Call for evidence on cumulative impact of regulation

Supplementary evidence note

January 2016

This note provides supplementary material on the cumulative impact of EU financial regulation in response to the Commission's call for evidence. It should be read in conjunction with AFME's formal submission to the call for evidence.

This note also provides evidence to help answer some basic contextual questions which the Commission must consider in the course of its regulatory review. These questions are:

- How much of the regulatory reform programme is in place, and what is still to come?
- Has the financial system been made safer, and in what ways?
- What should be the overarching policy priorities for any future reforms and reviews?

Given AFME's focus, we consider these questions from the perspective of the EU wholesale markets. The Commission may need to reach a separate set of judgments about the retail markets.

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1 State of play in implementing the EU regulatory reform programme

This section considers the progress which has been made in implementing the main elements of the regulatory reform programme for Europe's wholesale markets. There are two sets of broad distinctions to be made in surveying progress. These distinctions are between:

i. reforms to implement core elements of the G20 reform programme *versus* specific European initiatives; and
ii. prudential *versus* markets reforms (while acknowledging that some prudential reforms have major market impacts, and vice versa).

G20 regulatory reform programme

The G20 reform programme was outlined in the conclusions[1] of the Pittsburgh G20 summit in September 2009. The main elements of the reform programme, which all G20 leaders agreed to implement, are characterised by the Financial Stability Board (FSB) as:

- building resilient financial institutions;
- ending too-big-to-fail;
- making derivatives markets safer; and
- transforming shadow banking into resilient market-based finance.

In November 2015, the FSB published its first annual report on the implementation and effects of G20 the reform programme.[2] The FSB's overview of implementation (which is included as an appendix to this note) shows that European members of the G20 have in place almost all elements of the reform programme. Two elements are noted as still in progress in Europe: margin rules for OTC derivatives and reforms to money market funds.

Substantively, Europe has implemented the G20 reforms through:

- CRR and CRD4 – which transpose the Basel III framework[3];
- BRRD – which establishes a framework for bank resolution;
- EMIR – which transposes the reforms to OTC derivatives; and
- CRD3 – which implemented G20 principles on remuneration.

The timetable for preparing and implementing these reforms is outlined in the tables on the next page. However it should be noted that notwithstanding formal regulatory timetables for implementation (e.g. for Basel III), market expectations and industry implementation typically move ahead much more quickly. In the case of Basel III, implementation is phased in gradually until 2019 but in practice firms are already expected to report, manage and comply with the new standard.

Separately, and as noted below, there are a number of further prudential reforms[4] which are being overseen by the BCBS. Some of these reforms fall outside the scope of both Basel III and the original G20 mandate, including on:

- calibration for simple, transparent and comparable securitisations:
- capital floors: design of a framework based on standardised approaches;

[1] See http://www.g20.utoronto.ca/2009/2009communique0925.html#system
[2] See http://www.financialstabilityboard.org/wp-content/uploads/Report-on-implementation-and-effects-of-reforms-final.pdf
[3] Details on Basel III scope are at: http://www.bis.org/bcbs/basel3/b3summarytable.pdf
[4] See https://www.bis.org/bcbs/publ/d344.pdf

- interest rate risk in the banking book; and
- regulatory treatment of sovereign risk.

It is not yet clear whether or not this combined package will amount to a new 'Basel IV'.

Implementation of key regulatory reforms at EU level

Table 1 below provides an overview of the key measures affecting prudential regulation in Europe which have been put in place since the financial crisis. The overview concerns mainly prudential reforms in the banking sector although Solvency 2, a key reform insurance reform, is also included.

Table 1. Overview of key prudential reforms in Europe

PRUDENTIAL Dossier	Objective	2010 Q1 Q2 Q3 Q4	2011 Q1 Q2 Q3 Q4	2012 Q1 Q2 Q3 Q4	2013 Q1 Q2 Q3 Q4	2014 Q1 Q2 Q3 Q4	2015 Q1 Q2 Q3 Q4	2016 Q1 Q2 Q3 Q4	2017 Q1 Q2 Q3 Q4	2018 Q1 Q2 Q3 Q4
CRD3	Implement new bank capital and remuneration rules									
Solvency 2	Insurance prudential framework									
CRR / CRD4*	Implement Basel III in Europe									
BRRD*	EU framework for bank recovery and resolution									
SSM	Establish single supervisor for banking union									
SRM	Establish single resolution authority for banking union									
BSR	Structural separation of banks' trading activities									
EDIS	Single European deposit insurance fund									
Leverage**	Set binding ratio on banks' leverage									
TLAC**	Implement FSB standard on loss absorbing capital									
FRTB**	Prudential calibration of trading book assets									

Level 1 | L2 / lead in | In force | Review

Notes:

* For the CRR and BRRD, the (Level 2) process of calibrating technical standards will continue until at least 2017.

** Dates for full implementation of the leverage ratio, TLAC and FRTB based on latest available information. TLAC fully in force on 1 January 2019.

The overview of prudential reforms shows that:

- the Basel III framework is largely implemented in Europe, with CRD4/CRR coming into force in January 2014 and BRRD (the resolution component) taking effect in January 2016;
- Europe has bolstered its prudential framework by establishing banking union, comprising the single supervisor and single resolution mechanism. A draft regulation for a European Deposit Insurance Scheme (EDIS) was published in November 2015;
- major prudential standards on leverage, loss absorbing capital and trading book assets have been developed at Basel level, subsequent to the CRR package, and will have to be implemented in Europe over the next 2-3 years; and
- In addition to the comprehensive prudential reforms outlined above, the EU has still to decide whether and how to enact any pan-European reform to bank structures.

Table 2 below provides an overview of the key measures affecting wholesale market regulation in Europe which have been put in place since the financial crisis.

Table 2. Overview of key markets reforms in Europe

MARKETS		2010				2011				2012				2013				2014				2015				2016				2017				2018			
Dossier	Objective	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
AIFMD	Regulatory framework for alternative investors																																				
SSR	Restrict short-selling of some securities and swaps																																				
EMIR	Framework for central clearing of derivatives trades																																				
CSDR	Framework for central securities depositories																																				
MIFID 2*	Reform market structure and trading rules																																				
MAR	New rules to combat market abuse																																				
SFT	Greater transparency for securities financing activity																																				

Level 1 | L2 / lead in | In force | Review

Notes:

* ESMA has proposed delaying implementation of some parts of MiFID 2 until 1 January 2018.

The overview of markets reforms shows that:

- a single rulebook has already been implemented in Europe for alternative investments (AIFMD) and for OTC derivatives (EMIR);
- the updated single markets rulebook (MiFID 2) is not yet in force, and implementation may be delayed beyond January 2017;
- the revised market abuse framework (MAR) is also not yet in force; and
- the proposed 'shadow banking' regulation – on securities financing transactions – is still awaiting political agreement at Level 1, and hence its implementation it some way off.

Broadly, the following conclusions can be drawn about the state of play in implementing the EU regulatory reform programme:

- substantial prudential reforms to Europe's banking system have already been enacted and are in force;
- significant reforms are still to be fully implemented as part of the Basel III package – notwithstanding the potential components of 'Basel IV' which are now in development;
- Europe has a new single rulebook in force for some important areas of the wholesale markets, namely alternative investments and derivatives; however;
- large elements of the new regulatory framework for trading activity – particularly MiFID 2, SFTR and MAR – are not yet in force.

The general conclusion can be drawn that large elements of the markets reform programme are not yet in place. Thus, it is too early to assess evidence of the impact of such reforms, and only tentative conclusions can be drawn about potential impact. Much firmer conclusions can be drawn about the impact of prudential reforms enacted thus far.

2 Structural change in the wholesale financial markets

This section considers structural changes which have taken place in Europe's wholesale financial markets. These structural changes are driven partly by the effect of the regulatory reforms surveyed in section 1, and also by banks' own commercial responses to the new regulatory, market and economic environment.

The analysis considers developments in:

a) deleveraging of banks' balance sheets;
b) capacity in the wholesale markets;
c) banking sector returns and cost of capital.

Deleveraging of banks' balance sheets

Banks have strengthened their balance sheets through a combination of asset reduction and capital increase. According to EBA statistics, European banks have complied with the CET1 ratios with an increase of around 45% in CET1 capital from June 2011 to December 2014, and a decrease in RWAs of 20%.

Higher capital requirements and tougher risk-weighting have improved the soundness of banks' balance sheets but reduced the lending capacity of the banking sector. As consequence of regulation, Banks now hold fewer assets against capital to support their lending activities. According to PwC, using statistics from five representative banks that report both RWAs and total assets at a divisional level in their financial statements, the amount of total assets supported by capital in the investment bank sector fell by one-third between 2009 and 2013 (vs. one-fifth estimated for the banking industry).

Capital regulations may have diminished banks' capacity to support growth. Ex-ante estimates of the impact of Basel III provisions suggest there are relevant costs to European annual GDP growth. According to a wide range of studies conducted between 2010 and 2014, the full implementation of capital and liquidity provisions of Basel III would have a long-term negative impact of between 0.2% and 0.08% on European annual GDP growth (excluding outlier estimates, see Figure 2.2)

The impact on GDP is based on bank's contribution to growth in providing loans to the wider economy (credit channel).

According to these studies, the full implementation of Basel III would increase credit spreads by between roughly 66 bps and 16 bps in Europe (excluding outlier estimates, see Figure 2.2). Other studies suggest that a 1pp increase in the capital requirement, decrease loan volumes between 0.7 and 3.6% (FSB Macroeconomic Assessment Group, 2010), between 5.7 to 8.0% (Aiyar, Calomiris and Wieladek, 2014), 3.5% (Bridges et. al, 2014), 4.5% (Noss and Toffano, 2014), and between 1.2% to 4.5% in the short-run according to DNB (2014).

These impact assessments highlight the wider impact of recently approved regulations on the capacity of banks to support job creation and finance the economy, in a context of slow economic recovery in Europe.

New capital requirements have long-term benefits to the stability of the economy and the soundness of the financial system as a whole, but excessive requirements could make costs outweigh the benefits of reform. The revision of capital requirements have made the financial system more robust by improving the capacity of the banking sector to absorb shocks and by reducing the probability that financial shocks occur. However, the net economic benefits of capital requirements are hardly positive when regulatory ratios are excessively high and induce an excessive burden to the contribution of finance to the economy. The BIS estimates that the incremental economic benefits decrease the higher the capital ratio,

where negative net benefits are found when capital ratios are above a certain excessive threshold%[5]. That is, excessive ratios can make costs of higher capital requirements (e.g. higher borrowing costs and lower contribution of the banking sector to the economy) surpass the risk mitigation benefits of reform.

2.2 Basel III Impact on Credit and GDP Growth[6]

	Impact on credit spreads (bps)		Impact on annual GDP growth (%)	
	Europe	U.S.	Europe	U.S.
IIF 2012-2019	328	243	-0.4	-0.1
IIF 2011-2015	291	468	-0.6	-0.6
OECD 5 years transition	54	64	-0.23	-0.12
BIS Long-term (capital) [1, 2, 3]	52	52	-0.07	-0.03
BIS Long-term (liquidity) [3, 4]	25	25	-0.03	-0.03
BIS Long-term (combined) [3, 5]	66	66	-0.08	-0.04
IMF gross total	31	48	N.A.	N.A.
IMF net total[6]	17	28	N.A.	N.A.
ŠÚTOROVÁ and TEPLÝ	54	N.A.	N.A.	N.A.
IMF (2011)	15.8	17	N.A.	N.A.

[1/] BIS estimates an increase in credit spread of 13 bps for each one point increase in the ratio of Tangible Common Equity to RWAs, but does not estimate the total required change in that ratio. For broad consistency with the IIF and OECD figures, a 4 point change in the ratio is assumed.

[2/] U.S. and European figures for needed capital increases are assumed to be the same for this table.

[3/] BIS estimates the permanent, steady-state change in level of GDP. For comparison with the other studies, the cost is spread over 8 years.

[4/] BIS does not provide a breakdown by region on the credit spread effects of liquidity changes, so global figures are used for both regions.

[5/] There are synergies between the capital and liquidity requirements, reducing the combined effects.

[6]/ Net of expense cuts, assumed capital mitigating actions and other aggregate adjustments

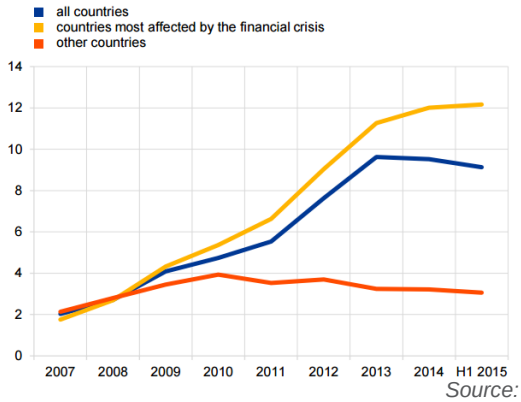
In a context of deleveraging, asset quality indicators have started to improve in the euro area with a reversing trend of NPLs. According to the ECB, impaired loan ratios (% of total loans) suggest a modest improvement in the first half of 2015 (see Graph 2.3), although with divergence between countries most affected by the sovereign crisis and other countries. The median NPL ratio of significant banking groups decreased to around 12% at end-June 2015 from 13.5% six months earlier.

The coverage of non-performing loans by loan loss reserves improved slightly in the first six months of 2015 (from 47% to 48%), although with a slight decrease over between 2H14 and 1H15 (Figure 2.4).

The ratio of non-performing loans, however, remains high and may be preventing a more accelerated recovery. According to the IMF Article IV review of the euro area, "high levels of NPLs and debt have held back bank lending and investment, limiting the pass-through of easier financial conditions."

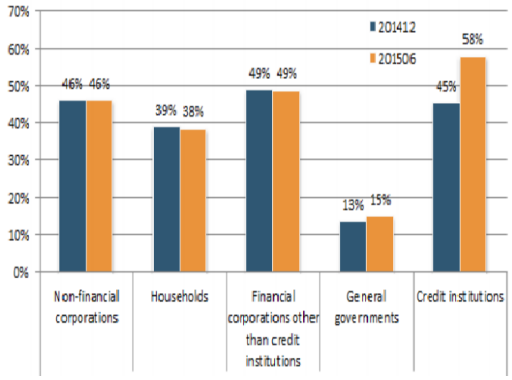
[5] See BIS "the long-term economic impact of higher capital levels". See here.
[6]The first three studies were summarised by IMF "Estimating the Costs of Financial Regulation", available here. The OECD study refers to "Macroeconomic Impact of Basel III", available here. IMF (2011) refers to "Bank Behavior in Response to Basel III: A Cross-Country Analysis", available here.

2.3 Impaired loan ratios for euro area significant banking groups (% of loans)



Source: ECB

2.4 EU aggregate coverage ratio for NPLs per type of counterparty



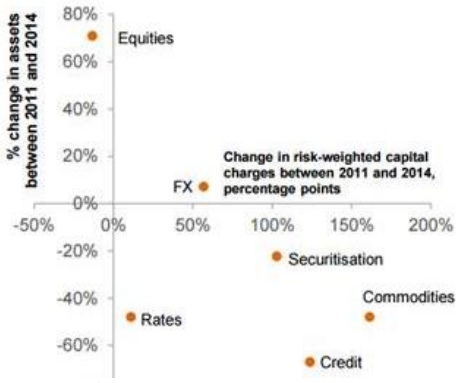
Source: EBA

The IMF also argues that "NPL disposal can free up large volumes of regulatory capital and generate significant capacity for new lending", calculating that freeing-up capital disposed for NPL could unlock new lending of between €167–€522 billion, provided there is corresponding demand for new loans.

