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Structural reform study: Supplementary report 2

Inventory of bank responses to regulatory change

November 2014

pwc

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1. Executive summary

Since the financial crisis, the banking industry has undergone dramatic change, as banks and regulators have responded to the weaknesses exposed. The changes made have struck to the core of banks, challenging how and where they operate, and what services they provide.

This report summarises those changes, whether driven by new regulatory or commercial imperatives. Whilst EU banks have been the main focus of this study, due to the global impact that European structural reform will have, major Swiss and US banks have also been included.

Throughout the multitude of changes made across the industry post-financial crisis, a number of common themes emerge:

1. *The Recovery & Resolution process and group resolvability assessments are beginning to drive structural changes, which are improving resolvability and lowering systemic risk;*
2. *Banks are making strategic business changes which focus on servicing key end user clients, involving moves away from certain regions and businesses;*
3. *Banks have taken significant steps to strengthen, de-risk and deleverage their balance sheets through capital raising and asset reduction initiatives;*
4. *The creation of non-core divisions and the run-off of non-core assets have been a key driver in balance sheet strengthening, with the aim of reducing assets, exiting off-strategy areas and providing greater direction and customer focus to banks' remaining activities;*
5. *Supporting this balance sheet strengthening has been a move towards de-risking, both at a market level (e.g. OTC derivative reform) and at a bank level (e.g. cost reduction and enhanced risk management).*

1. Recoverability, resolvability, and other structural changes

Key points

- *The Recovery and Resolution process offers a mechanism for regulators to influence bank structures on a tailored basis, with new regulatory early intervention and resolvability powers*
- *Banks are already beginning to make structural changes in order to reduce systemic risk and improve resolvability. This can be seen in a number of areas:*
  - *The increased use of subsidiaries over branches*
  - *The growing subsidiarisation of booking models*
  - *The creation of global and intermediate holding companies to facilitate bail-in*
  - *The development of independent service companies to promote operational continuity*
- *Banks are simplifying and aligning to core services through organisational changes:*
  - *Of ten large representative banks studied, nine have restructured their investment banking business since 2009 to sharpen their focus on key clients and services*

In response to concerns about too-big-to-fail issues since the financial crisis, banks have been working to improve resolvability and to this end have taken actions to simply their legal structure and reduce entity interconnectedness.

Banks and regulators are developing organisation-specific Recovery and Resolution Plans (RRPs) in close dialogue with one another, and regulators increasingly have the power to influence all facets of the bank through enhanced intervention tools. All G-SIBs have already formally submitted resolution plans, and RRPs are currently being enhanced on a global basis. Whilst regulatory feedback suggests that there is still work to be

carried out on the plans, progress is being made towards the goal of allowing banks to fail without a wider risk to global financial stability.

In support banks are making structural changes, with perhaps the greatest change being the move towards greater subsidiarisation and the increased segregation of entities. Recent years have seen the greater usage of subsidiaries in foreign markets, as opposed to branches, with booking models across the industry trending towards a subsidiarised platform in line with regulatory expectations. Firms have also created new holding companies, at both a global and intermediate level, in order to facilitate resolvability in the event of bail-in, and independent service companies to promote operational continuity.

Banks are also aligning their business towards core services through organisational changes, and have made internal structural changes in order to calibrate themselves towards key clients and competencies. Of ten large representative banks studied, nine have restructured their investment banking business since 2009 to sharpen their focus on key clients and services. Whilst organisational change strategies have varied by institution, a number of firms have recently brought investment banking and corporate banking activities together, changes which may need to be undone in the face of structural reform and ring-fencing.

2. Servicing key end user clients

Key points

- *Banks are making strategic changes in order to serve key end user clients, and are consolidating in core areas of strength*
- *Firms have exited from businesses where they have low scale, in order to focus elsewhere:*
  - *Three-fifths of European-based banks studied have downscaled their commodities operations since 2009*
  - *Two-fifths of European-based banks studied have reduced their equities presence since 2009*
- *Proprietary trading activities have been reduced:*
  - *Of the European-based banks studied with proprietary trading activities pre-financial crisis, almost 90% have since announced a reduction in activities, with over half stating full business exits*
- *Many banks are also undergoing geographic downscaling, and are exiting from regions and jurisdictions in order to concentrate on areas of key strength and utility:*
  - *Just under a third of European-based banks studied have exited from Hong Kong, Japan, Korea or Singapore since 2009*
  - *A similar proportion of banks studied have sold their Swiss Private Banking business since the financial crisis*

To make best use of available capital firms are focusing on core business activities and customers, consolidating in areas of strength and downsizing in peripheral spaces. The pre-crisis model of universal banking is increasingly under threat as banks look to specialise.

Banks have announced significant moves from low scale businesses and product lines where they have faced increased capital requirements. This includes exits from some businesses where financial institutions play a key market making role and where non-financial institutions may not be able to pick up the slack (e.g. equities, where two-fifths of European-based banks studied have reduced their presence since 2009). There is also evidence of regulatory pressure driving exits, particularly with regards to proprietary trading in light of the US Volcker Rule.

Similar trends are also visible with geographic downscaling, as banks have exited from countries and regions with low market share in order to concentrate on regions and jurisdictions of key strength and utility. The specifics have varied by institution however some overarching trends are visible, namely downscaling in APAC and exits from Swiss Private Banking. Despite the pressure to reduce balance sheet size, however, some banks continue to expand into strategic markets, seeking growth and supporting connectivity for European corporates with emerging markets.

Banks have also looked to refocus on key clients and service areas in order to free-up capital and generate stable sources of revenue, repositioning themselves with clear strategies revolving around a core customer base. The route being taken differs by bank – some are emphasising the importance of large institutional clients whilst others are recalibrating towards smaller retail customers – however almost all are now able to better articulate their core client base.

