.pdf>; <http://www.bis.org/publ/bcbs202.pdf>; <https://www.bis.org/publ/othp20.pdf>; and *FSB Summary of Findings from the TLAC Impact Assessment Studies* (November 2015).

Box 2: Findings from May 2015 FSB thematic review on supervisory frameworks for SIBs

The peer review, which was conducted in close collaboration with the BCBS, assessed progress towards enhancing supervisory frameworks and approaches for SIBs since the financial crisis, in particular for G-SIBs. It found that national authorities had taken significant steps to enhance supervisory effectiveness within their institutional frameworks. Authorities are using a broader and more sophisticated range of supervisory tools, which in turn contributes to a more forward-looking supervisory approach capturing both current and emerging risks. The scope of supervision has also been expanded to incorporate macroprudential and resolvability considerations. These changes are underpinned by enhanced dialogue between supervisors and the board and senior management of SIBs. Corporate governance and the development of recovery and resolution plans are common areas of focus across many jurisdictions.

More work, however, is needed to further improve and assess supervisory effectiveness. In particular, a key finding from the review is the importance of strengthening cross-border supervisory cooperation and building the mutual trust that is needed – in good times, but even more so in difficult times. Effectiveness could also be strengthened by establishing and implementing clear and transparent supervisory strategies and priorities. Communication with firms on these priorities, as well as on the outcomes from supervisory activities, including data requests, needs to be strengthened. One of the challenges to further progressing supervisory effectiveness is the need for authorities to effectively manage the volume of regulatory and supervisory changes, including by having sufficient budgetary resources and maintaining a skilled, capable, and experienced workforce. Drawing from the findings of the review, the report sets out recommendations targeting areas where more work is needed.

Box 3: Summary of findings from the TLAC impact assessment studies

To finalise the TLAC standard for G-SIBs, the FSB conducted a comprehensive impact assessment comprising a Quantitative Impact Study (QIS) carried out by the BCBS as well as micro- and macroeconomic impact analyses carried out by a group of experts chaired by the BIS. In addition, the FSB carried out a market survey to gauge the depth of markets for external TLAC-eligible instruments, as well as a study to evaluate historical losses and recapitalisation needs of large banks.

The results of the QIS show that shortfalls against the minimum TLAC requirement under the final TLAC standard¹³ range from €307 billion to €1,130 billion across all G-SIBs, and from €42 billion to €776 billion if EMDE-headquartered G-SIBs are excluded. According to the market survey, these shortfalls account for up to 1.4% of the global debt securities market and up to 25% of the G-SIB unsecured debt market.

The impact of TLAC on economy-wide funding costs is relatively contained. The estimated costs for G-SIBs of meeting the minimum requirement under the final TLAC standard are found to translate into increases in lending rates for the average borrower that range from 2.2 basis points to 3.2 basis points. The median long-run loss in the level of annual GDP ranges from less than 2 basis points to 2.8 basis points. Under the most conservative assumptions, the drop in annual GDP ranges between 10 and 15 basis points. The estimated macroeconomic benefits of TLAC exceed these costs. The central estimate suggests that TLAC generates benefits of 48 basis points of annual GDP. Under the most conservative assumptions, the estimated benefits are between 15 and 20 basis points of annual GDP.

Source: [FSB Summary of Findings from the TLAC Impact Assessment Studies](#) (November 2015).

Box 4: Findings from November 2015 FSB thematic peer review on trade reporting

The peer review, which was conducted in consultation with CPMI-IOSCO, evaluated progress by FSB jurisdictions in achieving the G20 commitment that all OTC derivatives transactions be reported to TRs.

The peer review found widespread legal barriers to reporting information to a TR pursuant to the reporting requirements of a foreign jurisdiction. In some cases, legal barriers prohibit reporting counterparty-identifying information, while in other cases they prohibit reporting any information about a trade; in many of these cases, however, mitigants are available (such as through obtaining counterparty consent). Restrictions to effective access for relevant domestic authorities are evident within some jurisdictions, and there are very few effective arrangements established for cross-border access by foreign authorities to TR-held data. FSB member jurisdictions have agreed that they should remove legal barriers to reporting complete information by June 2018, that masking of counterparty-identifying data be discontinued by end-2018 once barriers to reporting are removed, and that by June 2018 all jurisdictions should have legal frameworks in place to permit access to data held in a domestic TR by authorities (whether domestic or foreign), on the basis of these authorities' mandates and in accordance with their domestic regulatory regimes.