Capacity in the wholesale markets

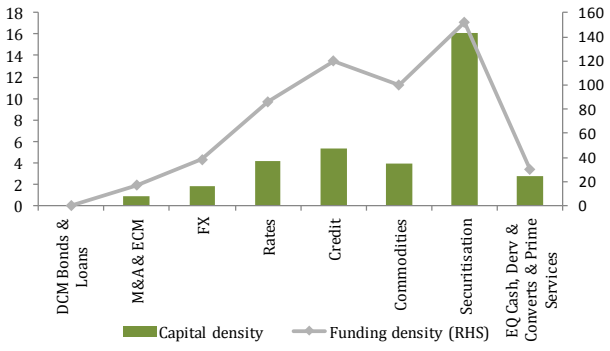
There is a correlation between reduction on assets and changes in risk-weighted capital charges. PwC[7] found that the degree of deleveraging (reduction in assets) is correlated with the change in risk-weighted capital charges by area of capital markets activity. PwC found that business lines that have experienced a relative increase in capital intensity have also experienced higher levels of deleveraging (see Figure 2.5), with credit, securitisation and commodities as the areas with largest percentage change in assets between 2011 and 2014.

2.5 Degree of deleveraging in relation to change in risk-weighted capital charges by area of capital markets



Source: PwC

2.6 Capital density (CET1 to revenues) and funding density (liabilities ex equity to revenues)



Source: Tricumen, PwC analysis

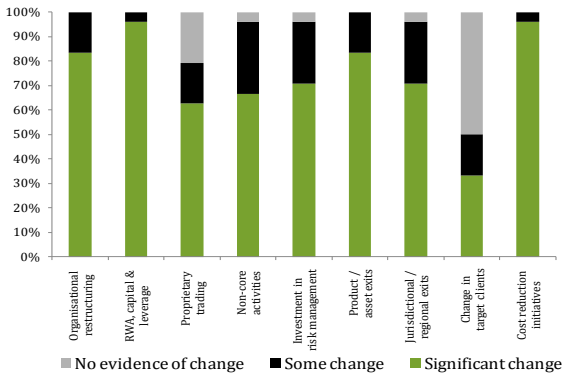
[7] PwC "Global financial liquidity study", 2015

Fixed income activities are funding and capital intensive (Figure 2.6). Fixed income, currencies and commodities (FICC) business lines operate through OTC markets and rely substantially on the support of banks' balance sheets (as opposed to exchange-traded instruments). According to PwC, it is therefore expected that FICC business lines are likely to be most heavily impacted by reform and the increased risk-weighted capital charges, particularly securitisation, which as will be later discussed in section 4, has been particularly affected by the regulatory programme compared with other asset classes.

In response to regulatory reforms, banks have substantially changed their structures from a business line perspective. Reviewing publically available sources, PwC[8] found evidence of substantial structural, operational and financial changes within banks. Banks have changed and adapted to the new regulatory and business circumstances (see Figure 2.7). Above 60% of the surveyed banks, in response to the crisis, have implemented significant changes in a wide range of areas, encompassing organisational structures; RWAs and capital; proprietary trading; changes to non-core activities; investment in risk management; product or asset exits; jurisdictional exits; and cost reduction initiatives. The only item were 50% or more of respondents suggested no evidence of change was on "Change in target clients."

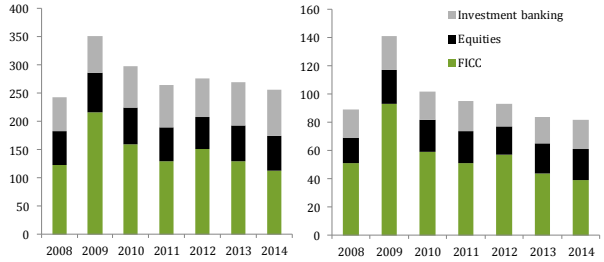
FICC business lines in Europe have been particularly affected by reform. According to PwC, FICC is the fastest falling segment of investment banking, where banks are selectively exiting, retrenching or re-pricing in specific FICC markets. The FSB in a recent policy report[9] highlighted that "for advanced economy G-SIBs, there has been a pullback from trading activities", consistent with the observed downward trend in FICC activities as reported by PwC (figure 2.8).

2.7 Banks structural and operational changes by area (% of banks)



Source: PwC

2.8 Capital markets revenue pools, Global (left) and EMEA (right). $bn



Source: PwC

Substantial structural changes have been observed in the global participation of FICC business lines on total revenue pools (figure 2.8). The structural change has been more pronounced in the European region. According to PwC with *Coalition* data, the participation of FICC business lines has decreased from 61.6% in 2009 to 44% in 2014 relative to total revenue. In the EMEA region the decrease in FICC has been more pronounced, with a decrease in participation in total revenue from 66% in 2009 to 48% in 2014.

[8] PwC, "Impact of bank structural reforms in Europe", 2014
[9] FSB, Implementation and effects of the G20 financial regulatory reform, 2015. Available here.

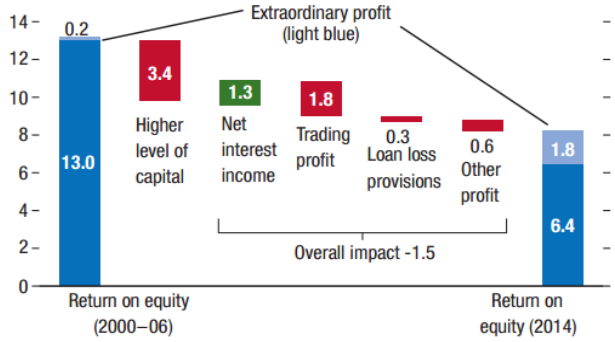
Banking sector returns and cost of capital

Banks' profitability has structurally changed. Banks' Return on Equity (RoE) ratios have decreased post-crisis compared to their performance in the period 2000-2006. The decrease can be attributed to factors of both cyclical and structural nature.

According to the IMF's October Financial Stability Report[10], banks located in advanced economies reported a RoE of 13% in the period 2000-2006, comparable with a RoE of 8% in 2014. Among the structural factors affecting the aggregate performance are the higher levels of capital, and lower trading profits (in part due to restrictions to proprietary trading), decreasing banks' profitability by 3.4 pp and 1.8 pp respectively in their contribution to RoE (Figure 2.9).

Cyclical factors such as the sluggish performance of private demand in Europe and other large developed economies can further explain the decrease of banks' RoE. However, it is unclear when the cyclical factors will reverse and the subsequential impact on banks' profitability. According to market polls data[11], market analysts are expecting on average of 9.2% RoE for EU GSIBs in 2018FY, presumably when the European economy should have begun a period of more robust growth.

2.9 Drivers of the decline in advanced economy return on equity (percentage points)

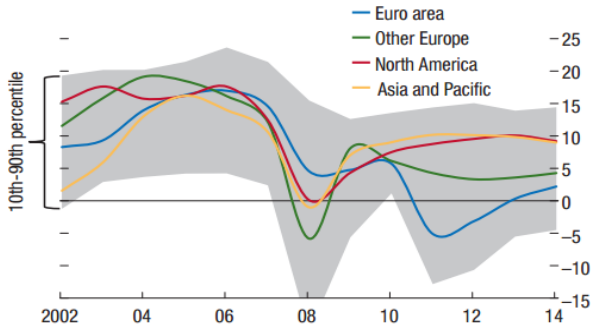


Source: Bloomberg and IMF calculations

European banks' profitability was hit hard, with the Eurozone financial sector experiencing a double dip. Figure 2.10 below highlights the impact of the Eurozone crisis on the health of the banking sector. The IMF shows that banks returned to positive profits in all other regions after 2009, whereas it took until 2014 for Eurozone banks to return to positive but very low profitability overall.

[10] IMF, "Global Financial Stability Report", October 2015
[11] Average of 13 of the 14 EU GSIBs for which 2018FY ROE estimates were available. Data retrieved on 10/12/2015.

2.10 Bank return on equity



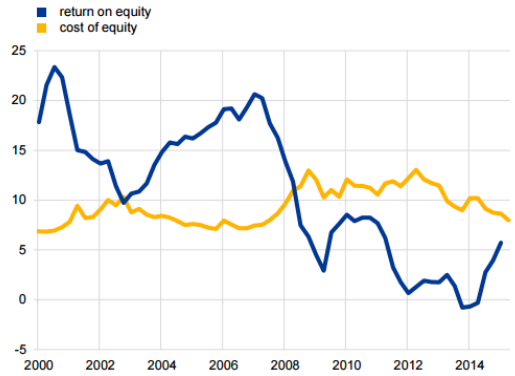
Source: IMF estimations with Bloomberg and JP Morgan data

Euro area banks' cost of equity still exceeds their return on equity, making difficult for banks to support growth. According to the ECB, the negative gap between the cost and return on equity "is not sustainable in the long run since it implies that equity investors in banks require a higher return than the return banks are able to deliver", which in turn make it difficult for banks to attract capital and finance growth (Figure 2.11)

According to the EBA[12], EU banks aggregate RoE improved during 1H2015, mainly driven by larger net income coming from trading activities and lower impairments, and partially explained by the seasonality of impairments. Nevertheless, the EBA considers that profitability remains weak by historical standards and relative to banks' estimated cost of equity (CoE).

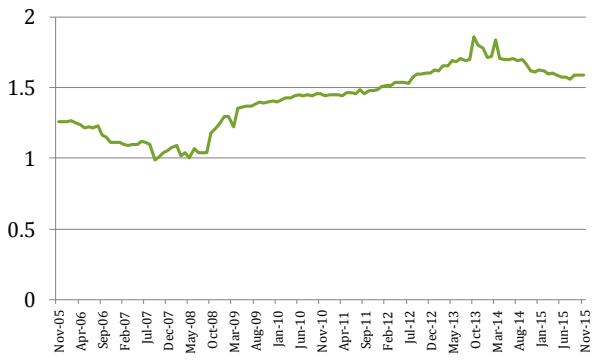
Equity betas, one of the components of banks' CoE, remain above pre-crisis levels. The beta component of the cost of equity has structurally increased for European banks after the global financial crisis (2008-2009), and continued to grow until levels close to 1.7, with a recent decline to 1.6 which however is significantly above the pre-crisis level (1.1). Since 2012, the gap between cost and return on equity has narrowed, in part explained by the marginal reduction in equity betas, loose monetary policy conditions in the euro area which have decreased risk-free rates, and recent overall favourable equity market conditions (Figure 2.12).

2.11 Cost of equity and return on equity of euro area banks



Source: ECB calculations

2.12 EU GSIBs equity beta



Source: Datastream

[12] EBA, "2015 EU-wide transparency exercise", November 2015

3 Improvements in financial stability in Europe

This section considers how financial stability in Europe has improved since the financial crisis. The improvements achieved to date result from both the regulatory reforms which have been enacted (outlined in section 1) and structural change in the wholesale markets (examined in section 2). The discussion in this section reviews:

- banks' progress on key stability metrics – capital, liquidity and leverage;
- market measures of financial system stability; and
- recent assessments of improvements in financial stability.

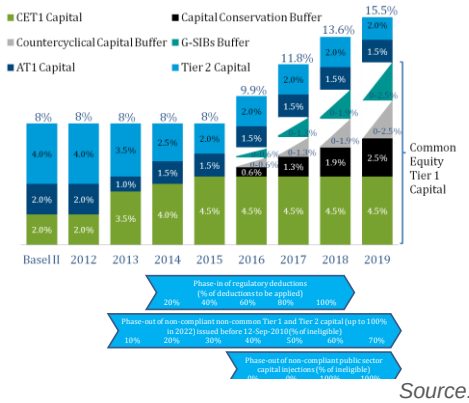
Banks' progress on key stability metrics

Capital requirements and compliance with CRDIV

In 2013 the European Union adopted the CRD IV legislation implementing the Basel III accord. The legislation represents a substantial increase in capital requirements, seeking to enhance banks' soundness and capacity to absorb real and financial shocks. The CRD IV legislation includes a number of transitional measures, which facilitate financial markets and the real economy a smooth adjustment to the new regulatory landscape.

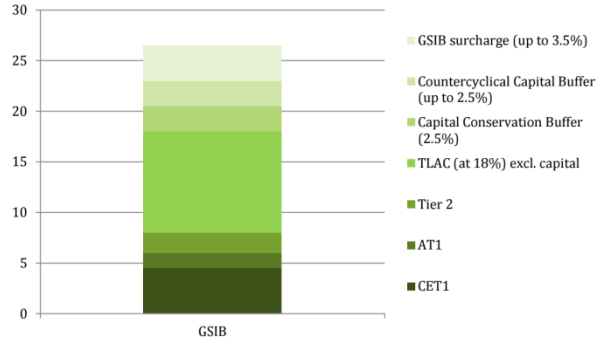
Banks are due to increase by 2019 their total capital ratios from 8% of risk-weighted assets, to a range of between 10.5% and 15.5% depending on factors such as the size of the bank (G-SIB buffer) and the countercyclical buffer stipulated by the national competent authority in which the bank is located. The minimum CET1 ratio shall increase in turn from 2% of risk weighted assets to a ratio of between 7% and 12%, depending on the above mentioned capital buffers (Figure 3.1).

3.1 CRDIV capital rules implementation timeline



Source: AFME

3.2 Minimum TLAC and capital requirements (%RWAs), excluding pillar II



Source: AFME

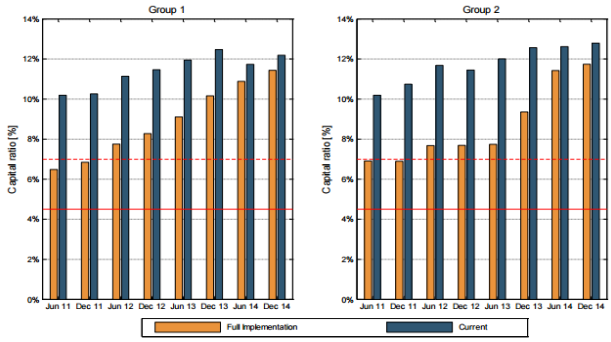
In addition to the CRDIV rules, GSIBs shall comply with the G20 agreed capital rules on Total Loss-Absorbing Capacity (TLAC). TLAC is an additional requirement to minimum regulatory capital requirements. Capital that counts towards satisfying capital requirements may also count towards satisfying TLAC requirements (subject to certain conditions), but Basel III regulatory capital buffers must be met on top of the TLAC minimum RWA requirement, allowing buffers to be utilised without breaching TLAC (see Figure 3.2).

Capital buffers such as the GSIB surcharge, capital conservation buffer and counter-cyclical capital buffer are required to be met on top of the RWA TLAC requirements. Accordingly the total capital and loss absorbing capacity requirements for a GSIB are likely to be significantly higher.

The EU GSIBs have substantially improved their capital positions in compliance with the Basel III framework and the CRDIV regulation. The weighted average CET1 ratio of the EU GSIBs has increased from 10% in 2013 to 11.5% in September 2015. Likewise, banks with Tier 1 capital above €3bn (Group 1 in Figure 3.3) have improved their CET1 ratios from around 6% in June 2011 to 12% in December 2011. These ratios are comparable with the minimum required in 2015 of 4.5% and the end-point ratios expected to apply in full in 2019 of between 7% and 12%.