3. Strengthening the balance sheet

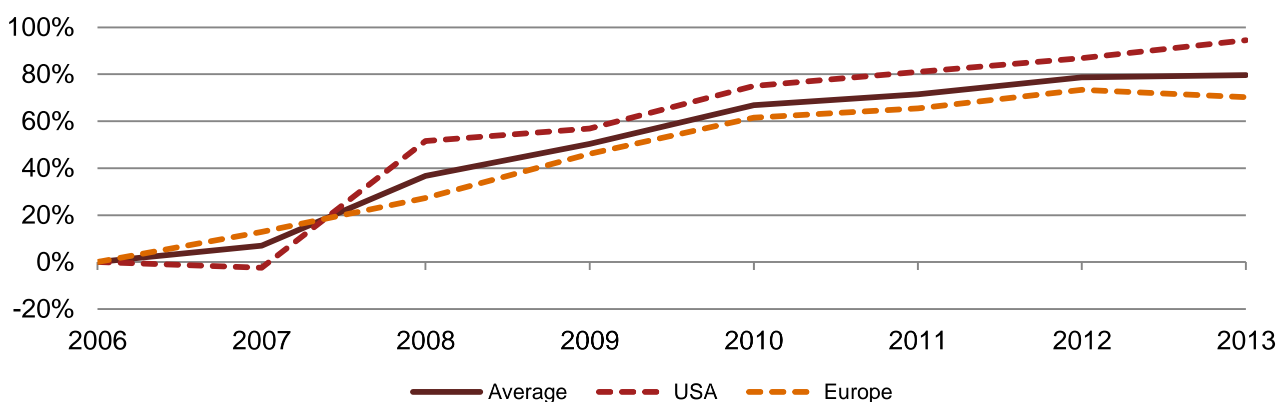
Key points

- *Banks have strengthened their balance sheets in response to the lessons learnt from the financial crisis and regulatory pressure*
- *Tier 1 capital has increased by 79.7% since 2006 across banks studied – an increase of €609bn across 24 banks. Total equity across the 24 banks has grown by two-thirds since 2006*
- *Across 24 banks studied, total assets fell 12.3% from a peak in 2008 to 2013, a reduction of €3.6tn*
- *Reported risk weighted assets (RWAs) have fallen by 7.5% since 2008across banks studied. Adjusted for changes in Basel methodology this reduction can be estimated at 11.6%, or €1.3tn across the 24 banks*
- *The average Common Equity Tier 1 (CET1) ratio stood at 10.9% at H1 2014, with all banks studied exceeding the minimum regulatory requirement for 2015, 2016 and 2017*
- *Leverage has improved across the industry:*
  - *All of the banks studied reporting the Basel III leverage ratio had a ratio above 3.0% as at H1 2014, with an average of 4.4% across the banks*
  - *Using a rudimentary leverage ratio of Tier 1 capital as a proportion of total assets, over 90% of the banks studied have improved their leverage since 2006*
- *Although the liquidity coverage ratio (LCR) is not due to be enforced until 2015, eight out of the ten banks who have disclosed pro-forma LCR figures were in excess of the regulatory minimum of 100%.*

Some of the most significant changes made since the crisis have revolved around balance sheet composition, particularly with the advent of Basel III and stricter capital requirements. In order to achieve the new regulatory capital and liquidity ratios, banks have been deleveraging their balance sheets through programmes of capital raising and asset reduction.

Since the financial crisis, banks have looked to boost capital and strengthen the balance sheet in line with regulatory expectations, particularly focusing on Tier 1 and Common Equity Tier 1 capital. Across 24 banks studied total Tier 1 capital grew by almost 80% between 2006 and 2013 (Figure 1), an increase of €609bn, whilst total equity across the banks has grown by two-thirds since 2006. Banks have used a variety of tools to achieve this capital increase, including share issues, business divestment, subsidiary floatation, dividend reduction, and issuance of contingent capital (CoCos).

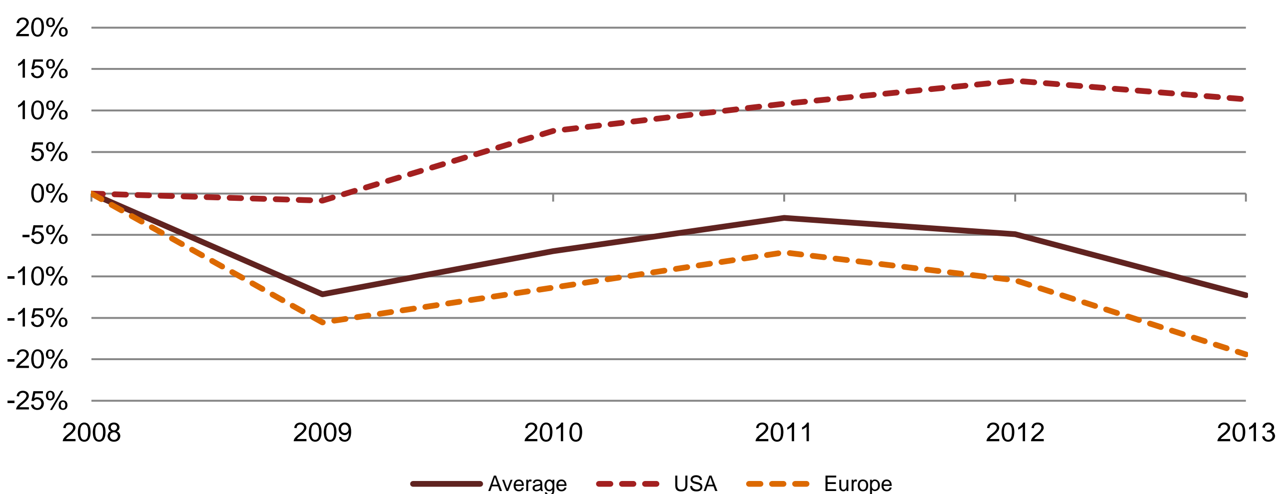
Figure 1: Tier 1 capital growth of 24 banks studied



Source: Annual reports/CapitalIQ

Capital increases have been supported by decreases in balance sheet size, both in terms of total assets and RWAs. Across 24 banks studied, assets have fallen by 12% since 2008 (a reduction of €3.6tn) as banks seek to solidify the balance sheet (Figure 2). European banks have outperformed their US peers with regards to asset reduction, and have cut total assets by 19% over the same period. This has driven a significant decline in RWAs – reported RWAs have fallen by 7.5% across sample banks since 2008, and adjusted for changes in Basel methodology this decrease can be estimated at 11.6% (€1.3tn across 24 banks).

Figure 2: Change in total assets of 24 banks studied



Source: Annual reports/CapitalIQ

As a result of these capital increases and RWA reductions, banks are currently making strong progress in relation to Basel III capital and leverage ratio requirements.

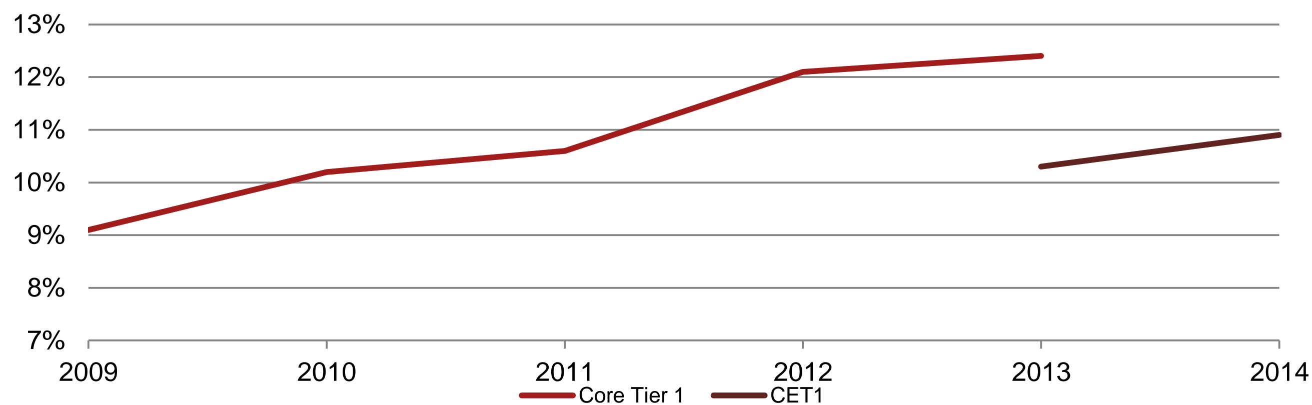
Since 2013 banks have moved to reporting Common Equity Tier 1 (CET1) ratios and these too have increased, from an average of 10.3% in 2013 across the 24 banks in 2013 to 10.9% by the end of H1 2014[1]. Additionally, taking into account the additional phased-in capital buffers and the G-SIB loss absorbency requirement, banks are performing ahead of the regulatory schedule.

[1] Due to data availability Santander UK CET1 ratio data has been used for average figures, rather than Santander Group.

Leaving aside the currently non-operational countercyclical buffer, all of the 24 banks studied at H1 2014 had already met the expected maximum fully phased-in 2019 regulatory CET1 ratio requirement of 9.5%[2]. Building upon this, the majority also have explicit plans and targets in place to further improve capital ratios. Although the EBA EU-wide stress test highlighted some shortcomings in the capital ratios of a number of European banks these tended to be amongst smaller institutions and no G-SIBs were deemed to have a capital shortfall.