The peer review also found reporting of transactions to TRs is not yet comprehensive in all FSB jurisdictions, and that the usefulness of TR data is limited by data quality issues (including formatting, completeness and accuracy of data). There are differences in the details of reporting requirements among TRs and jurisdictions that make it challenging to aggregate or compare data from different sources. There are several work streams underway that, once completed and adopted, are expected to address issues in this area.

¹³ 16% of risk-weighted assets (RWAs) or 6% Exposure Measure (EM) in 2019, rising to 18% RWA or 6.75% EM in 2022.

Box 5: Emerging Markets Forum

The FSB held an Emerging Markets Forum in March 2015 to identify and discuss issues of importance to EMDEs that the FSB should address. The Forum was attended by EMDE members of the FSB and its Regional Consultative Groups as well as by SSBs and international financial institutions.

The discussion centred on three main aspects:

- implementation challenges for EMDEs – for example, capacity constraints and the cost of developing infrastructure associated with OTC derivatives reforms in countries where derivatives markets are small or still at an early stage of development, as well as the nature of and differences in recognition/equivalence requirements among major financial centres that can lead to complex and time-consuming bilateral recognition processes between these jurisdictions and EMDEs;
- potential impact on EMDEs from implementation of reforms by other FSB members – for example, with respect to calculation of risk weights for sovereign exposures under the internal ratings-based approach that is applied by global banks to assets held by their foreign subsidiaries; and
- other issues of relevance for EMDEs, such as macroprudential policies, concerns about reduced availability of correspondent banking services, and continued efforts to make local capital markets deeper and more resilient as well as sovereign debt restructuring processes.

The FSB, SSBs and international financial institutions are following up on many of the issues raised in the Forum. For example, the FSB has issued guidance on cooperation and information sharing with host authorities not represented on CMGs in jurisdictions where a G-SIFI has a systemic presence; the BCBS is reviewing the existing regulatory treatment of sovereign risk within the capital framework and will consider potential policy options; and trends in foreign correspondent banking services by large international banks in EMDEs is the focus of considerable attention by the FSB and other international bodies.