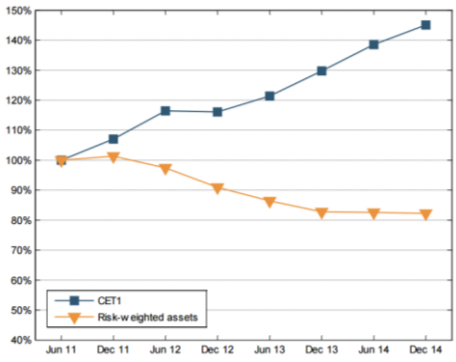
The improvement in capital ratios is not exclusive of the largest financial institutions. According to the September 2015 EBA Basel III monitoring exercise[13], banks with Tier 1 capital below €3 bn (Group 2 in Figure 3.3) have also increased their capital ratios from around 7% in June 2011 to 11.4% in December 2014, suggesting the improved soundness from a capital perspective of all types of banks regardless their size.

3.3 Evolution of CET1 ratios over time[14]



Source: EBA

3.4 Evolution of CET1 versus RWA over time, Group 1 banks



Source: EBA

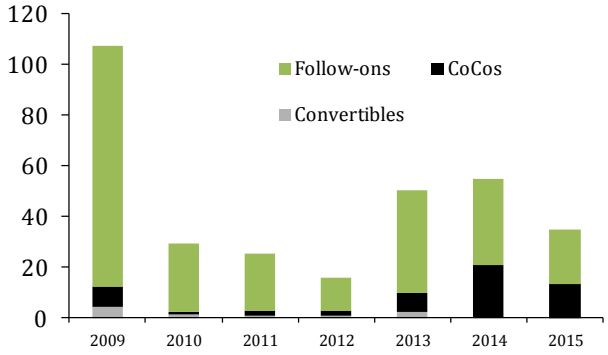
Banks have strengthened their balance sheets through a combination of asset reduction and capital increase. According to EBA statistics, banks with T1 capital above €3bn have increased on aggregate their CET1 capital by 45% from June 2011 to December 2014, and have reduced their RWAs by around 20% during the same period (Figure 3.4)

Since the crisis EU banks have raised around €318bn (see Figure 3.5) in fresh capital from the markets, of which €254bn is in equity and €64bn in CoCos and other convertible debt (in total about 2.3% of EU28 GDP at current prices). This estimate, however, does not take into account capital raised through adding internal generation, disposals and balance sheet shrinkage.

[13] EBA, "CRD IV-CRR/Basel III monitoring exercise report", September 2015
[14] Group 1 banks are banks with Tier 1 capital in excess of EUR 3 billion and which are internationally active. All other banks are categorised as Group 2 banks.

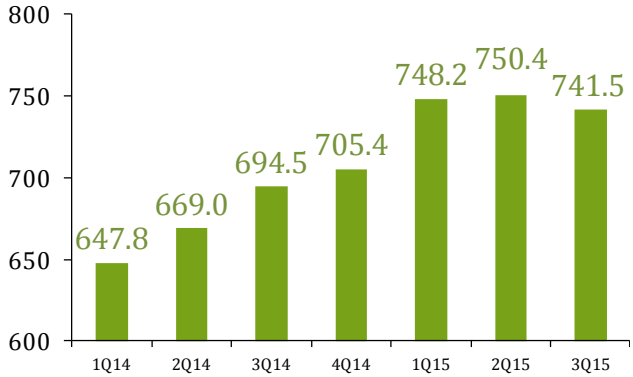
Specifically for the largest banks in the EU, EU GSIBs[15] have increased the amount of CET1 capital on a phased-in basis by €93 bn, from €647 bn in March 2014 to €741 bn in September 2015.

3.5 Fresh capital raised by EU 28 banks (€bn)



Source: Dealogic

3.6 EU GSIBs CET1 capital (phased-in, €bn)



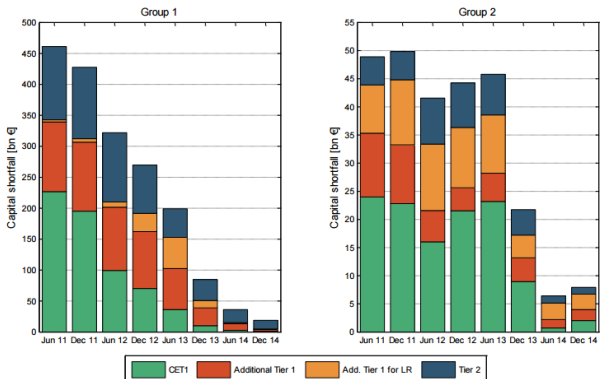
Source: AFME with EU GSIBs financial reports data

Capital shortfall has decreased continuously over the last years (Figure 3.7). According to EBA statistics, between June 2011 and December 2014, the total capital shortfall for Group 1 banks assuming end-point provisions fell by 95%. The trend has been replicated by Group 2 banks, albeit a small increase in aggregate capital shortfalls between June and December 2014.

EU GSIBs have also reduced their capital shortfall positions, even when taking into account maximum Pillar I requirements. The weighted-average of EU GSIB's CET1 ratios stood in 3Q15 above the maximum Pillar I requirements due to be in force in 2019. This measure (Figure 3.8) assumes that banks are allocated in their current individual GSIB bucket, and the maximum countercyclical buffer is set at 2.5% to all EU GSIBs[16]. This figure represents a marked improvement on the aggregate shortfall observed in December 2013 of 1% relative to RWAs, and a balanced fulfilment of 2019 requirements (0.1% difference) in 4Q14.

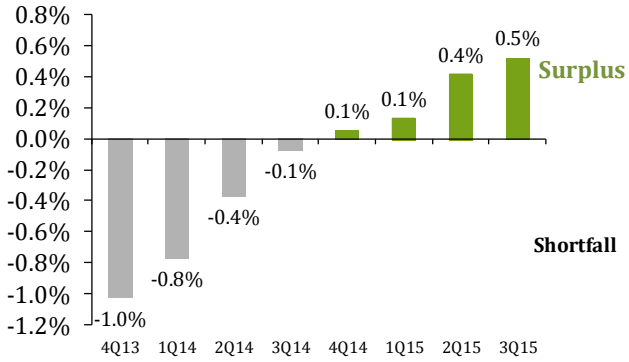
[15] 13 of the 14 EU GSIBs as designated by the FSB in 2014 that report phased-in CET1 capital levels
[16] This figure assumes the GSIB bucket allocation in 3Q15, which however was recently updated by the FSB, affecting in particular the bucket allocation of two EU GSIBs.

3.7 Evolution of capital shortfall by type of capital under full implementation[17]



Source: EBA

3.8 Weighted average of EU GSIBs' CET1 ratios relative to end-point target assuming a 2.5% countercyclical buffer (absolute difference in %)



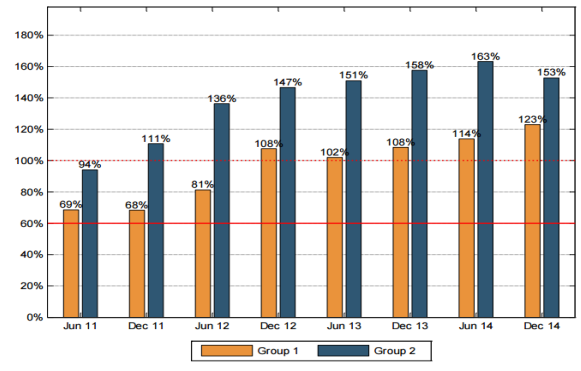
Source: AFME with EU GSIBs financial reports data

Liquidity

European banks by assets have adjusted their liquidity positions in compliance with the liquidity coverage ratio (LCR). The liquidity ratio, a measure of high quality assets as proportion of net cash flows, increased from 69% to 123% between June 2011 and December 2014 for the largest banks in Europe (comparable with a minimum required of 100%). Banks with T1 capital below €3 bn have also improved their liquidity positions in compliance with LCR provisions from 94% in June 2011 to 153% in December 2014 (Figure 3.9)

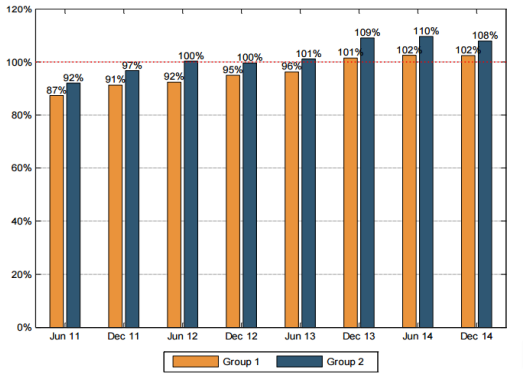
Broken down by asset classes, according to EBA statistics, Group 1 banks have held more cash and central bank (CB) reserves than Group 2 banks, while securities classified as Level 1 assets make up the larger part of the Group 2 banks' portfolios.

3.9 Evolution of LCR by bank group



Source: EBA

3.10 Evolution of NSFR by bank group



Source: EBA

EU banks have also improved their liquidity positions as measured by the Net Stable Funding Ratio (NSFR). The NSFR is defined as the amount of stable funding relative to the amount of required stable funding (RSF). This ratio should be equal to or higher than 100%. Figure 3.10 illustrates the continued

[17] Group 1 banks are banks with Tier 1 capital in excess of EUR 3 billion and which are internationally active. All other banks are categorised as Group 2 banks.

progress in complying with NSFR. According to the EBA, as of December 2014, the average NSFR for Group 1 and Group 2 banks is 102% and 109%, respectively, comparable with ratios of 87% and 92% in June 2011.

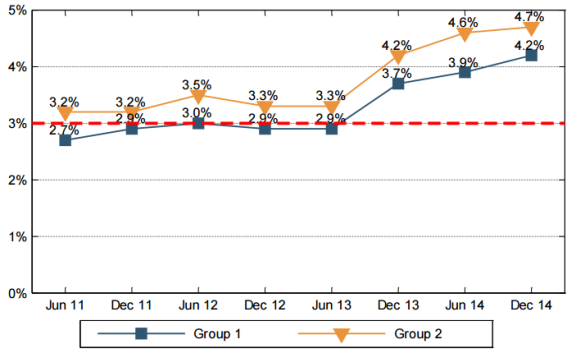
Approximately 60% of Group 1 banks and 75% of Group 2 banks already fulfil the minimum NSFR requirement of 100%. The average NSFR for big (Group 1) and small (Group 2) banks increased by 15 percentage points and 16 percentage points, respectively, between June of 2011 to December 2014.

Leverage

Banks have improved their Leverage Ratios (LR), the amount of Tier 1 capital as proportion of their exposure measure. LRs have also improved in tandem with the increase in capital (see Figure 3.11). According to the EBA, the increase in the LR for Group 1 banks can be attributed to the increase in Tier 1 capital (about 6%), whereas LR exposure decreased only slightly from December 2013 to June 2014. For Group 2 banks, the decrease in the LR exposure (1.8%) was offset by a decrease in Tier 1 capital (0.9%), improving in turn the aggregate LR ratio.

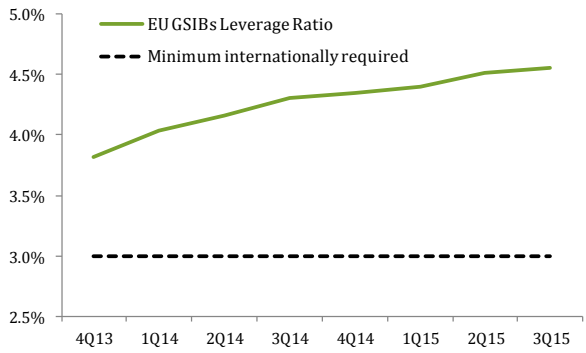
According to more recent statistics compiled as of September of 2015, EU GSIBs have continued increasing their leverage ratios from 3.8% in December of 2013 to 4.6% in September of 2015. These ratios are comparable with a minimum internationally required of 3%, due to be in force by 1 January 2018, although noticeably some countries, including EU member states, have set a ratio above 3% (Figure 3.12).

3.11 Evolution of leverage ratio by bank group[18]



Source: EBA

3.12 EU GSIBs leverage ratio (end-point, simple average)



Source: AFME with EU GSIBs financial reports data

Market measures of financial sector stability

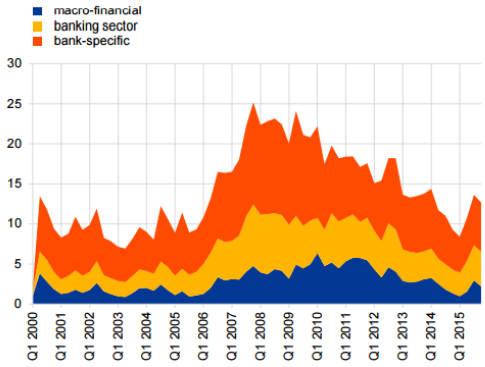
Market prices have recognised the substantial improvement in stability and resilience of banks in Europe. European banks CDS, as aggregated by the S&P/ISDA CDS index, suggests the improved perception on the level of risk of European banks. CDS prices have decreased from volatile levels of between 200-400 bps observed during the sovereign debt crisis to more stable and lower risk perception of 100bps observed in the fourth quarter of 2015 (Figure 3.13).

[18] Group 1 banks are banks with Tier 1 capital in excess of EUR 3 billion and which are internationally active. All other banks are categorised as Group 2 banks.

3.13 European banks CDS

Source: EBA

3.14 Aggregate distress probability for euro area banks

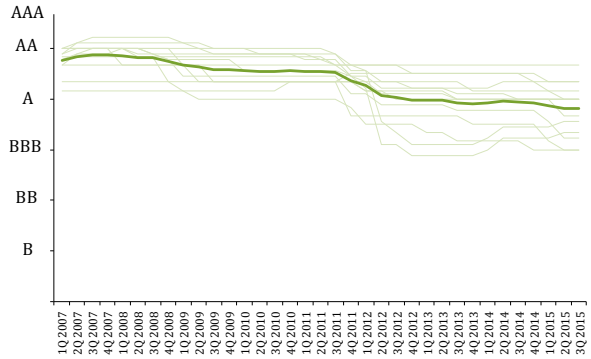


Source: ECB

Other market-implied indicators of distress and risk perception suggest an improved perception on the soundness of euro area banks (Figure 3.14). According to ECB calculations[19], the aggregate distress probability for euro area banks has decreased from 25% in the peak of the crisis, to around 13% in 2Q15 (and below 10% in 1Q15). Bank-specific and banking sector conditions were the main source of distress of euro area banks during the 2009 crisis, while aggregate macro-financial conditions significantly contributed to the distress of 2012 (Figure 3.15).

Banks' credit ratings are not mirroring the downward trend in borrowing costs and the improved market perception on the soundness of European banks. Credit ratings in the banking sector have continued to deteriorate during 2015, which however is not consistent with the recent downward trend in debt borrowing costs and risk premia metrics (e.g. CDS). Noticeably, the relationship between credit ratings and borrowing costs is not perfect.