The average Core Tier 1 ratio across 24 banks studied rose from 9.1% in 2009 to 12.1% in 2012, whilst the average Common Equity Tier 1 ratio across the banks stood at 10.9% at H1 2014 (Figure 3). With phased-in capital ratio requirements, and assuming that the maximum G-SIB loss absorbency buffer remains at 2.5%, all of the banks studied are in excess of the 2017 Basel III CET1 ratio regulatory maximum.

Figure 3: Average Core Tier 1/CET1 ratio of 24 banks studied



Source: Annual reports

Similarly, all of the banks sampled reporting the Basel III leverage ratio had a figure above 3.0% as at H1 2014, with an average of 4.4% across the banks. In addition, using a rudimentary leverage ratio of Tier 1 capital as a proportion of total assets, over 90% of the sample banks have improved leverage since 2006

These ratios are increasingly being tested under stressed conditions by regulators around the globe, with CCAR in the United States, the Comprehensive Assessment programme from the ECB (comprising both the stress test and Asset Quality Review), and UK-specific stress testing from the Bank of England. Early indicators from these regulatory analyses suggest that banks have improved with regards to capital adequacy, and that the majority (including all major institutions) are able to cope with stressed conditions.

Alongside this, banks are improving liquidity and funding in order to strengthen the balance sheet and have reported solid progress towards the future liquidity coverage ratio (LCR) and net stable funding ratio (NSFR).

Balance sheet strengthening has come at a price, however, as banks' ability to support assets has fallen as they become less leveraged. Using total assets that can be supported by a given amount of Tier 1 capital as a proxy for market capacity (i.e. the capacity of the balance sheet to undertake financial transactions), this has declined by approximately one-fifth across the bank between 2009 and 2013, and by one-third in the investment bank.

[2] This is comprised of the base CRD IV CET1 requirement (4.5% of RWAs), the fully phased-in capital conservation buffer (2.5%), and the G-SIB loss absorbency buffer (2.5%). Whilst the G-SIB loss absorbency buffer can be increased to 3.5% of RWAs, the current maximum attributed by the FSB to an institution is 2.5% (to HSBC and JP Morgan Chase).

4. Non-core initiatives

Key points

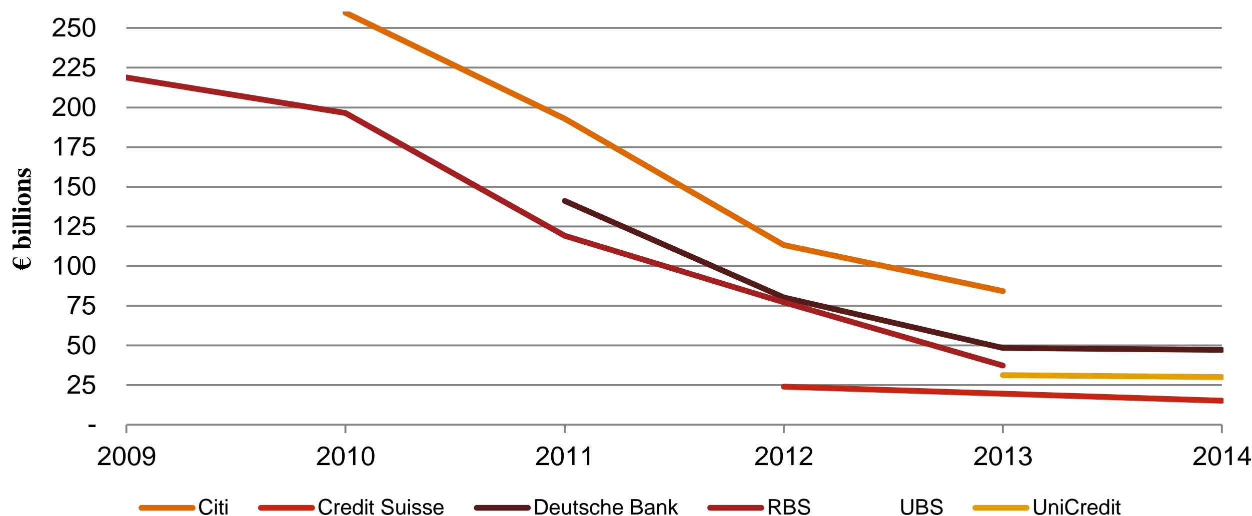
- *Banks are creating non-core divisions to manage, run-off and divest non-core assets*
- *Over half of the European-based banks studied have created segregated non-core divisions*
- *Over 90% of the European-based banks studied have built a non-core programme or portfolio*
- *A study of a subset of non-core divisions suggests that total assets have fallen by 71% within these divisions since inception (a reduction of €912bn across six banks)*

The movement towards strategic re-alignment and balance sheet strengthening has been supported through the creation of non-core divisions, which have helped to reduce assets, exit off-strategy areas and provide greater direction and customer focus to remaining activities. In some cases banks have formed specific divisions to manage, run-off, and divest off-strategy assets, whilst in others segregated portfolios have been created.

Of European-based banks studied, 54% have created non-core divisions, whilst 92% have created some form of non-core programme/initiative. Although non-core asset make-up is institution dependent there are some trends across the industry – a number of banks have moved their FICC business to non-core, whilst non-performing loan and mortgage portfolios are another frequent component of non-core divisions in the wake of the financial crisis.

Within these non-core divisions there has been significant asset reduction. Amongst a subset of six banks with non-core divisions where total assets have been reported, a cumulative asset reduction of €912bn within the divisions has been achieved since 2009 (equating to a decrease of 71%).[3] Where reported, RWAs have also fallen within non-core divisions (Figure 4, adjusted for changes in Basel methodology).

Figure 4: Non-core RWAs (adjusted) of six banks reporting the metric



Source: Annual reports

[3] Sample consists of Citi, Credit Suisse, Deutsche Bank, RBS, Société Générale, and UBS

5. De-risking of derivative markets and banks

Key points

- *OTC derivatives reform has strengthened the market:*
  - *Clearing requirements have helped to tackle systemic risk, whilst portfolio compression has reduced the size of the OTC derivatives market*
  - *Increased transparency around derivative pricing and volumes has been brought about through reporting and the ongoing move to exchange trading*
- *Banks have made significant cost savings since the financial crisis:*
  - *Across a subset of ten large representative banks, we have identified major cost savings programmes totalling approximately €25.7bn since 2009*
  - *Headcount has fallen by an aggregate of almost 200,000 between 2009 and 2013 across 24 banks studied, a decline of 6.1%*
- *Risk management has also been high on the agenda, with improvements made across all risk areas*

Underpinning the balance sheet strengthening underway across the industry has been a general de-risking, at both a global and bank level.