Annex 2: Implementation monitoring forward planner

Reform area	Monitoring body	Monitoring activity	Expected publication date
Building resilient financial institutions	BCBS	<ul style="list-style-type: none"> • Progress report on timely adoption of Basel III framework • Report to G20 Leaders on Basel III implementation • RCAP assessments of capital and liquidity standards for Argentina, Indonesia, Korea, Russia and Turkey • Follow-up assessment reports for Australia, Canada, EU and US • Follow-up assessment reports for Hong Kong, India, Mexico, Saudi Arabia and South Africa • RCAP assessments of liquidity standards for Japan, Singapore, EU, US, Switzerland, China, Brazil, Australia, Canada 	<ul style="list-style-type: none"> • 2016H1, H2 • 2016Q3 • 2016 • Mar 2016 • Mar 2017 • 2016-17
	FSB	<ul style="list-style-type: none"> • Industry workshop on compensation practices • <i>Fifth progress report on compensation practices</i> 	<ul style="list-style-type: none"> • 2016 • 2017
Ending too-big-to-fail	FSB	<ul style="list-style-type: none"> • Resolution progress report to the G20, including results of second Resolvability Assessment Process • Thematic peer review on resolution regimes 	<ul style="list-style-type: none"> • 2016H2 • 2016Q1
	BCBS	<ul style="list-style-type: none"> • Report on implementation of BCBS principles for effective risk data aggregation and risk reporting • RCAP assessment of the G-SIB framework and review of the D-SIB framework for China, EU, Japan, Switzerland and US 	<ul style="list-style-type: none"> • TBD • 2016H2
	IAIS	<ul style="list-style-type: none"> • Thematic self-assessment and peer review on Insurance Core Principle 12 (winding up and exit from the market) 	<ul style="list-style-type: none"> • 2017H2
Transforming shadow banking into resilient market-based finance	FSB	<ul style="list-style-type: none"> • Shadow banking progress report • Thematic peer review on implementation of FSB policy framework for other shadow banking entities • Global shadow banking monitoring report 2016 	<ul style="list-style-type: none"> • 2016Q3 • 2016H1 • 2016Q4
	IOSCO	<ul style="list-style-type: none"> • <i>Follow-up peer reviews on implementation of IOSCO recommendations on money market funds and securitisation</i> 	<ul style="list-style-type: none"> • 2016
Making derivatives markets safer	FSB	<ul style="list-style-type: none"> • Eleventh progress report on implementing OTC derivatives market reforms • Report on jurisdictions' planned steps to implement trade reporting peer review recommendations 	<ul style="list-style-type: none"> • 2016Q3 • 2016Q3
	CPMI-IOSCO	<ul style="list-style-type: none"> • Implementation monitoring of the Principles for Financial Market Infrastructures – level 1/2/3 assessment reports 	<ul style="list-style-type: none"> • 2016
Other reform areas	FSB	<ul style="list-style-type: none"> • Country peer reviews of India, Brazil, Japan and France 	<ul style="list-style-type: none"> • 2016
		<ul style="list-style-type: none"> • <i>Thematic peer review on macroprudential policy frameworks and tools</i> 	<ul style="list-style-type: none"> • TBD
		<ul style="list-style-type: none"> • Progress report in reforming major interest rate benchmarks • Implementation Monitoring Network (IMN) survey on progress in other reform areas 	<ul style="list-style-type: none"> • Jul 2016 • 2016Q3
	IOSCO	<ul style="list-style-type: none"> • <i>Progress report on implementation of the recommendations in the second phase of the Data Gaps Initiative (with IMF)</i> 	<ul style="list-style-type: none"> • 2016Q3
		<ul style="list-style-type: none"> • Thematic review of the implementation of IOSCO's Principles for Financial Benchmarks by the Administrators of Euribor, Libor and Tibor 	<ul style="list-style-type: none"> • 2016
		<ul style="list-style-type: none"> • Thematic review of WM London 4pm Fix for three currency pairs against the IOSCO Financial Benchmarks Principles • Thematic review of the implementation of the IOSCO Recommendations regarding the Protection of Client Assets 	<ul style="list-style-type: none"> • 2016
IAIS	<ul style="list-style-type: none"> • Thematic self-assessment and peer review on solvency-related Insurance Core Principles 	<ul style="list-style-type: none"> • 2016 	
	<ul style="list-style-type: none"> • Thematic self-assessment and peer review on Insurance Core Principle 24 (macroprudential surveillance) 	<ul style="list-style-type: none"> • 2016 	

Note: Some monitoring activities are ongoing and will be completed in 2016. Items in italics are subject to confirmation.

Annex 3: Sources of information

Basel III

- [Report to G20 Leaders on implementation of the Basel III regulatory reforms](#), November 2015 (BCBS)
- [Finalising post-crisis reforms: an update - A report to G20 Leaders](#), November 2015 (BCBS)
- [Ninth progress report on adoption of the Basel regulatory framework](#), October 2015 (BCBS)
- [Basel III monitoring report](#), September 2015 (BCBS)
- [RCAP jurisdiction-level assessments of final Basel III regulations](#) (BCBS)
- [RCAP assessments of the consistency of regulatory outcomes](#) (BCBS)

Compensation practices

- [Fourth progress report on compensation practices](#), November 2015 (FSB)

TBTF

- Second peer review on resolution regimes, forthcoming (FSB)
- [Principles on Loss-absorbing and Recapitalisation Capacity of G-SIBs in Resolution and Total Loss-absorbing Capacity \(TLAC\) Term Sheet](#), November 2015 (FSB)
- [Report to the G20 on progress in resolution](#), November 2015 (FSB)
- [Progress report on the implementation of principles for effective supervisory colleges](#), July 2015 (BCBS)
- [Peer review on supervisory frameworks and approaches for SIBs](#), May 2015 (FSB)
- [Progress in adopting the principles for effective risk data aggregation and risk reporting](#), January 2015 (BCBS)