3.15 EU GSIBs long-term credit ratings



Source: S&P, Fitch and Moody's

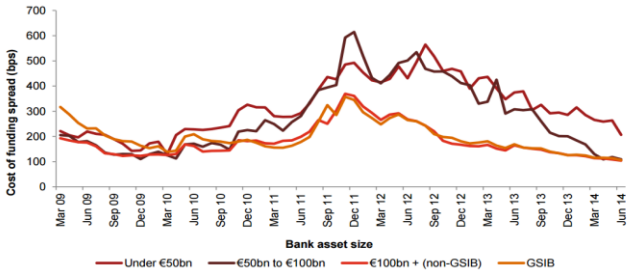
Markets have internalised the end of too-big-to-fail. Asset size is no longer an advantage in terms of borrowing costs. From an asset size perspective, analysis of current market evidence on debt spreads suggest that GSIBs do not benefit from lower funding costs compared to non EU GSIBs (or "implicit

[19] ECB, "Financial Stability Review", November 2015

subsidy"). EU GSIB banks faced higher funding costs compared to other large and small banks in the EU between 2009 and 2010. Between late 2010 and 2011, funding costs across all banks were quite volatile and increased amidst the sovereign debt crisis. Since the end of the sovereign debt crisis, yields have declined across all banks. Current debt funding costs are broadly similar across banks regardless their asset size (Figure 3.16).

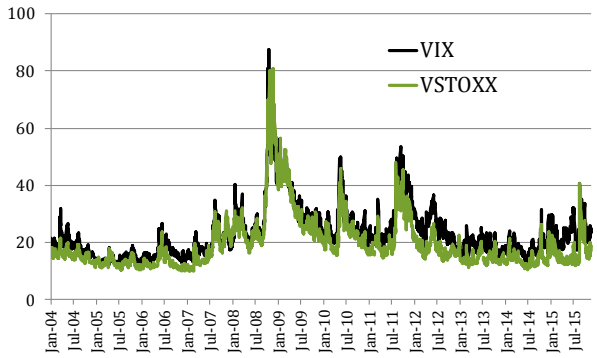
The lower implicit subsidy indicates success of regulatory reform programme, as financial markets are not internalising a possible implicit advantage from a borrowing costs perspective due to the size of the bank (See Figure 3.16 in next page).

3.16 Spreads on banks' senior debt, subordinated debt and covered bonds



Source: PwC

3.17 VIX and VSTOXX



Source: CBOE and STOXX

Market volatility in Europe remains marginally above pre-crisis levels. Market volatility has almost returned to pre-crisis levels. According to market implicit volatilities of share prices (VSTOXX in Europe and VIX in the U.S.), the average volatility of shares both in the U.S. and Europe have marginally increased between the period 2004-2006 and 2013-2015. In Europe, VSTOXX levels stood at 16.5 in 2004-06, with a marginal hike to 20.1 in 2013-15, while VIX levels in the U.S. were registered at 13.6 in 2004-06 and 14.9 in 2013-15.

Recent assessments of improvements in financial stability

This section provides a summary of recent assessments of how financial stability has improved since the financial crisis. Commentary is taken from the Financial Stability Board; the Commission; the ECB; and a recent industry study conducted by PwC. Generally, each study has concluded that financial stability in Europe has improved substantially; that much regulation remains in train; and that there are potential risks to stability arising from reduced capacity in the wholesale financial markets.

Financial Stability Board

On 9 November 2015, FSB Chairman Mark Carney wrote to G20 leaders with a progress report on implementation of the regulatory reform programme. Overall, the report to G20 leaders is positive about the progress being made in implementation and the impact of reforms on the financial system.

In terms of the impact of the G20 reforms, the FSB makes the following observations:

- "*Implementation of agreed reforms has substantially strengthened the resilience of the global system.*
- *Reforms have been achieved without significant unintended consequences to date.*
- *Banks have increased capital ratios mainly through retained earnings rather than by reduced lending.*

- *There are concerns that liquidity in fixed income markets has declined in recent years. Evidence is mixed, and the baseline for comparison should not be the unsustainable excess liquidity that existed prior to the crisis."*

The FSB does not trace the impact of individual measures, and focuses instead on a general assessment of the financial system. The evidence it cites is high-level but does survey key trends such as the impact of low interest rates; changes to bank business models and balance sheets; and credit market liquidity. Generally, the FSB does not accept that the financial reform programme has been excessive or counterproductive.

European Commission

In May 2014 the European Commission published 'review of a reformed financial sector for Europe' – a broad package comprising stocktake of existing legislation enacted, an assessment of its initial effects; and a set of priorities for future regulation.

The Commission was open about the inherent the difficulties in establishing robust causal relationships between specific regulatory changes and observable economic and financial effects – whether at the macro or the micro level. In its working document, the Commission stated:*"The full impact of the financial reform agenda can in principle only be assessed in the years to come, but even then it will be difficult to isolate regulatory impacts from other factors, such as the direct consequences of the crisis… and wider macroeconomic, technological and demographic changes."*

Nonetheless, the Commission study concluded that: *"The first positive effects of the reformed financial system can already be observed and continue to unfold. Ongoing monitoring and review will be necessary to further evaluate the implementation and the overall impact and effectiveness of the reforms."*

European Central Bank

On 1 November 2015, the ECB published its Financial Stability Report. The ECB highlighted the improved soundness of Euro area banks, concluding that "*the substantial capital increase above pre-crisis levels, primarily triggered by the introduction of the CRR/CRD IV package and various supervisory actions (e.g. stress tests, Pillar 2 measures) and market pressure, should contribute to a healthy and resilient banking system. This, in turn, should help the financial sector facilitate economic growth over the whole financial cycle"* However, the ECB was cautious about the prospects for banks in the Eurozone noting that they *"still face challenges relating to weak economic growth prospects, legacy issues from the financial crisis, and a strengthened regulatory and prudential environment."*

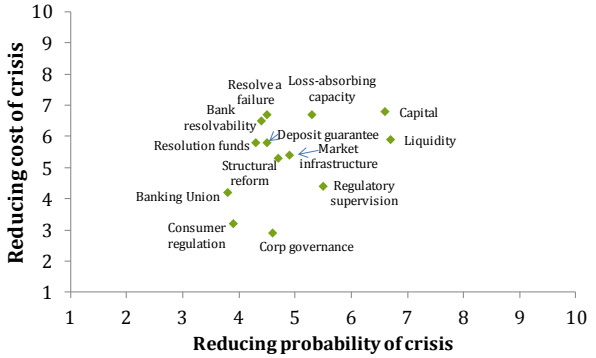
PwC study on structural reform

A recent PwC study conducted surveys to 55 regulation practitioners, enquiring about the cost and benefits of recently approved financial regulations, as well as the effectiveness in reducing the probability and cost of crisis. The study found that, overall, banking regulations (namely capital, liquidity requirements and loss absorbing capacity requirements) are effective in reducing both the probability and cost of financial crisis.

By analysing the benefits of recently approved reforms on GDP, PwC finds that regulatory capital, liquidity requirements and deliver the highest benefits to GDP, although also produce the greatest costs. Consumer regulation reforms and Banking Union are found to deliver low benefits measured as contribution to GDP, with also moderate costs to the financial system.

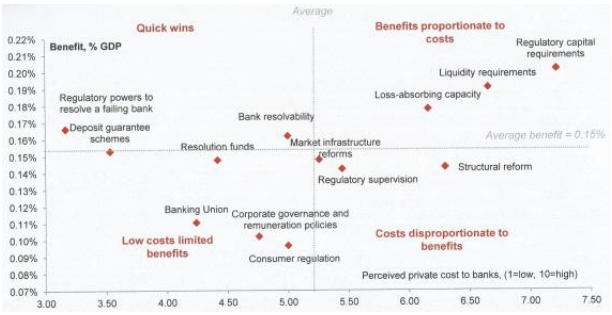
The study however does not take into account possible unintended consequences (e.g. impact of capital rules on liquidity) and interactions between regulations, however it provides indication of the direct benefits and costs as perceived by regulatory practitioners (See figure 3.18 and 3.19).

3.18 Effectiveness in reducing cost and probability of crisis



Source: PwC

3.19 Benefits and cost of regulation



Source: PwC

4 Emerging concerns about the cumulative impact of regulation

This section examines the current state of the evidence for the principal concerns of policymakers and market participants about the potential for unintended negative consequences of EU financial regulation. The main concerns are in relation to the impact of wholesale market regulation on:

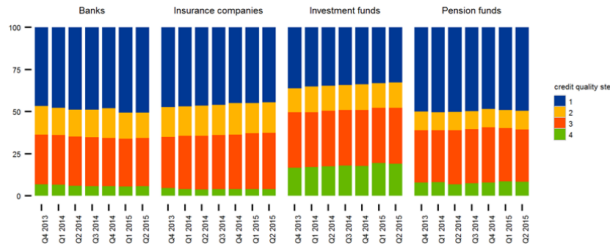
- long-term investment;
- credit allocation;
- market liquidity; and
- risk management.

A. Long-term investment

The asset composition of long-term investors has reallocated over the last years, in part due to macroeconomic conditions, changes in the monetary policies of most developed markets, and accommodation to the new regulatory landscape.

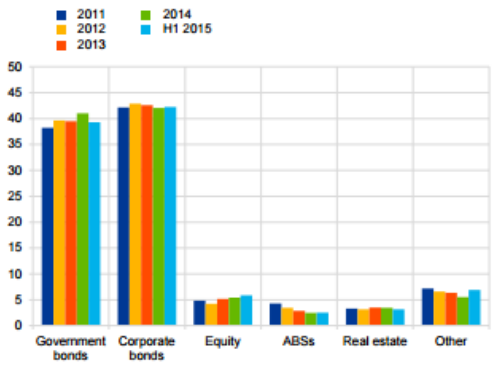
Institutional investors, except banks, have increased their exposure to lower-rated fixed-income assets. Due to macroeconomic circumstances (e.g. QE and the subsequent "search for yield"), long-term investors such as insurance companies, pension funds and investment funds have increased their holdings of debt securities with lower credit quality. The ECB argues that it is possible that investors have substantially increased their exposure to credit and interest rate risk "in an effort to achieve higher returns", as yields of safer assets have substantially decrease in the euro area.

4.1 Share in nominal debt securities holdings by sector and rating category (%)



Source: ECB

4.2 Investment portfolio split of selected euro area insurers (%)



Source: JPMorgan, individual institutions' financial reports and ECB

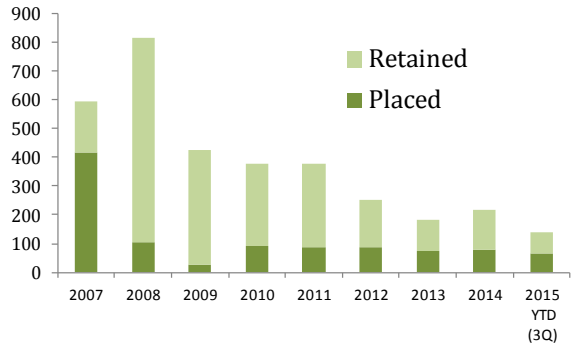
The regulatory programme has discouraged investment in securitised products. Euro area insurers, typical long-term investors, have reduced their portfolio investment on ABS securities from 5% in 2011 to around 2.5% in H1 2015. It is increasingly recognised that aspects of the current EU prudential framework for insurers under Solvency II discourage certain types of productive long-term investment in Europe's capital markets.

Total European securitisation issuance, a typical long-term asset held by institutional investors such as insurance companies, has decreased from €818 bn in 2008 to € 214 bn in 2015. Securitisations placed in the market have also reduced its participation in total issuance, corresponding to 70% of total issuance in 2009 to 38% in 2015. Consistent with the underperformance of securitisation issuance, outstanding securitisations have also decreased from €2.3 Tn to €1.3 Tn. This, however, has not been the case of

outstanding securitisations in the U.S., which despite the nature of the 2009 crisis, has managed to recover from €6.8 Tn in 2009 to €8.1 Tn in 2015 (2Q).

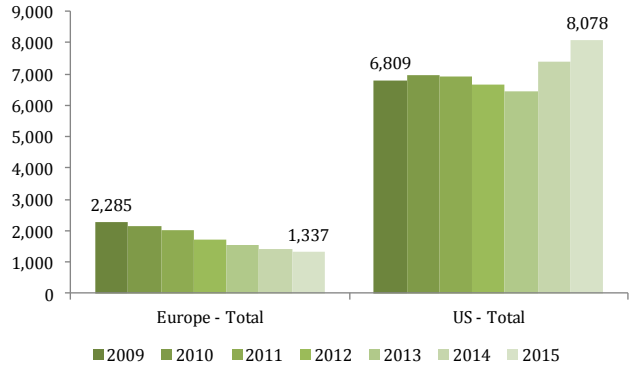
Bringing back investors, including insurers, into this market and revive the securitisation, would create significant potential for increased funding for the European economy. It has been estimated that this could free up an extra €100BN of investment for the economy[20].

4.3 Securitisation issuance in Europe (€bn)



Source: AFME

4.4 Outstanding securitisations in Europe and United States (€bn)



Source: AFME

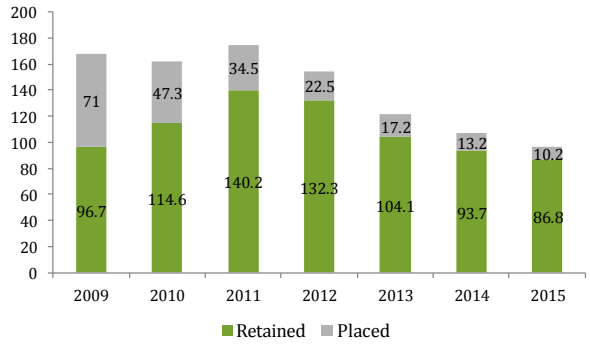
Issuance of SME securitisations has decreased in tandem with total ABS issuance. Annual SME securitisations in 2009 represented €65 bn, with a substantial decrease to €32 bn in 2014 (or about half the 2009 issuance in nominal terms).

Securitisation is a vital tool in Europe and a channel for borrowers to access the capital markets. Traditionally, it has contributed to funding real economy assets such as SME lending. Securitisation can improve access to finance to SMEs by allowing banks to free up their balance sheets for further lending. A recovery in the securitisation market should play an important role in unlocking credit markets and supporting wider economic recovery across Europe.

4.5 Issuance of SME securitisations in Europe (€bn)

Source: AFME

4.6 Outstanding SME securitisations in Europe (€bn)



Source: AFME

[20] Speech by Commmissioner Jonathan Hill at the Euromoney Capital Markets Union Forum

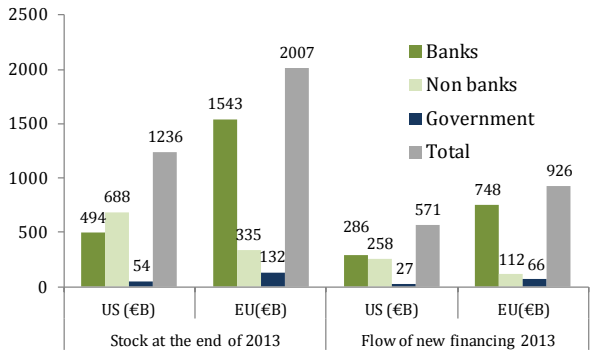
SMEs over-rely on bank lending. Europe has significantly less risk capital available for investment in all companies, particularly SMEs who are too small to consider an IPO (See Figure 4.7). SMEs in Europe rely substantially on their bank for finance, yet for small companies with limited profits or cash flows, bank loans are often not the most suitable form of financing[21]. SMEs only make limited use of equity financing and investments by pension funds and insurers in SMEs hardly exist.