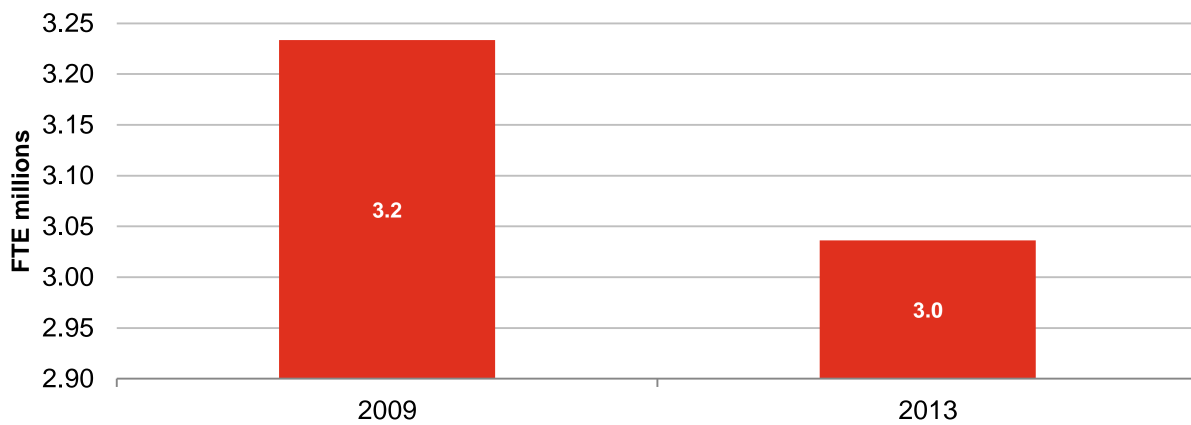
Actions taken by banks in response to derivatives reform (e.g. EMIR, Dodd-Frank Title VII) have strengthened the global derivatives market. Clearing requirements have reduced systemic risk, whilst compression has reduced the overall size of the OTC market. ISDA have estimated that through portfolio compression $239tn of interest rate derivative outstanding notional has been removed from the market since 2009 (30% of the current total), whilst the FSB have reported that almost half of the outstanding interest rate derivative notional is now cleared.[4] [5]The margining of uncleared derivatives will add further security to the market when fully implemented under BCBS/IOSCO rules and, furthermore, reporting requirements and the move towards exchange trading have resulted in increased transparency with regards to derivative pricing and volumes.

Finally, banks have responded to the financial crisis by strengthening core business fundamentals, particularly around operational costs and risk management. Significant savings have been achieved throughout the industry as a result of efficiency programmes, and across a subset of ten large representative banks we have identified major cost savings initiatives totaling approximately €25.7bn since 2009. The precise focus of each initiative varies by bank, however headcount reduction is a common and significant driver for cost savings – reported headcount fell by a total of 197,195 between 2009 and 2013 across 24 banks studied, representing a total reduction of 6.1% (Figure 5).

[4] ISDA Publication - Interest Rate Derivatives: A Progress Report on Clearing and Compression (February 2014).

[5] FSB Publication – OTC Derivatives Market Reforms: Seventh Progress Report on Implementation (April 2014).

Figure 5: Total headcount across 24 banks studied (2009-2013)



Source: Annual reports

Banks have also undertaken a number of risk management initiatives since the crisis, with improvements made across key risk categories such as market risk, credit risk and operational risk (including conduct and culture).

Although there is still work to be done and improvements to be made, the steps taken by banks since the financial crisis have been pronounced. As a collective body of change they have served to make the industry more resilient, and this robustness will only increase as the RRP process takes full effect.

2. Introduction

Banks have undertaken radical reorganisation since the financial crisis, changing many aspects of their business including structure, balance sheet composition, product offerings, geographic footprint, and risk and cost frameworks.

As Figure 6 shows, the extent of change since the financial crisis has been substantial across all of the themes and firms qualitatively studied as part of this report. Although not all banks have made significant changes in every area, the scale of change across the industry as a whole has been dramatic.

Figure 6: Extent of observed change since 2009

	Organisational restructuring	*RWA, capital & leverage*	*Proprietary trading*	*Non-core activities*	*Investment in risk management*	*Product/asset exits*	*Jurisdictional/regional exits*	*Change in target clients*	*Cost reduction initiatives*
ABN AMRO	✓	✓			+	✓	✓	+	✓
Banque Populaire	+	✓	✓	✓	✓	✓			✓
Barclays	✓	✓	+	✓	+	✓	✓		✓
BBVA	✓	✓	✓	+	✓	✓	✓		+
BNP Paribas	✓	✓	✓	+	+	✓	✓		✓
Citi	✓	✓	✓	✓	✓	✓	✓	✓	✓
Commerzbank	✓	✓	✓	✓	✓	✓	+		✓
Crédit Agricole	✓	✓	✓	+		✓	✓	✓	✓
Credit Suisse	✓	✓	✓	✓	✓	✓	+	✓	✓
Danske Bank	✓	✓		✓	✓	✓	✓		✓
Deutsche Bank	✓	✓	✓	✓	✓	✓	+	+	✓
HSBC	✓	✓	✓	✓	✓	✓	✓		✓
ING	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intesa Sanpaolo	✓	✓		✓	+	✓	✓		✓
Lloyds	✓	✓	✓	✓	✓	+	✓		✓
Morgan Stanley	+	✓	✓	+	✓	✓	✓	+	✓
Nordea	✓	✓		+	✓	+	✓		✓
Rabobank	✓	+		+	+	✓	✓		✓
RBS	✓	✓	✓	✓	+	✓	✓	✓	✓
Santander	+	✓	+	✓	✓	+	+	✓	✓
Société Générale	✓	✓	+	✓	✓	✓	✓	+	✓

	Organisational restructuring	RWA, capital & leverage	Proprietary trading	Non-core activities	Investment in risk management	Product/asset exits	Jurisdictional/regional exits	Change in target clients	Cost reduction initiatives
Standard Chartered	✓	✓	+	+	✓	+	+		✓
UBS	✓	✓	✓	✓	✓	✓	+	✓	✓
Unicredit	+	✓	✓	✓	✓	✓	✓	✓	✓

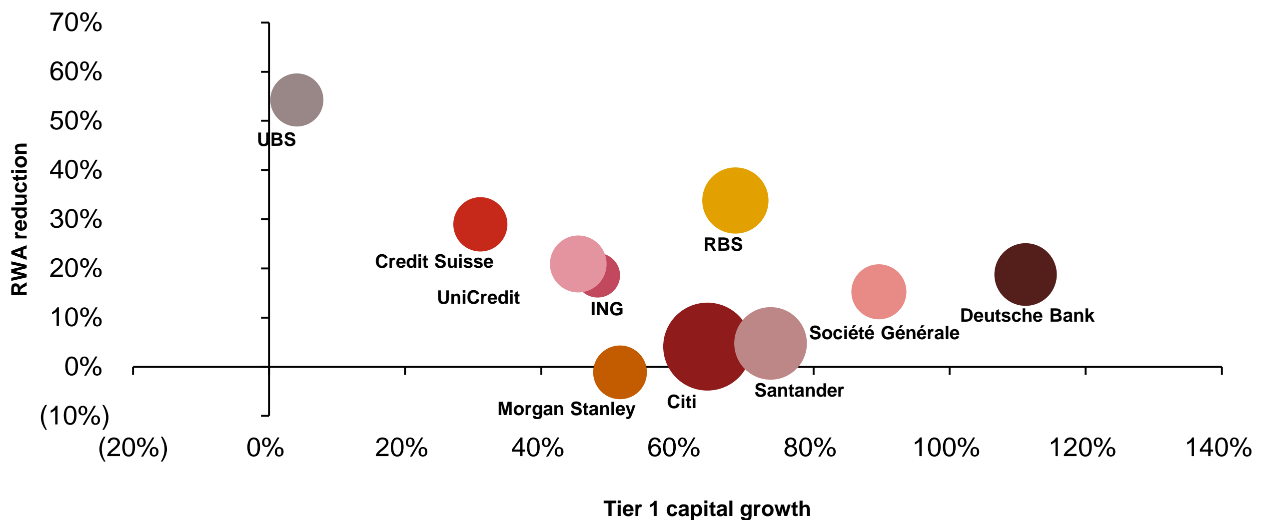
(✓ = Significant change observed; + = Some change observed; [Blank] = No evidence of change found)[6]

There are multiple drivers of these changes, including lessons learned from the crisis, an evolving market, and shifting client preferences. However it is perhaps the scale of regulatory change which has impacted to the largest extent upon banks, with both in-force and in-flight regulations touching upon almost all critical aspects of the industry.