Shadow banking

- Peer review on implementation of the FSB framework for other shadow banking entities, forthcoming (FSB)
- [Global Shadow Banking Monitoring Report 2015](#), November 2015 (FSB)
- [Transforming Shadow Banking into Resilient market-based Finance](#), November 2015 (FSB)
- [Peer review of implementation of incentive alignment recommendations for securitisation](#), September 2015 (IOSCO)
- [Peer review of regulation of money market funds](#), September 2015 (IOSCO)

OTC derivatives

- [Peer review on reporting of OTC derivatives to trade repositories](#), November 2015 (FSB)
- [OTC Derivatives Markets Reforms: Tenth Progress Report on Implementation](#), November 2015 (FSB)
- [Final report of the Task Force on Cross-Border Regulation](#), September 2015 (IOSCO)
- [OTC Derivatives Markets Reforms: Ninth Progress Report on Implementation](#), July 2015 (FSB)
- [Implementation monitoring of the Principles for Financial Market Infrastructures](#) (CPMI-IOSCO)

Other reform areas

- [National/regional responses to the Implementation Monitoring Network \(IMN\) survey](#) (FSB)
- Progress report on implementation of the EDTF Principles and Recommendations, November 2015 (EDTF)
- [Progress report on the Global LEI System and regulatory uses of the LEI](#), November 2015 (LEI ROC)
- [Foreign Exchange Benchmarks: Report on progress in implementing the September 2014 recommendations](#), October 2015 (FSB)
- [The Financial Crisis and Information Gaps: Sixth Progress Report on the Implementation of the G-20 Data Gaps Initiative](#), September 2015 (Staff of the IMF and FSB Secretariat)
- [Progress in Reforming Major Interest Rate Benchmarks – interim report](#), July 2015 (FSB)
- [Review of the Implementation of IOSCO's Principles for Financial Benchmarks](#), February 2015 (IOSCO)

Adherence to international financial standards

- Information on [FSB members' commitments to lead by example](#) (FSB)
- [Initiative on international cooperation and information exchange](#) (FSB)
- [MMoU Concerning Consultation and Cooperation and the Exchange of Information](#) (IOSCO)

Emerging Market and Developing Economies (EMDEs)

- [Monitoring the effects of agreed regulatory reforms on EMDEs](#), November 2014 (FSB)
- [Impact and implementation challenges of the Basel framework for emerging market, developing and small economies](#), Basel Consultative Group, BCBS Working Paper No 27, November 2014 (BCBS)

Abbreviations

AUM	Assets under management
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CCPs	Central counterparties
CET1	Common Equity Tier 1 Capital
CMG	Crisis management groups
CGFS	Committee on the Global Financial System
CoAgs	Cross-border cooperation agreements
CPMI	Committee on Payments and Market Infrastructures
CRAs	Credit rating agencies
D-SIBs	Domestic Systemically Important Banks
EM	Exposure Measure (TLAC)
EMDEs	Emerging Market and Developing Economies
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
GDP	Gross Domestic Product
G-SIBs	Global Systemically Important Banks
G-SIFIs	Global Systemically Important Financial Institutions
G-SIIs	Global Systemically Important Insurers
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
LCR	Liquidity Coverage Ratio (Basel III)
LEI	Legal Entity Identifier
MMFs	Money market funds
NAV	Net asset value
NSFR	Net Stable Funding Ratio
OFIs	Other Financial Institutions
OTC	Over-the-counter derivatives
QIS	Quantitative Impact Study
RCAP	Regulatory Consistency Assessment Programme (BCBS)
RWAs	Risk-weighted assets
SSBs	Standard-setting bodies
SIFIs	Systemically Important Financial Institutions
TBTF	Too-big-to-fail
TLAC	Total Loss-Absorbing Capacity
TRs	Trade repositories