For SMEs too small for Venture Capital and Private Equity investors to consider, support from an expanded European business angels and peer to peer/crowdfunding market is important.

SME bank lending in the euro zone remains below pre-crisis levels. SMEs have been particularly affected by deleveraging and the wider moderation of bank lending. According to the AFME BCG study "Building the Growth Gap", bank lending represented 77% of total SME outstanding financing in 2013 (encompassing loans and securitised loans). More recent statistics from the ECB suggest that the annual flow of new SME loans in the euro zone remains subdued and below pre-crisis levels, where the average monthly value of new SME loans stood in 2014 at €646bn (vs. €970 bn in 2006).

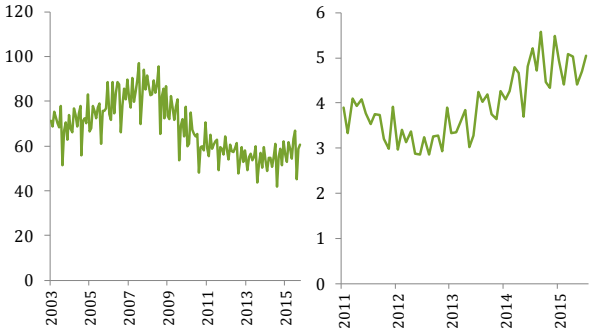
These statistics further support the importance for SMEs to diversify their finance sources via, for example, capital markets and non-traditional finance.

4.7 SME finance (€bn)



Source: AFME and BCG "Building the growth gap" report

4.8 Monthly new SME loans in the Euro zone (left, €bn) and in the UK (right, £bn)[22]

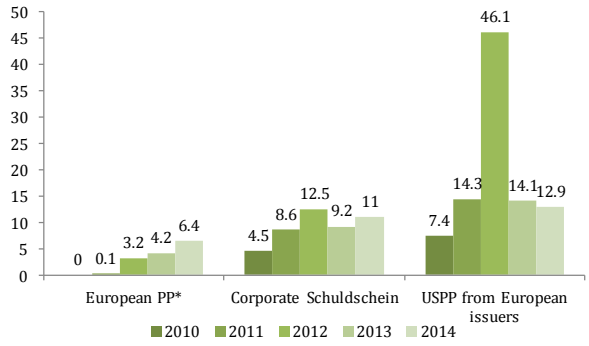


Source: ECB and BoE

Alternative funding avenues for mid-sized and large corporates is desirable. According to the AFME-BCG "Bridging the Growth Gap" study, market participants believe that a larger and more visible European Private Placement market would provide a faster, more flexible route for investing in European firms. Interviewees regarded Private Placements as an important source of funding for European firms wishing to avoid the costly disclosure requirements that public market issuance often entails. The status of the US as the long-standing leading centre for European deals was confirmed by investors, who viewed it as "the" global market. Interviewees pointed out that a European Private Placement market was still far from being a reality – despite rapid growth in the number and value of Private Placement deals taking place in Germany, France and the UK. The analysis indicates that the value of US Private Placement deals at €46.1bn ($58.3bn) in 2013 far outstripped the size of European deals, which totalled €20bn over the same period.

[21] BCG report 'Bridging the Growth Gap' 2015
[22] SME loans in the Euro zone refer to new NFCs loans up to and including EUR 1mn amount. SME loans in the UK are loans to enterprises with an annual account turnover of up to £25mn.

4.9 European private placement volumes (€bn)

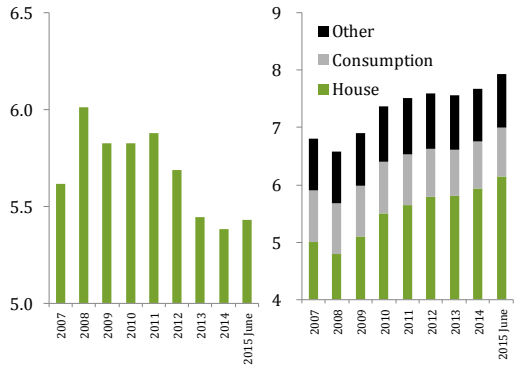


Source: AFME and BCG "Building the growth gap" report

B. Credit allocation

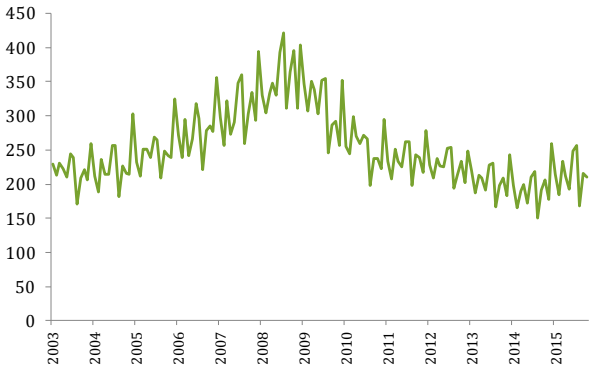
The recently approved prudential regulations made the banking system sounder, but may have also contributed to slow the speed of recovery. The reasons behind the decrease in direct lending to the euro area non-financial corporate are difficult to disentangle, but there is theoretical and empirical evidence suggesting that recently approved regulations may have affected the capacity of banks to support growth and the speed of economic recovery.

4.10 EU outstanding bank lending to NCFS (left) and households (right) - EUR bn



Source: ECB

4.11 Monthly bank loans to NFCs in the euro area (EUR bn)



Source: ECB

A recent study by De Nederlandshe Bank (DNB) concludes that an increase in capital requirements by one percent point force banks to cut their total lending in the short run by 1.2%-4.5% or reduce credit growth by 1.2-4.6 percentage points. Although both supply and demand effects may presumably have affected lending performance, it possible to suggest that recent capital requirements may have contributed to the support of financial markets to the recovery.

As discussed in section 2, Other studies suggest that a 1pp increase in the capital requirement decrease loan volumes by -3.5% (Bridges et. al, 2014), between -0.7 and -3.6% (FSB Macroeconomic Assessment Group, 2010), between -5.7 to -8.0% (Aiyar, Calomiris and Wieladek , 2014) and -4.5% (Noss and Toffano, 2014).

Total lending to Non-Financial Corporations (NFCs) has been particularly affected. As observed in figures 4.10 and 4.11, as of 2015 outstanding loans and monthly volumes of new bank loans remain below pre-crisis levels in nominal terms (with a slow recovery commenced on 2014) possibly explained in part by regulation and the increase in banks capital requirements.

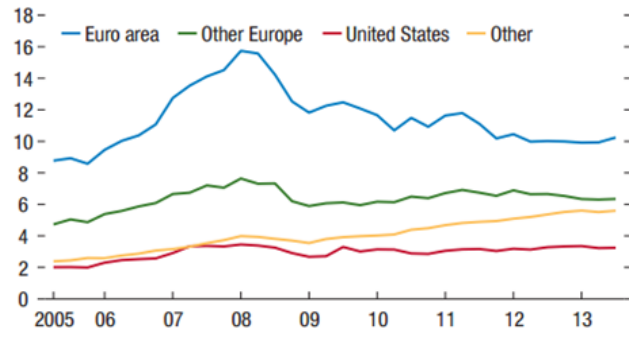
The impact of capital charges may also have had consequences on GDP growth, job creation and the speed of the economic recovery. As discussed in section 2, banks' contribution to the speed of recovery may have been affected by the recently approved capital regulations. The impact on GDP annual growth in Europe was estimated between -0.4% (IIF) and -0.08% (BIS), comparable with a GDP growth of 1.4% FY in 2014 and 1.9% FY expected by the Commission for 2015[23].

These studies, however, were conducted in the early stages of implementation of Basel III, in some cases before the European sovereign debt crisis and before there was more evidence on the slow pace of the European recovery. As more evidence has been collated on the amount of capital raised by banks, the adjustment in balance sheets (changes in RWAs) and accumulation of retained profits, it is possible that fine-tuning and re-calibration might be needed to assess an updated estimate of the impact of regulation on economic performance.

Europe reduced participation on Global cross-border lending. Direct cross-border lending as a share of total banking assets has declined, primarily because of retrenchment by European banks. According to the FSB[24], 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 (Figure 4.12).

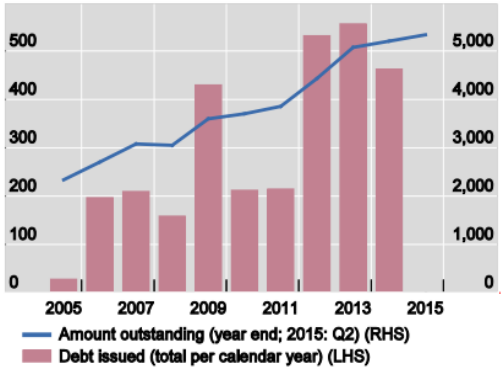
Despite the loss of appetite for cross-border lending supply by European banks, according to BIS statistics, global net issuance of international securities by nonfinancial corporates continues to grow since the crisis, possibly recently explained by the favourable international borrowing costs (Figure 4.13).

4.12 Foreign claims by home country of banks ($Tn)



Source: IMF

4.13 Global net issuance of international securities by non financial corporates ($bn)



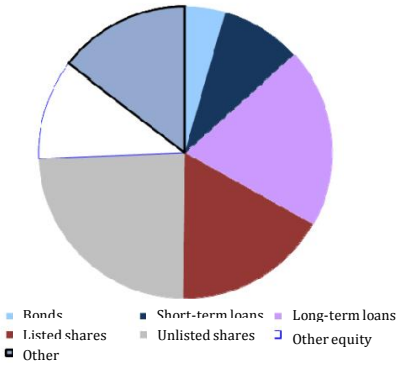
Source: FSB

[23] See European Commission Institutional Papers - European Economic Forecast Autumn 2015. Available in: http://ec.europa.eu/economy_finance/eu/forecasts/2015_autumn/eu.html

[24] FSB, "Implementation and effects of the G20 financial regulatory reforms", 2015. Available here.

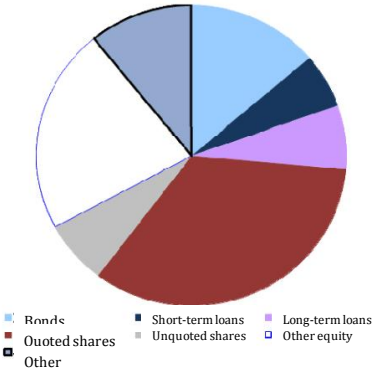
Europe can utilise capital markets to enhance NFCs' funding. Capital markets can become a useful source to improve and diversify financing in Europe. As discussed in the Economic Analysis document prepared by the European Commission supporting the CMU action plan[25], the participation of capital markets in NFCs financing is below that of the United States. Bank loans represent 14% and 3% of the total liabilities of European and US companies, respectively. Corporate bonds however, are more used as a source of funding by US companies, representing 11% of their total liabilities (vs. 4 % in EU firms). The same comparison can be made for equity financing— while the share of equity on firms' balance sheets is broadly comparable in the US and the EU, slightly more than half of this equity is in the form of listed shares in the US, to compare with about one third in the EU (Figures 4.14 and 4.15)

4.14 Liabilities of EU-28 NFCs (2013)



Source: Eurostat, compiled by the European Commission

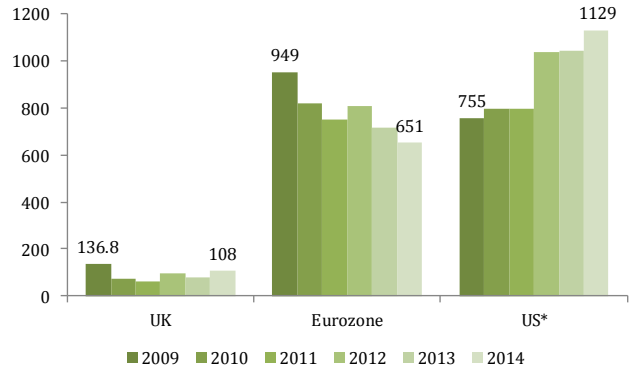
4.15 Liabilities of U.S. NFCs (2013)



Source: OECD, compiled by the European Commission

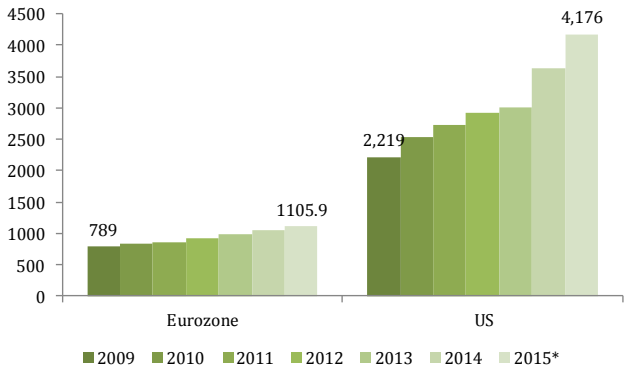
European corporate bond issuance remains below pre-crisis levels. Over the past few years we have seen a steady decline in the issuance of bonds by corporates and it is important to reverse this by creating a favourable regulatory environment (see Figure 4.16). This trend of decreasing bond issuance has reversed for example the US where corporate bond issuance has actually increased over the past few years.

4.16 Corporate bond issuance (€bn)



*Source: ECB, BoE, *SIFMA: Investment Grade only*

4.17 Corporate bonds outstanding (€bn)



*Source: ECB, US FED, *as of June 2015*

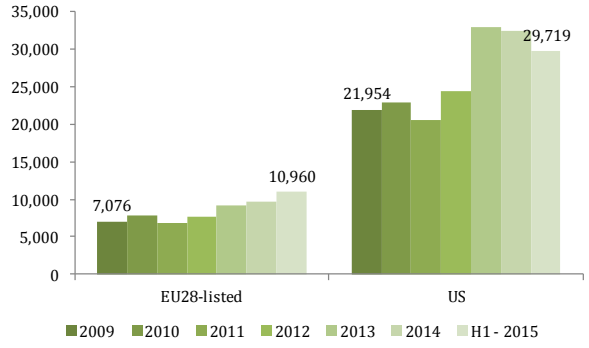
[25] EC, "Economic Analysis Accompanying the document – Action Plan on Building a Capital markets Union", Available in: http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-economic-analysis_en.pdf

ECM performance has improved, but home-bias remains a concern for wider PanEuropean integration. Equity primary offerings have increased steadily since 2013, having surpassed the sovereign debt crisis and the subsequent market volatility and loss in valuations.

The median percentage difference between offer price and 1-Day closing price of IPOs stood in 3Q15 slightly below the 5-year average at 3% (4% FY), suggesting overall good conditions for primary offerings (vs. e.g. 7% in 2012)[26].

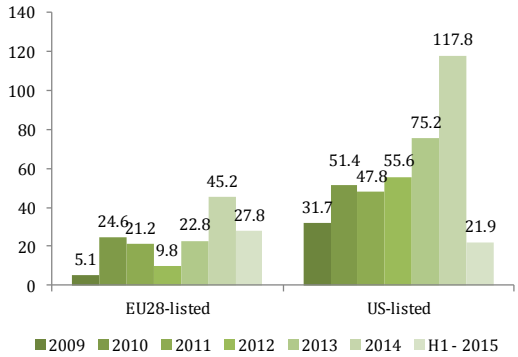
Market capitalisation remains substantially below the U.S. in value (€ 11 Tn vs. € 30 Tn in the U.S.) and as proportion of GDP 78% (vs. 148% in the U.S.) as of 3Q15. The difference in terms of depth between both markets indicates the potential for further listings in the PanEuropean market.