In responding to these drivers, banks have made progress in enhancing the strength and security of the banking sector. However by no means have they followed the same path in doing so. Using just two key metrics, Tier 1 capital and risk weighted assets (RWAs), Figure 7 clearly displays that the priorities and routes taken have varied within the industry. [7]

This report will consider in more detail these differing steps and initiatives taken by leading institutions since the financial crisis. In particular it will consider this in the context of developing regulatory expectations and the shifting regulatory change environment.

Figure 7: RWA reduction (2008-2013) and Tier 1 capital growth (2006-2013) of ten focus banks



Source: Annual reports (bubble size reflects average revenue)

[6] No evidence of change found in sources studied. This does not necessarily mean that changes have not been made.

[7] RWA figures have been adjusted to take into account uplifts generated by changes in Basel methodology. RWA reduction from 2008 and Tier 1 capital growth from 2006 has been selected as these give the clearest indication of the scale of changes made since the financial crisis.

3. Methodology

In building this inventory of responses, publicly available information has been utilised, with a primary focus on annual reports and investor presentations. The majority of the evidence has been collected from 2009 onwards, however for some metrics the data has been extended back as far as 2006 in order to demonstrate the full scale of changes made since the financial crisis.

Publicly available sources have been utilised as this allows for standardised access to information across all banks. However the usage of public sources means that outcomes and activities have only been recorded where explicitly stated by banks, and therefore some actions and figures may not have been captured where not overtly in the public domain. A summary list of key sources can be found at the end of this section.

Although the area of coverage is diverse, research for this report has been carried out across ten core themes, outlined in Figure 8. These research themes have been selected as the key areas of change driven by recent regulatory reform, and were agreed at the outset of this report.

Figure 8: Report key research themes

(1) Organisational/legal entity restructure	(6) Creation of non-core subsidiaries/divisions
(2) Booking model restructure[8]	(7) Exit/downscaling from products and assets
(3) RWA, capital and leverage	(8) Exit/downscaling from regions/jurisdictions
(4) Reduction/exit from proprietary trading	(9) Change/reduction in IB target clients
(5) Investment in risk management, compliance and governance	(10) Major cost reduction initiatives

Across these ten themes, a total of 30 banks have been studied over the course of this report - a mixture of European and US institutions selected due to their presence within the European banking sector (Figure 9).

Figure 9: Sample banks for report (focus banks in bold)

European headquartered banks		US headquartered banks
ABN Amro Bank	***ING Bank***	Bank of America
Barclays	Intesa Sanpaolo	BNY Mellon
Banque Populaire	Lloyds Group	***Citigroup***
BBVA	Nordea Bank	Goldman Sachs
BNP Paribas	Rabobank	J.P. Morgan Chase
Commerzbank	***RBS***	***Morgan Stanley***
Crédit Agricole	***Santander***	Northern Trust
Credit Suisse	***Société Générale***	Wells Fargo
Danske Bank	Standard Chartered	

[8] In the case of booking model modifications, information is largely proprietary and therefore PwC market insight on a wholly anonymised basis has been used for this topic, with the emphasis on general industry trends rather than specific case studies.

European headquartered banks		US headquartered banks
Deutsche Bank	***UBS***	
HSBC	***Unicredit Group***	

The research for this report has comprised of a mixture of qualitative and quantitative elements:

Qualitative Research

- Qualitative research has been carried out with an emphasis on European banks
- Detailed qualitative research has been undertaken on ten focus banks (highlighted in bold in Figure 9). These have been selected as a sample of large representative banks, and are referred to as the "focus banks" studied throughout the report
- Further qualitative research has been undertaken on a wider group including all 22 of the European banks listed in Figure 9 plus the two US focus banks (Citi and Morgan Stanley). This sample has been used for statements of a non-financial nature and statistics derived from qualitative research. Due to the sample being largely European in composition, these are referred to as the "European-based banks" studied throughout the report
- For qualitative data involving investment banking operations, figures have been collected for the division(s) in which the majority of investment bank activities sit. This is not intended to be a precise sample of investment banking operations, and may differ in composition across institutions

Quantitative Research

- Quantitative research has been carried out across a spread of European and US headquartered banks
- Some detailed balance sheet metrics draw solely upon the ten focus banks
- For other more general financial metrics a sample group of 24 banks has been used, for which consistent financial data is available. These are referred to as the "24 banks" studied throughout the report
    - The 24 banks studied are listed in Figure 10 and include the ten focus banks, eight additional European headquartered banks and six additional US headquartered banks
    - The 24 banks studied have also been grouped by revenue for certain sections of the report, using average annual revenue between 2009 and 2013 (Figure 10)
    - These 24 banks studied are also aggregated and compared by geography elsewhere in the report

Figure 10: Sample financials banks grouped by revenue

Band 1 (>€30bn)	Band 2 (€20-30bn)	Band 3 (<€20bn)
Bank of America	Barclays	BNY Mellon
BNP Paribas	Credit Suisse	Commerzbank
Citigroup	Goldman Sachs	Crédit Agricole
Deutsche Bank	Morgan Stanley	Groupe BPCE
HSBC	Société Générale	ING
J.P. Morgan Chase	UBS	Intesa Sanpaolo
RBS	Unicredit	Northern Trust
Santander		Standard Chartered
Wells Fargo		

- This report concentrates on displaying the quantum of change within the banking sector rather than drawing out bank-on-bank comparisons; as such, there has been no attempt to standardise metric calculation methodologies across institutions
- When analysing RWAs, in some cases an uplift ratio has been calculated on a bank-by-bank basis to reflect uplifts generated by changes in Basel calculation methodology. This has been done to remove the effect of Basel methodology change as far as possible. The estimated uplift as stated by each bank in investor material has been used, with future figures adjusted accordingly. Figure 11 demonstrates how this has been calculated for one sample bank
- All figures stated in annual reports have been converted to Euros, where necessary, using a single exchange rate per currency as given in Figure 12

Figure 11: Example Basel uplift methodology

Deutsche Bank RWAs *(€ millions)*							
Year	**2009**	**2010**	**2011**		**2012**		**2013**
Methodology	*Basel 2*	*Basel 2*	*Basel 2*	*Basel 2.5*	*Basel 2.5*	*Basel 3 (FL)*	*Basel 3 (FL)*
Reported RWA	**273,476**	**346,204**	**327,246**	**381,246**	**333,605**	**401,000**	**350,143**
Uplift(s)	*N/A*	*N/A*	*N/A*	*16.5%*	*16.5%*	*16.5% + 20.2%*	*16.5% + 20.2%*
Adjusted RWA	**273,476**	**346,204**	**327,246**	**327,246**	**286,353**	**286,353**	**250,036**

Figure 12: Exchange rates used in report

USD to EUR	CHF to EUR	GBP to EUR
0.7870	0.8284	1.2778

Source: Bloomberg (29 September 2014)

This report also looks at the publicly available 2014 US Recoverability and Resolution Plans, as requested from banks by the Federal Reserve. Figure 13 outlines the sample group of nine banks used for this study. The institutions selected are those banking groups with US non-bank assets in excess of $250bn as stated by the Federal Reserve.

Figure 13: US RRPs studied (publicly available sections only)

Bank of America	Credit Suisse	J.P. Morgan Chase
Barclays	Deutsche Bank	Morgan Stanley
Citigroup	Goldman Sachs	UBS

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4. Regulatory background

Changes made by banks in recent years have been undertaken within the context of a changing regulatory environment; one of increased legislation and tighter regulatory supervision. This has had the goal of fostering greater stability and resilience within the banking sector.