4.18 Market capitalisation of listed shares (€bn)



*Source: ECB, BoE, *SIFMA: Investment Grade only*

4.19 Listed equity primary offerings (€bn)



*Source: ECB, US FED, *as of June 2015*

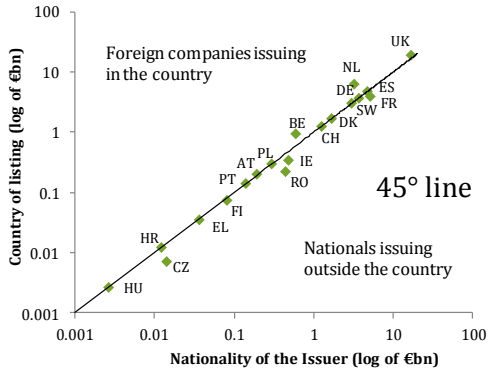
European data of IPO proceeds suggest home-bias in equity listing. According to Dealogic statistics, new equity listings (IPOs) in Europe are typically carried out in the country exchange where the issuer is domiciled (Figure 4.20). For example, total IPO proceeds in 2014 by Spanish issuers totalled €4.7 bn, the same amount of total IPO proceeds in Spanish exchanges, with a correlation of 98% between the 2014 proceeds by nationality of issuer and the nationality of the exchange.

From an investor base perspective, recent statistics compiled by the Norwegian Securities Dealers Association (NSDA) suggest that the "home-bias" effect is more evident for smaller issues. According to data compiled by the NSDA from 74 equity issues/placements for the last 4 years, for issues/placements of a nominal value of less than 20 £, the domestic investor uptake is 80-100%. Only larger issues are placed with a wider proportion of international investors (Figure 4.21).

It is expected that with the harmonisation of capital markets functioning, the Commission's CMU initiative will help both issuers and investors overcome the existing home-bias in listing and portfolio management, enhancing in turn the amount of available resources to invest.

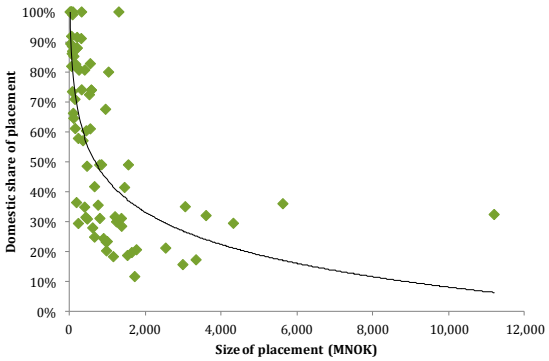
[26] See AFME Equity Primary Markets and Trading data report, available here.

4.20 IPO proceeds by nationality of the issuer and country listing (log base 10 of EUR bn, 2014)



Source: Dealogic, AFME

4.21 Domestic share of placement and size of placement in Norwegian equity markets



Source: NSDA

C. Market liquidity

A large body of research has found evidence of a substantial deterioration in market liquidity in the post-crisis. Several liquidity indicators suggest that, particularly in fixed income markets, the ability of market participants to easily trade securities has worsened in the post-crisis. Regulatory reform is likely to have contributed to a reduction in liquidity, alongside other factors such as the quantitative easing programmes in the Eurozone, Sweden, UK, Japan and the U.S. (via reduction of fixed income assets available to trade).

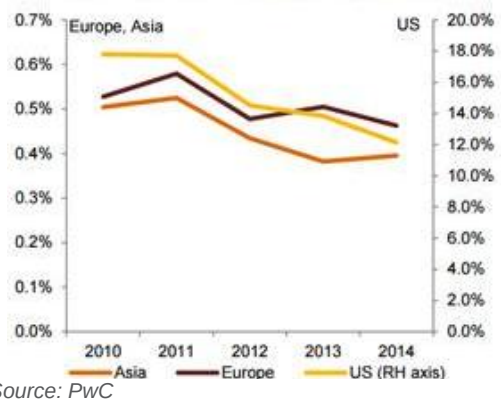
Liquidity is one of the pillars of efficient capital markets. According to the ECB, market liquidity can be defined as the ability to rapidly (immediacy) execute large financial transactions with a limited price impact, meaning that in liquid markets the marginal transaction should not impact the overall market price, the supply of buying and selling orders (breadth and depth), the transaction cost (tightness) or the ability of new buyers to transact (market resilience).

Traditional liquidity indicators such as bid-ask spreads mask the underlying reality of market liquidity. Analysts are using more comprehensive indicators such as turnover ratios, number of active market makers, average trade sizes and price impact of trades, to analyse the recent trends in market liquidity.

On a global basis, sovereign bond turnover ratios measured as average trading volumes as proportion of outstanding volumes, have decreased across all regions (US, Europe and Asia; Figure 4.22)[27]. Specifically for the European case, turnover ratios of sovereign European fixed income securities have decreased from 0.51% in 2010 to 0.4% in 2014. For corporate bonds, an instrument traditionally characterised by low market liquidity, turnover ratios in Europe have continuously decreased from 0.15% in 2010 to 0.1% in 2014 (Figure 4.23)

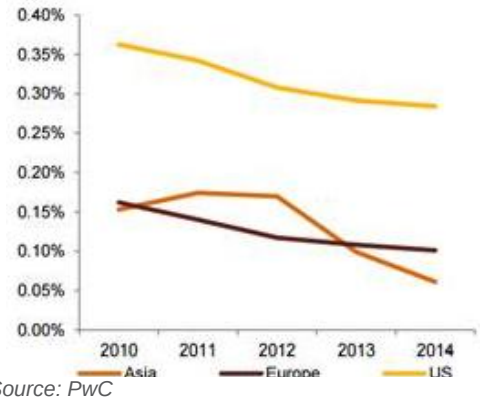
[27] Citi Research prepared similar metrics arriving to the same consequences: lower turnover incorporate credit, government bonds and equity trading.

4.22 Sovereign bond turnover ratios (average daily volumes/outstanding volumes)



Source: PwC

4.23 Corporate bond turnover ratios (average daily volumes/outstanding volumes)

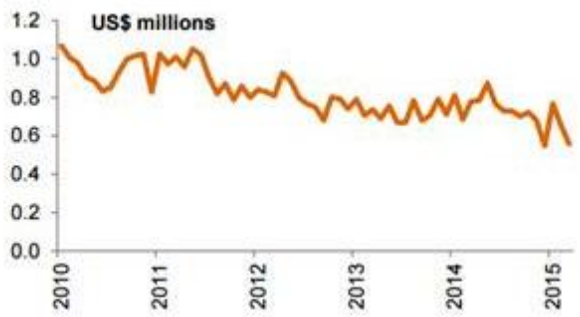


Source: PwC

Many banks have already exited or reduced market making activities affected by significant increases in capital and liquidity requirements. Based on surveys conducted to euro area market participants, the IMF found that regulation and balance sheets constraints are among the main factors limiting the ability of market makers to provide liquidity in debt securities[28]. Also the Bank of England[29] confirms that the market-making capacity of dealers has fallen in recent years, reducing secondary market liquidity. According to the previously referenced 2015 PwC study[30], collectively, banks are more selective in offering their balance sheet capacity, there are fewer banking participants in capital markets activities and end-users ultimately face a less diversified capital markets offering (Figure 4.25).

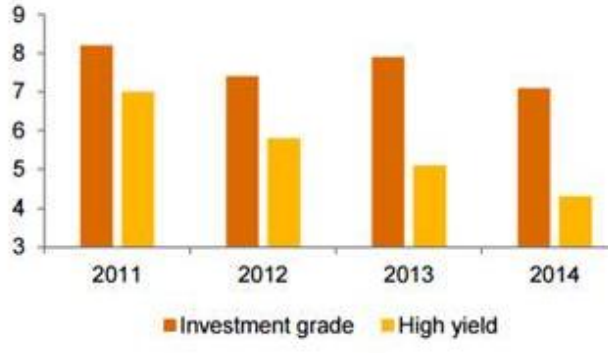
PwC also estimated quantitatively the impact of the presence of market makers on corporate bond spread, finding that "a one-unit reduction in the number of market makers increases the z-spread by 1.9 basis points", highlighting the importance of market makers in the provision of liquidity (in this instance, as measured by z-spreads of corporate bonds.

4.24 European corporate bonds, average trade size



Source: PwC with Trax data

4.25 Average number of active market makers – European corporate bonds



Source: PwC

[28] See IMF Global Financial Stability Report, Figure 2.4 panel 4. Available http://www.imf.org/External/Pubs/FT/GFSR/2015/02/pdf/c2_v2.pdf
[29] Bank of England, Has corporate bond market liquidity fallen? here
[30] PwC, Global Liquidity Study, August 2015

PwC[31] has found evidence of specific areas where market liquidity has declined and highlights that more significant declines may be masked by the current low interest rate environment and other factors such as strong asset valuations. Indeed, there is a very real risk that market liquidity could decline further as central banks withdraw from expansionary monetary policies. The study finds in particular that:

- The ease of executing some trades has already decreased;
- There are signs of declining depth in capital markets, characterised by falling transaction sizes (see figure 4.24);
- Some price impact measures also show that smaller trading volumes are moving market pricing by larger amounts;
- Ratios of trading to the size of markets for both corporate and sovereign bonds are on the decline (as can be seen in figure 4.23)

Lower inventories holdings of trading assets in Europe. Recently the BIS Committee on the Global Financial System recognised that "*One apparent trend is market-makers' increasing focus on activities requiring less capital and balance sheet capacity. In line with this development, banks in many jurisdictions report allocating less capital to their market-making activities and are reducing their inventories by cutting back on their holdings of, in particular, less liquid assets.*"[32] The reduction in market making activity impacts liquidity in the market.

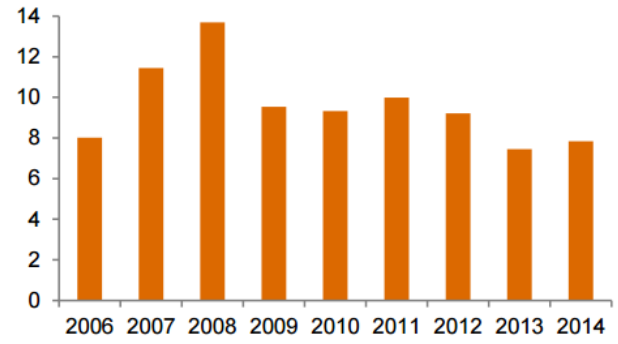
In Europe, the Bank of England in the December 2015 Financial Stability Report showed evidence of a cumulative decrease of £12bn between 2011 and 2015 in the level of dealer inventories in sterling corporate bond markets, possibly as consequence of higher costs of capital to hold inventories. For German banks, the IMF[33] also showed evidence of lower corporate bonds inventories by German banks from around €100 Tn in 2009 to €50 Tn in 2015 (March). Lower inventories typically have negative impact on the ability of market markers to provide liquidity in these markets.

In the United States, overall dealer inventories of corporate bonds with maturities above 1 year have declined from around $150 Tn in 2006 and around $230 Tn in 2008, to $50Tn in 2013.

With a sample of 32 global banks, PwC found that banks' holdings of trading assets have decreased by more than 40% since 2008 (Figure 4.26). According to Oliver Wyman and Morgan Stanley, wholesale banking balance sheets supporting traded markets have decreased by 40% in risk weighted assets terms and 20% in total balance sheet since 2010. However, the authors expect a further shrinkage of between 10-15% of fixed income balance sheet from the largest wholesale banks in the next 2 years, as additional capital would be required, with the subsequent impact on market liquidity (see Figure 4.27).

[31] PwC, Global Liquidity Study, August 2015
[32] BIS' Committee on the Global Financial System paper 'Market-making and proprietary trading: industry trends, drivers and policy implications
[33] IMF October Global Financial Stability Report. https://www.imf.org/External/Pubs/FT/GFSR/2015/02/pdf/text.pdf

4.26 Bank holdings of trading assets for a sample of 32 global banks (US Tn)



Source: Capital IQ

4.27 Share of 2014 banks' balance sheet and expected reduction

	Changes in balance sheet 2010-14	Further potential reduction
Rates & repo	~ -30%	-15% to -25%
FX, EM, & Commodities	~ -25%	-5% to 0%
Credit & Securitised	~ -30%	-5% to -15%
Equities	~ 0%	-5% to 0%
Total	**~ -20%**	**-10% to -15%**

Source: Oliver Wyman

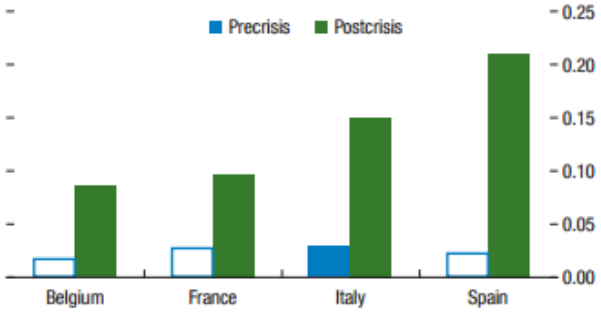
The liquidity of secondary markets is central to encouraging issuance activity by enabling investors to sell their investments quickly and at low costs when needed. If liquidity risk premia in secondary markets increase, there will be an adverse impact on the price of debt issuance in primary markets. When considered alongside the increased cost of bank credit, it becomes clear that if banks can be encouraged to participate in secondary markets, debt capital markets are more likely to become a credible alternative to banks directly providing credit to corporates.

Declining market liquidity has undesirable consequence on the price impact of trades, market correlations, and volatility. Among the unintended consequences of worsened market liquidity conditions are the overreaction to market news (exacerbating market volatility), the price impact of large trades and possible portfolio herding between market participants.

According to the IMF, the price impact of trades has increased as indication of lower market liquidity conditions (Figure 4.28). A recent IMF report[34] finds that the price impact of trades of sovereign bonds has risen in Europe, suggesting that large trades may now be harder to execute than in the pre-crisis. Fixed income markets are particularly affected by the increased sensibility to large trades. According to Citi Research, although bonds trade less often than shares (3,800 trades per day of NYSE/Nasdaq stocks vs. 85 trades per day of most liquid investment grade corporate bonds), they do in much larger sizes (US$ 7,000 of NYSE/NASDAQ shares vs. $500,000 of most liquid IG corporate bonds).

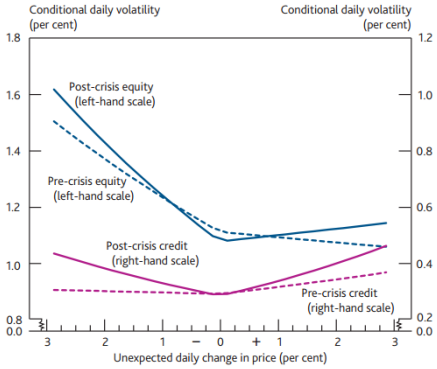
[34] IMF, Global Financial Stability Report 2015, available here

4.28 Price impact coefficient, Five-Year sovereign bonds



Source: IMF

4.29 Impact of asset price news on volatility in UK equity/credit markets



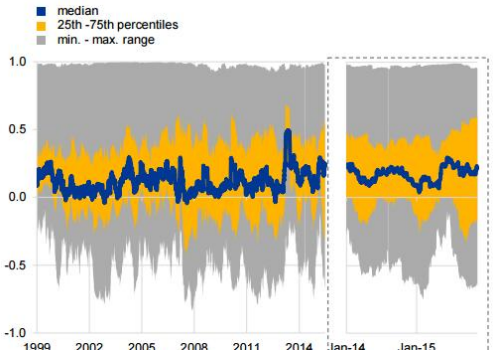
Source: Bank of England

Asset prices have become more sensitive to news. According to the ECB, while risk premia remain compressed, there is a concern that low market liquidity may amplify potential corrections in asset prices. In a recent speech, the Executive Director of Markets at the Bank of England[35] argued that recent liquidity conditions may have made major asset markets more sensitive to news, so that a given shock causes greater volatility. The Bank of England estimated that corporate debt and equity volatility have structurally changed in the post-crisis as it appears they have become more sensitive to news (with higher changes in prices days after unexpected shocks, Figure 4.29). According to the BoE[36], "the frequency and speed of recent market movements underscores growing concerns about fragile secondary market liquidity".

The ECB, the IMF, and market analysts[37] have found evidence of stronger co-movement in asset prices (even possibly herding), explained by the deteriorating conditions in market liquidity. According to ECB calculations (see Figure 4.30), correlations between asset classes have increased and have seemingly remained structurally higher since 2013. The IMF in the October Global Financial Stability report found that asset correlations have increased in the post-crisis era, pointing out that "*the tendency of global asset prices to move together across markets is now at its highest level since the beginning of the Great Recession*". This structural change could make vulnerable market structures by amplifying the impact of shocks and the scope for financial contagion.

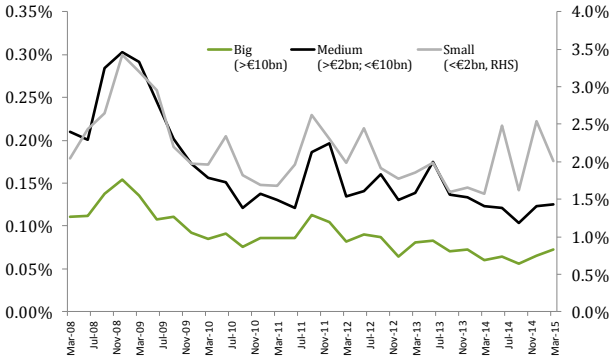
[35] Chris Salmon, "Financial Market volatility and liquidity – a cautionary note", available here.
[36] BoE, Financial Stability Report, July 2015
[37] See RBS "The Silver Bullet | Financial stability: the Fed's third mandate?" and Citi "When agents lose their principals Fixed income liquidity revisited"

4.30 Dispersion of pair-wise correlations between global asset classes over a 90-day rolling window



Source: ECB

4.31 Bid-ask spreads of shares admitted to trading in European markets (Big, medium and small market capitalisation)



Source: AFME with Datastream and ESMA data

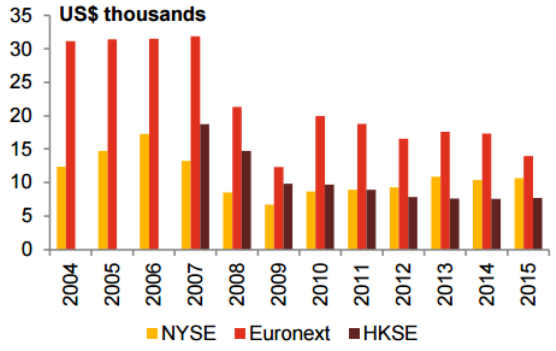
Market liquidity metrics for equity instruments also suggest deteriorated liquidity conditions in that asset class. As with fixed income instruments, traditional liquidity indicators such as bid-ask spreads obscure the underlying reality of market liquidity (Figure 4.31). Bid-ask spreads of shares admitted to trading in EU regulated markets suggest that liquidity conditions have improved since the crisis for all firms trading in Europe and regardless their size, which however contradicts other more comprehensive market metrics.

According to the ECB's November 2015 Financial Stability Review, the strong increase in global equity market volatility over the past six months, coupled with a surge in the number of measures that had to be employed by major stock exchanges in late August to avoid substantial price movements, has raised questions about market functioning also for this segment.

Average transaction sizes in exchanges have declined. Figure 4.32 shows that the average transaction size for stocks listed on Euronext and NYSE have declined by 55% and 14% respectively since 2004. Due to decreasing liquidity conditions, the potential impact of block orders has increased, and so there is a growing trend of voice-broking where large trades are involved, in order to avoid causing significant market movements.

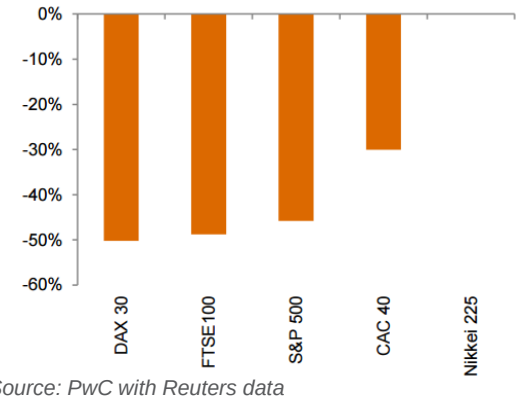
Market participants are finding it harder to execute block trades, as characterised by the decline in trading volumes in key markets (as shown in Figure 4.33). Similarly, average transaction volumes have also declined in major stock exchanges.

4.32 Average transaction size for major stock exchanges



Source: PwC

4.33 Change in trading volumes for major equity indices (2008 to 2015)



Source: PwC with Reuters data

The impact of the repo market on broader wholesale market liquidity

A recent study by ICMA concluded, based on interviews with a range of repo market participants and stakeholders, that nothing is transforming and reshaping the structure and dynamics of the repo market more than the Basel III requirements. They argue that "Each of its [Basel III] four components – Risk capital requirements, Leverage ratio, Liquidity Coverage ratio and Net Stable funding ratio – impact the repo market in different yet cumulative ways, significantly adding to the cost of capital required to run a repo trading book. Most consternation is being driven by the cumulative onus and cost of implementation, as well as the potential risks of unintended adverse outcomes.

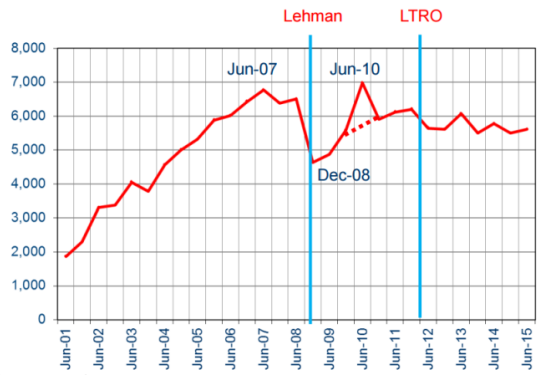
The size of the repo business has barely increased in the post-crisis (Figure 4.34). Repo transactions are an important instrument for risk management and hedging purposes, particularly for illiquid instruments such as fixed income securities.

One of the major constrains faced by repos are leverage ratios, in particular the limitations of netting for purposes of estimating the exposure measure. According to Citi Research[38], "the widespread reduction in dealer balance sheet sizes in general, and repo in particular, has been a direct consequence of banks' efforts to surpass 3% leverage targets in Europe and higher 5%/6% targets under Supplementary Leverage Ratio requirements in the US".

The use and frequency (turnover, as a metric of liquidity) has decreased in the post crisis, both in Europe and the U.S. (Figure 4.35). According to Citi Research, the greatest impact has been observed in banks that historically had the lowest leverage ratio positions.

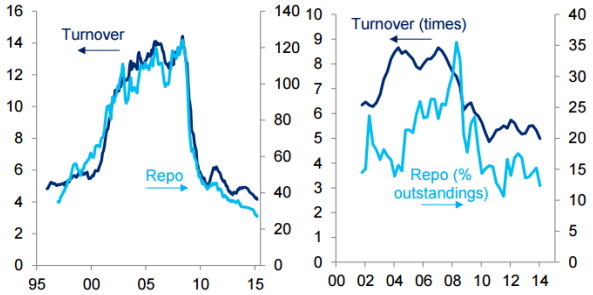
[38] Citi Research, "The liquidity paradox", 2015

4.34 Total repo business (€bn)



Source: ICMA

4.35 US Treasury (left) and UK GILT (right) turnover vs. repo



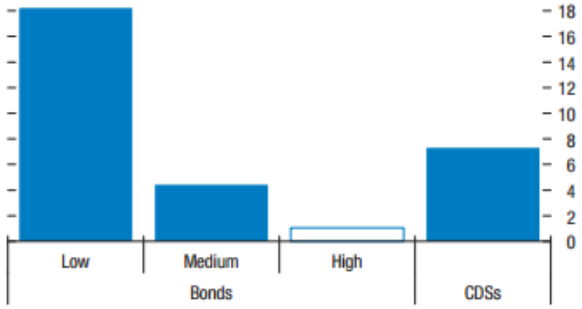
Source: Citi Research with FED, SIFMA, ICMA and UK DMO data

Unintended consequences of CDS ban. Analysing the use of CDS and its underlying assets, in the latest Financial Stability Report, the IMF argued that the European ban on uncovered CDS operations reduced liquidity in the European sovereign bonds market.

The European sovereign CDS ban was followed by deterioration in the liquidity of EU sovereign CDSs and bonds. According to the IMF "*Such restrictions reduce the ability of investors to find counterparties for trades and the ability of market makers to hedge. (...) The EU's ban also reduced liquidity in the European sovereign bond market.*" Figure 4.36 shows the IMF's estimated deterioration in liquidity in sovereign bonds and sovereign CDS contracts that can be attributed to the EU ban on uncovered CDS on EU sovereign debt.

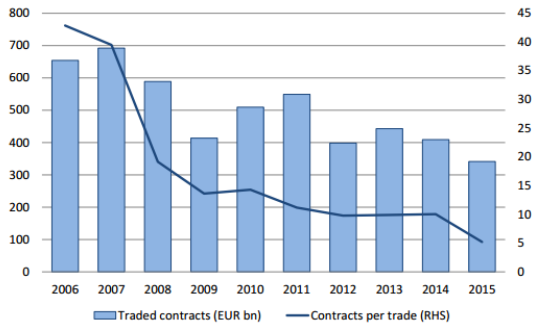
Citi Research[39] also finds evidence of a declining trend in the volumes of fixed-income futures and the number of contracts per trade. Changes in fixed income futures turnover may be correlated with the deteriorated conditions of spot turnover (Figure 4.37).

4.36 Decrease in liquidity due to EU uncovered CDS ban (percent deterioration in liquidity)



Source: IMF

4.37 Changes in liquidity of fixed income futures



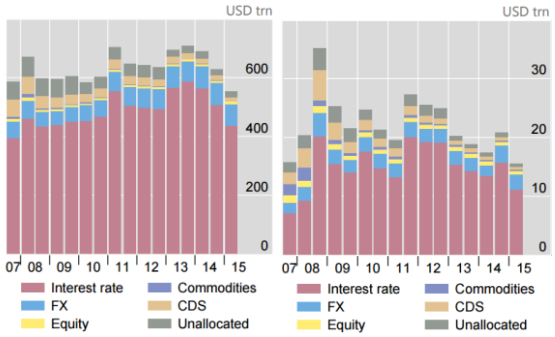
Source: Eurex, Citi Research

[39] Regesta and Tentori "Market liquidity in liquid markets: Pitfalls and trends", 2015, available in http://www.voxeu.org/article/market-liquidity-liquid-markets-pitfalls-and-trends

D. Risk management

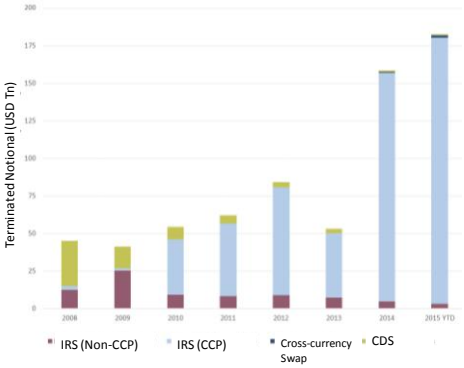
The outstanding notional amount of global derivatives has decreased since 2013. The overall size of the OTC derivatives market continued to decrease in 1H15, explained to a great extent by the decline in interest rate derivatives. The notional amount of outstanding OTC derivatives contracts fell by 12% between end-December 2014 and end-June 2015, from $629 trillion to $553 trillion. Market values decreased from $20.9 trillion at end-December 2014 to $15.5 trillion at end-June 2015, their lowest level since 2007 (Figure 4.38)

4.38 Global outstanding OTC derivative contracts. Notional principal amount (left) and gross market value (right)



Source: BIS

4.39 Gross notional amount of derivatives compressed ($ Tn)



Source: Trioptima

According to the BIS, the decline in interest rate derivatives can be attributed to the increased use of compression, which has rapidly accelerated since 2009 (see Figure 4.39). BIS defines compression as the "process for tearing up trades that allows economically redundant derivative trades to be terminated early without changing each participant's net position."

ISDA considers that recent regulatory changes – and in particular, the Basel III leverage ratio – have increased the incentives for compression. According to ISDA, "the leverage ratio is based on gross notional exposures [rather than net exposures], encouraging banks to decrease the size of their derivatives portfolios to reduce the potential for hitting leverage-ratio constraints." Likewise, EMIR requires that firms analyse their OTC swap portfolios for compression opportunities in all asset classes.

The participation of cleared OTC derivatives has increased globally. EMIR required standardised OTC derivatives to be cleared through central counterparties (CCPs); derivatives which cannot be cleared are subject to bilateral margining arrangements. According to LCH.Clearnet data, the percentage of cleared OTC derivatives has increased from 20% to around 70% between 2008 and 2014 (Figure 4.40), suggesting success of reform.

According to a recent paper published by the BoE[40], this trend is likely to continue in the near future, boosted by the implementation of further clearing obligations in the European Union. The BoE expects that "general market practice (that is, firms progressively streamlining their arrangements for operational convenience), the introduction of the clearing obligation in the EU, and increased margin and capital costs in respect of non-centrally cleared transactions" should contribute to an increased use of central clearing. The BoE also argues that, going forward, it is not anticipated that the whole market will be centrally cleared as

[40] Arshadur Rahman (2015) "Over-the-counter (OTC) derivatives, central clearing and financial stability". Available here.

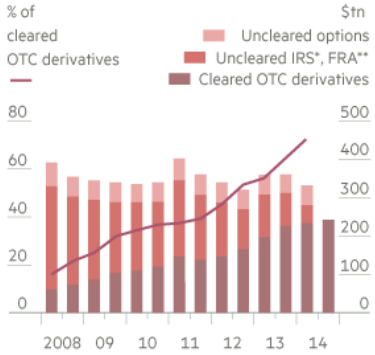
"there will always be a certain proportion of contracts that are inherently unsuited to central clearing because they are not sufficiently standardised and liquid."

The treatment of derivatives and non-cash variation margin is limiting the capacity of clearing members to clear for end-users. In particular, under the leverage ratio, non-cash variation margin, even if held in segregated accounts, needs to be included in the exposure measure. Cash posted as variation margin does not. This is inconsistent with the treatment of certain non-cash securities under the LCR where they are considered equivalent to cash and eligible for inclusion in the liquid assets buffer. Failure to recognise the exposure-reducing effect of such margin acts as a significant disincentive to central clearing, as margin will substantially increase a clearing firm's total leverage exposure, leading to an increase in the amount of capital required to support client clearing activities, which will lead to more clearing firms exiting the business thus concentrating risk among a smaller set of providers. It will also result in a reduction of clearing member capacity to clear for end-users.