Basel III (implemented in Europe through CRD IV) has been a major regulatory driver for change since the financial crisis, requiring banks to increase both the quantum and quality of the capital, liquidity and long term funding supporting the business whilst reducing balance sheet leverage. In an attempt to meet Basel requirements, banks have had to make fundamental changes to their global operations, particularly around capital and RWAs. This capital agenda will only be strengthened by the upcoming Fundamental Review of the Trading Book (FRTB) regulation, as well as the total loss absorption capacity (TLAC) initiative driven by the FSB, a key element of the Bank Recovery and Resolution Directive (BRRD).

Global derivative reform has also had a significant impact on the way banks function, with EMIR and Dodd-Frank Title VII already in force and MiFID II to follow in Europe in 2017. Banks have had to comply with clearing, reporting and risk mitigation requirements, whilst the move towards exchange rather than OTC trading marks a potential step-change in market structure. Additionally, the Volcker Rule, contained within the Dodd-Frank Act has had a major impact on proprietary trading within investment banks.

Banks have also been confronted with increased recoverability and resolvability requirements. With BRRD upcoming in Europe and Recover and Resolution Plans (RRPs) already on the table in the US for institutions with a large local presence, regulators will increasingly have the ability to influence organisational structure and business decisions in order to facilitate wind-down capabilities. From 2016, European regulators will have the power to intervene in banks under their oversight if operational continuity is not sufficiently demonstrated, covering all facets of the organisation including client service offerings, divisional structure, technology, infrastructure and key personnel. This is underpinned by the FSB's Key Attributes of Effective Resolution Regimes for Financial Institutions, which are being used at both an EU and global level as the international standards for resolution strategies and the resolving of failed financial institutions, first adopted in 2011 and last updated in October 2014.

Aside from specific legislative drivers, banks are progressively operating against a landscape of increased informal regulatory pressure, one of tighter day-to-day enforcement by local authorities even in the absence of specific regulation. This is particularly evident with regards to regulatory stress testing programmes, with CCAR in the United States operating since 2011 and the ECB and Bank of England bringing in their own comprehensive assessments in 2014. Local regulators are also increasingly looking to bring entities further under their oversight, informally encouraging subsidiarisation to this end.

In this context of regulatory change, banks have significantly restructured since the crisis. The next three sections will consider in detail some of these changes, covering three overarching themes:

1. Reshaping the business to a manageable core
2. De-risking the balance sheet and business
3. Reshaping the business to improve resolvability and accountability

5. Reshaping the business to a manageable core

In recent years, banks have looked to reduce risk and restore profitability across the business by refocusing on key product and service offerings. In order to make themselves more resilient, they have tended to downsize in off-strategy, low return products and regions, whilst consolidating in core business areas.

5.1. Reduction in proprietary trading

Almost 90% of European-based banks studied have reduced their stated proprietary trading activities since the financial crisis, with over half completely exiting the business. Risk in the trading portfolio has also declined – between 2011 and 2013 there has been a trend towards declining stressed VaR figures amongst the focus banks.

Banks have already begun taking measures to reduce proprietary trading, with dedicated desks and business units facing closure across the industry. 22 of the 24 European-based banks studied are known to have undertaken proprietary trading prior to the crisis, and of these 19 have since announced some form of reduction in activity (comprising 86% of the sample group). 13 of these have already reported full business exits, with a further 6 in the process of winding down operations. Of the 3 remaining banks, 2 have not explicitly indicated any form of downscaling – although this is not necessarily proof that reduction has not occurred. Figure 14 provides a summary overview of how some banks fit into this trend.

Whilst the decline in proprietary trading has been significant, further exits are on the horizon as banks look to reduce risk in the trading book and reposition the business towards clients. Morgan Stanley has recently stated plans to leave prop trading by 2015, whilst Barclays is reportedly seeking to divest its nQuants quantitative trading business in the coming year.

Figure 14:Sample downsizing of proprietary trading

Citi

- Began an official wind-down of proprietary trading in 2011, with Hedge Fund trading desk closed
- Equity Principal Strategies Unit shut in early 2012, which had previously been Citi's equities prop trading desk

Credit Suisse

- Announced the exit of all forms of proprietary trading in 2011, in order to reduce risk and enhance the focus on clients

Deutsche Bank

- Credit prop trading business shut down in 2009, with statement that all trading on own account was to be scaled back or discontinued
- Equity prop trading desks closed in 2010, with statement that all dedicated business units would be closed by mid-2011

HSBC

- 2011 statement that it has no dedicated proprietary trading desk

Lloyds

- 2013 statement that it has no segregated proprietary trading unit

Morgan Stanley

- Process Driven Trading (PDT) divested in 2012
- In-house quantitative trading unit sold in 2013

Standard Chartered

- 2013 statement that it has no dedicated proprietary trading desks

This reduction in proprietary trading has contributed to a fall in market risk exposure across the industry. Across the focus banks there has been a noticeable downwards trend in stressed VaR, with the figures for some firms falling by over half (e.g. ING, UBS). Linked to this, stressed VaR has become an ever more important part of the risk management toolkit as banks' methodologies become increasingly sophisticated and trading book volatility comes sharply into focus.

5.2. *Creation of non-core divisions*

Since the crisis, banks in Europe have created non-core divisions to divest and run-off non-strategic assets, with over half of the European-based banks studied creating segregated divisions and over 90% building non-core programmes. Amongst focus banks with separate divisions, total non-core assets have been reduced by 71% since inception, a fall of €912bn across six institutions.

To facilitate the movement away from high risk and capital intensive business areas, a number of banks have created dedicated non-core divisions to separately manage, wind-down and sell either non-strategic or poorly performing assets.

Of the 24 European-based banks studied, 13 have been recorded as creating non-core divisions, whilst 22 have explicitly formed some form of non-core programmes and run-off initiatives. Although non-core asset make-up is institution dependent, and assets from across the business feature in non-core, there are some noticeable compositional trends. Due to high capital requirements, a number of banks have moved their FICC businesses to non-core, whilst non-performing loan and mortgage portfolios have been placed in non-core in the wake of the financial crisis. Figure 15 outlines examples of non-core initiatives within focus banks, with some background on key asset composition.

Within these non-core divisions, there have been significant asset reductions. Amongst the six focus banks with non-core divisions where total assets have been reported, a reduction of €912bn of non-core assets within the division has been achieved since 2009 (equating to a decrease of 71%). Where focus banks with non-core divisions have reported RWAs (also six banks), these have fallen by just over €500bn in the same period, adjusting RWAs for uplifts generated by changes in Basel methodology (Figure 16).

Figure 15: Sample non-core initiatives

Banque Populaire

- GAPC "bad-bank" created within Natixis in 2009, initially housing €37.5bn of assets from the subprime debt crisis. Closed in Q2 2014, with €3.1bn of residual RWAs transferred to the wholesale bank

Barclays

- Barclays Non-Core established in December 2013 to run-off £110bn in RWAs - consisting of commodities, derivatives and emerging markets
- By June 2014 non-core RWAs stood at £87bn

Citi

- During 2009 organisational restructuring, non-core businesses (e.g. Brokerage, Asset Management, Consumer Finance, Special Asset Portfolio) were placed under Citi Holdings to be managed separately
- Strategy is for non-core division to break even by 2015

Commerzbank

- Portfolio Restructuring Unit created in 2009 to house non-client centric investments, including asset backed securities, structured credit products, and proprietary trading positions
- Non-core Assets Segment created in 2012 to run-off assets within commercial real estate, shipping financing and public financing
- Non-core run-offs are currently ahead of previously stated targets

Deutsche Bank

- Non-Core Operations Unit (NCOU) created in Q4 2012, largely comprised of commercial real estate, asset backed securities, monoline assets, the credit trading correlation book, the trading securitisation portfolio, and a selection of loan portfolios
- €141bn of RWAs were held in the NCOU upon its inception

RBS

- Non-core division created in 2008, before being dissolved in 2013 after exceeding internal run-off targets
- Capital Resolution division created in 2014 to manage the remainder of non-core assets, with plan to run-off all by the end of 2016

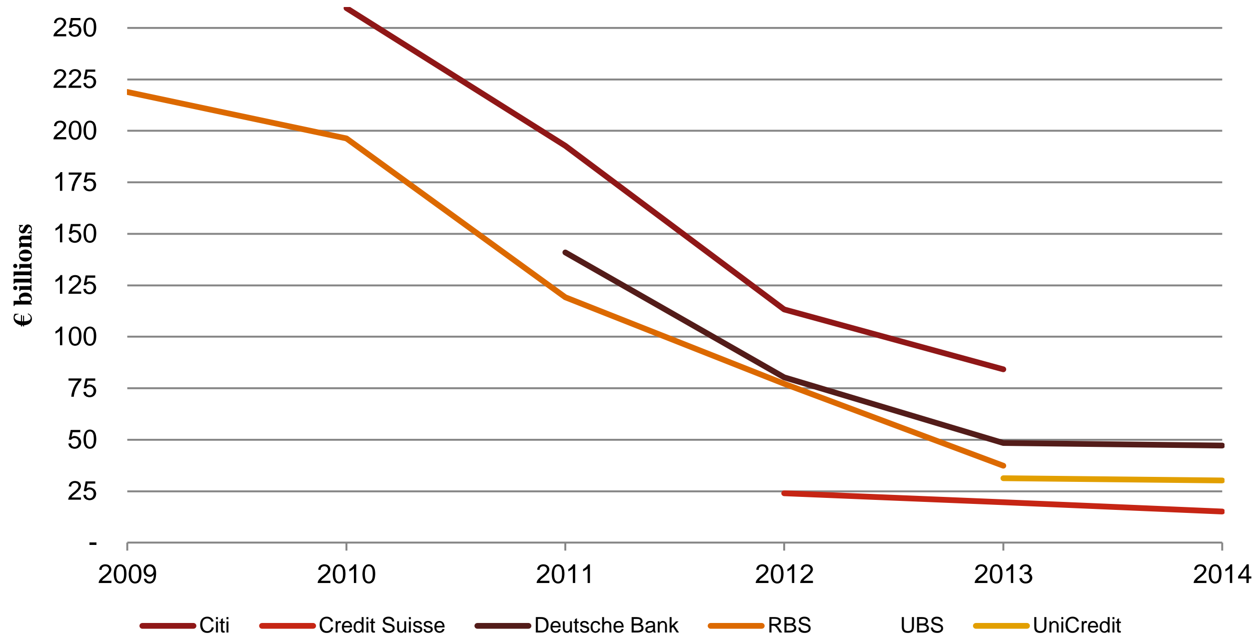
UBS

- Non-Core and Legacy Portfolio created in Q1 2013, mainly comprised of the FICC business, housing CHF103bn of RWAs
- 65% of reductions targeted by 2017 have been achieved by June 2014

The work being done on reducing non-core assets is still in progress and, as Figure 16 displays, the creation of segregated divisions has been staggered within the industry. Of the European-based banks studied, over two-fifths have explicit non-core reduction targets in place for 2015-16 as they look to continue the trend of RWA reduction. Even banks that have formally dissolved their non-core divisions are proceeding with similar

strategic disposals. RBS, which closed its non-core division in 2013 after meeting internal targets, has since created its Capital Resolution Division with the goal of shedding almost £40bn of assets by year-end 2016.

Figure 16: Non-core RWAs (adjusted) of six focus banks reporting the metric



Source: Annual reports

5.3. Product shifts

Banks have exited a number of non-core product lines, driven by an assessment of lower scale operations, capital requirements, and increased regulatory pressure. Three-fifths of banks sampled have downscaled in commodities since 2009, whilst almost two-fifths have reduced their equities presence.

Banks have moved away from offering certain products in order to strengthen the balance sheet and profitability and reduce risk exposure. Once again, the activity observed has been unique to each bank based on its individual positioning in the market, though some common themes are visible. The overarching trend has been for banks to withdraw from products and businesses where they have a low degree of market share, as they seek to achieve sustainable and stable profitability. There is also indication that increased regulatory pressure has played a role in a number of business exits.

The exit from physical and in some cases financial commodities has been particularly prevalent in recent years, with 14 of the European-based banks analysed stating a withdrawal since 2009. A sample of some of these exits can be seen in Figure 17. Poor performance in a saturated market has been the main driver for this downsizing, coupled with capital considerations (especially compared to the capital requirements of non-financial competitors). Some banks have also explicitly commented on the challenge of the new regulatory environment, with both Credit Suisse and Crédit Agricole referencing tougher regulations in the commodities market as partial reasons for their exits.

Figure 17:Sample downscaling in commodities

ABN AMRO – Exited carbon trading in January 2014

Banque Populaire – Sold commodities arm in 2013

Barclays – Announced wind-down of commodities business in February 2014, continuing only in precious metals and oil and gas derivatives

BBVA – Closed commodities trading desk in 2012

BNP Paribas – Sold North American Energy business in 2012

Citi – Sold energy trading unit in 2009

Crédit Agricole – Exited commodities in October 2011 due to increased regulatory requirements

Credit Suisse – Exited commodities trading due to recent performance and regulatory pressure in June 2014

Deutsche Bank – Exited trading in most commodities markets in 2013 for capital reasons, retaining a presence only in precious metals, derivatives and fund indices

Morgan Stanley – Exited agricultural products in 2013, as well as power and natural gas trading in some countries. Sold global oil trading business and oil storage business in 2014

Nordea – Reduced commodities trading in April 2014

RBS – Sold metals, oils and European energy businesses to JP Morgan

Société Générale – Sold North American power and gas business in late 2011 in order to release capital in the US

UBS – Since 2011 UBS have moved away from FICC in order to reduce capital consumption

Whilst banks have exited some areas traditionally peripheral to financial institutions, such as commodities, they have also downscaled from other businesses where they play key market-making roles. A number of European banks have downscaled from fixed income since 2009 (Figure 18), largely due to a combination of low profitability and the capital intensive nature of the business. Similarly, nine of the European-based banks studied have downsized in equities since the crisis (both cash and derivatives).

Figure 18: Sample downscaling in fixed income

Credit Suisse – Restructured the fixed income business in 2009 as part of an initiative to reduce volatility and release capital

Danske Bank – Closed Irish fixed income desk in June 2014, formerly part of National Irish Bank

Morgan Stanley – Investors informed in May 2013 that fixed income would have to downsize in order to maintain profitability

UBS – Exited FICC Asset Securitisation, FICC Complex Structured Products, and FICC Macro Directional Trading in 2011, as well as scaling back in FICC Global Correlation.

Increased regulatory focus (especially from the Volcker Rule), has also led to downscaling in private equity and hedge fund investments, particularly in American banks. Citi spun off its $6.8bn hedge fund business and portfolios to create Napier Park Global Capital in 2013, and sold its remaining hedge fund business later in the same year. European banks are also making similar moves – Credit Suisse sold its Private Equity Investments business in 2013, subsequent to the wind-down of its Asset Management Finance unit. Similarly, Banque Populaire's investment bank subsidiary, Natixis, divested of a $200m private equity portfolio in 2012.