According to analysis by Citi, the restrictions implied by leverage capital rules and the treatment of derivatives exposure by clearing members would imply a hike in clearing fees from "a few hundred of dollars to $6,000" [41] (assuming a clearing bank was seeking to earn a 15% RoE).

In a recent public appearance, Governor Mark Carney[42] highlighted the concern that the application of leverage ratio rules on clearing members could be possibly incentivising concentration, reducing diversity and harming financial stability for the system.

4.40 Percentage and volume of cleared OTC derivatives[43]



*Source: LCH.Clearnet and FT. * IRS: Interest Rate Swaps; *FRA: Forward Rate Arrangements*

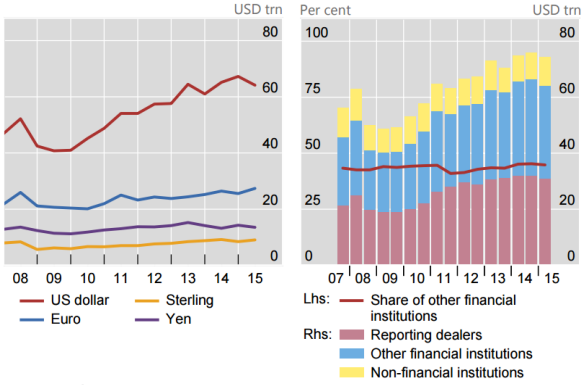
Foreign exchange derivatives make up the second largest segment of the global OTC derivatives market. FX derivatives outstanding have continuously increased since the 2009 crisis, from a notional amount of $50 Tn in 2009 to $75 Tn in 2015 (June), representing 13% of OTC derivatives. Contracts against the Euro and Sterling represented jointly around $30Tn of the foreign exchange derivatives market (Figure 4.41)

FX derivatives outstanding volume is closely correlated with real cross-border activity. With the 2009 crisis, total outstanding FX derivatives decreased from above $60 Tn to $50 Tn between 1H08 and 2H09. As global

[41] Risk.net, Carney: leverage ratio could limit clearing houses, available here.
[42] Idem.
[43] Graph sourced from FT, available here.

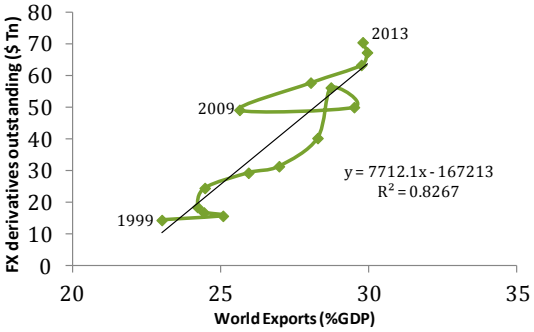
cross border activity has improved (described by world exports relative to GDP in Figure 4.42), albeit at a slow pace, the outstanding stock of FX derivatives has consistently increased on a global basis.

4.41 Outstanding OTC FX derivatives by currency (left) and counterparty (right)



Source: BIS

4.42 Notional amount of FX derivatives outstanding and World exports (% GDP)

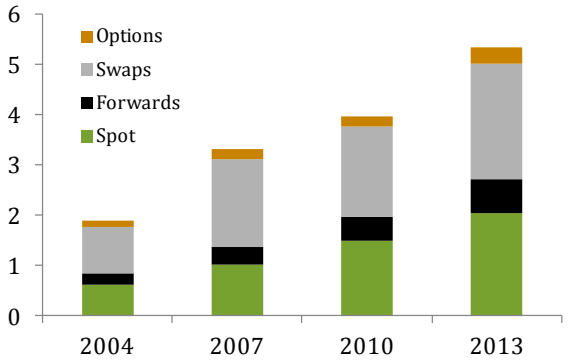


Source: BIS and World Bank

Global turnover of FX products (spot and derivatives) has continuously increased in the post crisis. According to BIS data, the average global turnover of FX products has increased from $1.9 Tn in 2004 to $5.3 Tn in 2013 (Figure 4.43)

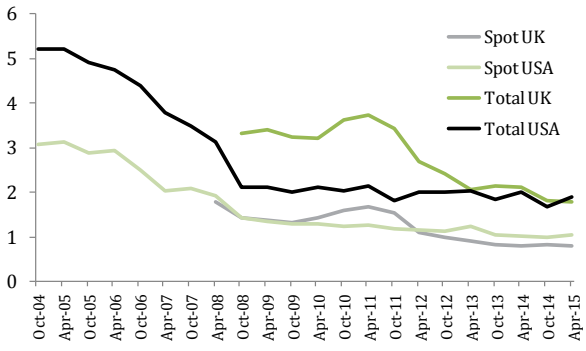
A relevant observation from recent FX global turnover activity is the decrease in the average value of trades across FX products. Indeed, according to data from the US and UK FX Central Bank committees, the average trade size of FX trading, aggregating Spot, Options, Forwards, and Swaps, has decreased from around $5mn (USA) and $3mn (UK) in 2004 to $1.9m and USD 1.8 m respectively (Figure 4.44).

4.43 Outstanding OTC FX derivatives by currency (left) and counterparty (right)



Source: BIS

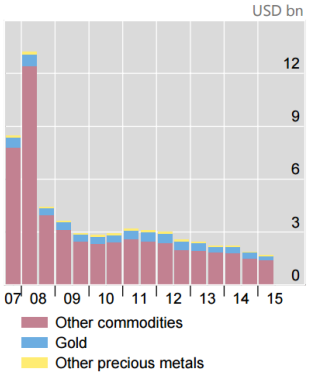
4.44 Average value per trade of Spot and all FX products (USD mn)



Source: FX Central bank Committees

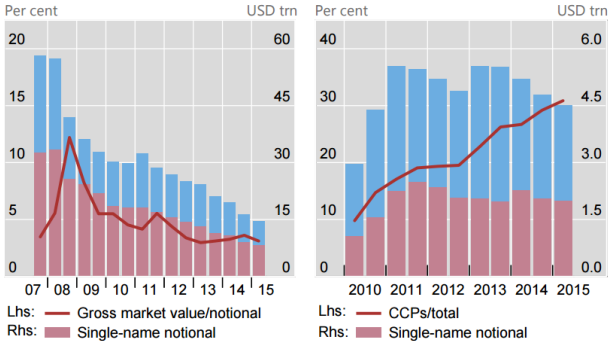
For OTC derivatives linked to commodity contracts, the latest data show no sign of a rebound from the sharp correction that occurred after the 2007–09 crisis. The notional amount of outstanding OTC commodity derivatives contracts declined from a peak of $13 trillion at end-June 2008 to $3 trillion at end-2009 and less than $2 trillion at mid-2015. The gross market value of OTC commodity contracts stood at $0.2 trillion at end-June 2015, down from the mid-2008 peak of $2.2 trillion (Figure 4.45)

4.45 Global outstanding OTC commodity derivatives contracts



Source: BIS

4.46 Global outstanding OTC CDS. Notional principal amount (left) and notional principal cleared with CCPs (right)



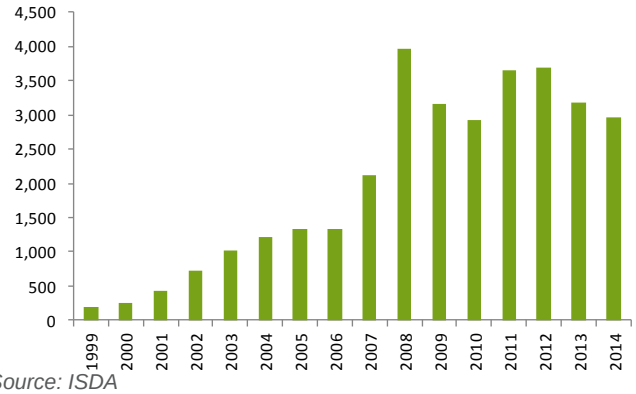
Source: BIS

Central clearing of CDS, which is a key element in global regulators' agenda for reforming OTC derivatives markets to reduce systemic risks, has risen continuously since 2010. The share of outstanding contracts cleared through CCPs rose from less than 10% in 2010 (when data for CCPs were first reported separately) to 26% at end-2013 and 31% at end-June 2015. In line with the overall trend in OTC derivatives markets, notional amounts cleared through CCPs declined in absolute terms between end-December 2014 and end-June 2015, from $4.8 trillion to $4.5 trillion (Figure 4.46).

The 2015 ISDA Margin Survey shows a small decline in the total amount of collateral supporting non-cleared derivatives transactions in 2014, in part due to a continued shift to central clearing. According to ISDA, "this shift has meant the collateral supporting cleared transactions has increased significantly. The number of client cleared collateral agreements also experienced sharp growth, as an increasing number of end users began clearing in response to regulatory changes."

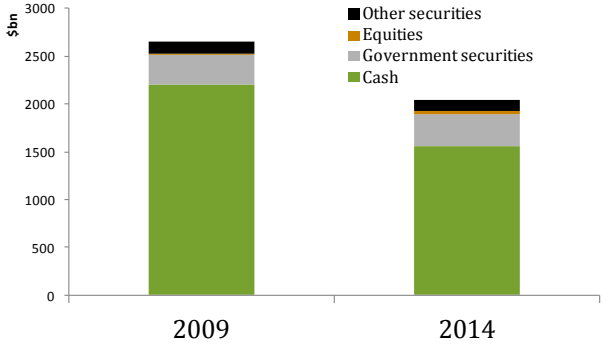
Total collateral (reported plus estimated) supporting non-cleared derivatives transactions decreased by 6.2%, from $5.34 trillion in 2013 to $5.01 trillion in 2014.

4.47 Value of estimated collateral ($bn)



Source: ISDA

4.48 Collateral received and delivered against non-cleared derivative transactions ($bn)



Source: ISDA

5 Conclusions

State of play in implementing the EU regulatory reform programme

Broadly, the following conclusions can be drawn about the state of play in implementing the EU regulatory reform programme:

- substantial prudential reforms to Europe's banking system have already been enacted and are in force;
- significant reforms are still to be fully implemented as part of the Basel III package – notwithstanding the potential components of 'Basel IV' which are now in development;
- Europe has a new single rulebook in force for some important areas of the wholesale markets, namely alternative investments and derivatives; however;
- large elements of the new regulatory framework for trading activity – particularly MiFID 2, SFTR and MAR – are not yet in force.

The general conclusion can be drawn that large elements of the markets reform programme are not yet in place. Thus, it is too early to assess evidence of the impact of such reforms, and only tentative conclusions can be drawn about potential impact. Much firmer conclusions can be drawn about the mpact of prudential reforms enacted thus far.

Structural change in the wholesale financial markets

Banks have deleveraged their balance sheets. Higher capital requirements and tougher risk-weighting has reduced lending capacity in the banking sector. According to EBA statistics, European banks have complied with the CET1 ratios with an increase of about 45% in CET1 capital from June 2011 to December 2014, and a decrease in RWAs of 20%. There is a correlation between reduction on assets and changes in risk-weighted capital charges.

Banks have substantially changed their structures from a business line perspective. Fixed income activities have become more funding and capital intensive and thus FICC business lines in Europe have been particularly affected by reform.

Banks' profitability structurally changed due to reform. According to the IMF's October Financial Stability Report, Banks located in advanced economies reported a RoE of 13% in the period 2000-2006, comparable with a RoE of 8% in 2014. European banks' profitability has been hit particularly hard, with the Eurozone financial sector experiencing a double dip. As a result, Euro area banks' cost of equity still exceeds their return on equity on average.

Improvements in financial stability in Europe

Banks' have made substantial progress on key stability metrics. For example:

- Since the crisis EU banks have raised around €318bn in fresh capital from the markets, of which €254bn is in equity and €64bn in CoCos and other convertible debt. As a result, the weighted average CET1 ratio of the EU GSIBs has increased from 10% in 2013 to 11.5% registered in September 2015.
- European banks by assets have adjusted their liquidity positions in compliance with the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). The LCR increased from 69% of the required level to 123% between June 2011 and December 2014 for the largest banks in Europe.

According to the EBA, as of December 2014, the largest banks have on average already reached 102% of the required NSFR buffer.

- Banks have improved their Leverage Ratios (LR), the amount of Tier 1 capital as proportion of their exposure measure. As of September of 2015, EU GSIBs have continued increasing their leverage ratios from 3.8% in December of 2013 to 4.6% in September of 2015.

Market pricing and other metrics reflect a substantial improvement in stability and resilience of banks in Europe. European bank CDS prices have fallen from between 200-400 bps during the crisis to more stable and lower risk perception of 100bps. Markets have internalised the end of too-big-to-fail. Asset size is no longer an advantage in terms of borrowing costs. It is noticeable however that banks' credit ratings are not mirroring the downward trend in borrowing costs.

There have been a number of recent assessments highlighting that financial stability has improved since the financial crisis – most notably in studies from the Financial Stability Board; the Commission; the ECB; and a recent industry study conducted by PwC. Generally, each study has concluded that financial stability in Europe has improved substantially; that much regulation remains in train; and that there are potential risks to stability arising from reduced capacity in the wholesale financial markets. The main concerns about the potential for unintended negative consequences of EU financial regulation relate to: long-term investment; credit allocation; market liquidity; and risk management.

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).

	Basel III				**Compen-sation**	**Over-the-counter (OTC) derivatives**				**Resolution#**			**Shadow banking**	
Reform Area	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
Agreed phase-in (completed) date	*2013 (2019)*	*2015 (2019)*	*2016 (2019)*	*2016*		*end-2012*	*end-2012*	*end-2012*	*Sep 2016 (2019)*					
Argentina	△				△								**	**
Australia	C												*	*
Brazil	C			&	△									**
Canada	C					D, F							**	
China	C	△			△	R, D, F					△		**	
France	MNC	△											**	*
Germany	MNC	△											**	*
Hong Kong	C	C											**	
India	C	LC			△	D, F								
Indonesia	△					R							**	
Italy	MNC	△										△		*
Japan	C					D								
Mexico	C	C				D							**	*
Netherlands	MNC	△											**	*
Rep. of Korea						D							**	
Russia	△				△								**	**
Saudi Arabia	C	LC				R, D							*	
Singapore	C	△											**	
South Africa	C	C			△	D, F							**	
Spain	MNC	△												*
Switzerland	C				△						△	△	**	
Turkey		△				D, F							**	
United Kingdom	MNC	△											**	*
United States	LC	△			△	D								

Legend

	• **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 *Key Attributes of Effective Resolution Regimes* 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 *Principles* and *Standards for Sound Compensation Practices* 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.
△	• **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 *Principles* and *Standards for Sound Compensation Practices* 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.
	• **Basel III:** Draft regulation published. • **OTC derivatives:** Regulatory framework being implemented. • **Resolution:** Element of resolution regime in the FSB *Key Attributes of Effective Resolution Regimes* 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 *Principles* and *Standards for Sound Compensation Practices* partly implemented (more than 3 *Principles* and/or *Standards* 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.
	• **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 *Key Attributes of Effective Resolution Regimes* 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	• **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	• **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.
&	• **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.
#	• **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.
*	• **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).
**	• **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).

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