Aside from scale and regulatory drivers, banks have exited businesses for capital reasons. Citi and Société Générale have recently sold asset management arms in order to reduce capital consumption, and other capital heavy businesses sold include pension funds (BBVA), aviation (RBS) and shipping finance (Commerzbank) – with Figure 19 proving further examples.

Some banks have sought to take advantage of reduced competition and have consolidated in core businesses. Since 2013, Santander has targeted growth in fixed income products, expanding in an area where a number of its competitors have cut their presence. Likewise BNP Paribas purchased RBS' equity derivatives in 2014 after also agreeing to buy Crédit Agricole's equity derivatives book.

Figure 19: Sample business exits for capital reasons

Citi

- Have sold companies as diverse as The Student Loan Company and Diners Club North America since 2009 in order to release capital

Credit Suisse

- Exited illiquid equities principal trading in 2009 for capital reasons
- Sold UK wealth management business (JO Hambro) and exchange-traded funds business in 2013 to release capital

Deutsche Bank

- Downscaled in 2009 around credit origination to distribute and illiquid businesses, in order to reduce capital consumption
- Exited securitisation and correlation trading business in 2011 and 2012, in order to focus on less capital intensive flow products

ING

- Conducted a portfolio review in 2009 to identify smaller businesses which were consuming disproportionate amounts of capital
- Since this ING review have sold annuities, insurance, wealth management and private banking businesses

Morgan Stanley

- Divested remaining ownership in MSCI (indices provider) in May 2009 for capital reasons
- In 2011 divested Revel (entertainment group) and Saxon (mortgage loan servicing company) in order to shed RWAs

Santander

- Have attempted to reduce the capital intensive real estate loan portfolio in the retail bank since 2009

5.4. Regional and jurisdictional shifts

Banks have tended to reduce their global footprint since the financial crisis in an attempt to focus on core markets and redeploy capital. Seven European-based banks studied have exited from smaller scale businesses in Hong Kong, Japan, Korea and Singapore since 2009, whilst seven banks have divested their Swiss Private Banking business in the same period driven partially by increased compliance costs.

Since the financial crisis banks have downsized from certain jurisdictions, with reasons varying from refocusing towards key markets, reducing costs, capital considerations, and responding to the changing regulatory landscape. Figure 20 highlights some of the strategies exhibited.

Lack of scale in a given market has remained the primary driver for regional shifts, as banks look to globally consolidate and concentrate on areas of stable profitability. This is evident in APAC – notably Japan, Hong Kong and Singapore – where low profitability and local competition have driven a number of banks to exit certain business lines in the region (Figure 21). Similarly, there have been several withdrawals from retail banking in Russia, as banks have experienced low penetration in challenging operating conditions. Santander and Rabobank both exited the Russian retail business in 2010, followed by Barclays, HSBC and Nordea – however it should be noted that whilst some have retreated from Russia a number have retained their investment banking presence in the country.

In some cases, regulatory pressure has been a factor in country exits since 2009. Recent downsizing in South Korea from firms such as Citi, HSBC, ING and Standard Chartered (although the latter retains a substantial presence) has partially been due to lack of scale and an increasing customer preference towards non-branch banking. However some have also suggested that a factor in these exits has also been increasing regulatory control over loan pricing and fee income. Equally the recent trend towards the divestment of low-scale Swiss Private Banking operations (Figure 22), with the number of foreign-owned Swiss banks dropping from 145 in May 2012 to 129 a year later, has been partially driven by increased compliance costs.[9] Of the European-based banks studied, seven have divested their Swiss Private Banking business since 2009.

Banks have also departed from countries and regions for sociopolitical reasons. Due to the increased risk of conducting business in unstable regimes, and the increased threat of regulatory fines, there have been withdrawals from such countries. Angola, Belarus, Congo, Egypt, Iran, Turkmenistan, and Uzbekistan have all been the subject of exits by banks sampled in this study since 2009.

[9] Bloomberg Article –" HSBC Said to Plan Sale of Swiss Private Banking Assets" (January 2013)

Figure 20: Sample country exits

ING

- Decided in 2009 to reduce geographic scope in order to reduce complexity and focus on core markets in Benelux, Germany and Eastern Europe
- Sold annuities and insurance businesses in Argentina and Chile
- Sold businesses in North America, including ING Canada, ING Reinsurance US, and three US retail broker-dealer units
- Exited joint ventures with ANZ in Australia and New Zealand
- Sold stakes in Indian retail banking unit and Indian life insurance unit in 2010, although retains a stake in ING Vysya in the country

HSBC

- Disposed of 74 businesses globally as part of sale of non-strategic investments since 2011
- By 2013, HSBC had terminated retail operations in 18 countries

Santander

- Although Santander have looked to expand since the crisis, they have exited some jurisdictions in order to raise capital
- In 2011 sold Columbian business, Latin American insurance business, and stakes in Brazilian and Chilean units to plug a capital shortfall

Société Générale

- Divested several overseas businesses since 2009 in an attempt to cut costs and meet capital requirements
- Disposed of Consumer Credit businesses in India, Hungary, Lithuania, Portugal, Slovakia, and Hungary in 2012
- Continued to shrink the balance sheet in 2012 with the divestment of Private Banking subsidiaries in the US and Canada

Unicredit

- After rapid expansion in CEE pre-2009, Unicredit have looked to sell non-profitable, capital intensive businesses in limited presence areas
- Sold Kazakhstani business in 2013 in order to boost Tier 1 capital
- Announced exit from Estonia and Lithuania in 2013, centralising its Baltic presence into Latvia to create synergies and efficiencies

Figure 21: Sample exits from APAC

ING

- Since 2012 ING has followed a strategy of exiting Asian Insurance and Investment Management businesses
- I&IM operations in China, Hong Kong, Korea, Malaysia, and Thailand sold in 2013
- I&IM operations in Taiwan sold in 2014
- Japanese life insurance business is the only remaining I&IM operation in Asia, and is to be included in the planned IPO of its European I&IM operations

RBS

- Sold retail and commercial banking operations in Hong Kong, Indonesia, Singapore, and Taiwan, in 2010
- Sold institutional businesses in the Philippines, Taiwan, and Vietnam, in 2010
- The above divestments were carried out in attempt to raise and free-up capital, and move away from non-core business areas

Société Générale

- Sold Japanese Private Bank to Sumitomo Mitsui in 2013, in order to simplify operations and focus on key growth markets
- Divested remaining Asian Private Banking business (primarily Hong Kong and Singapore) in March 2014 due to low margins and increased competition

However, other banks have expanded into strategic markets, showing that banks are still seeking growth areas and supporting connectivity with commercially expanding regions. Commerzbank has expanded its coverage from 46 countries in 2009 to 53 in 2013, including entering the Chinese market in 2010. Likewise, Santander has decided to expand in emerging markets, announcing in 2010 a repositioning towards countries with large

growth potential. In 2009, European-based business made up 64% of attributable profits for Santander, however, by 2013, this figure was just 43% after a concerted programme of geographic expansion.

Figure 22 - Sample exits from Swiss Private Banking

ABN AMRO – Sold Swiss Private Banking arm in 2011, in one of the first sales in the consolidation of Swiss Private Banking

HSBC – Sold a portfolio of Swiss Private Banking assets in June 2014, in order to reduce capital consumption

ING – Exited Swiss Private banking in 2009 as part of group-wide geographic scope programme

Intesa Sanpaolo – Sold Fideuram Bank Suisse (Swiss Private Banking subsidiary) in June 2011, although it continues to have a Swiss Private Banking presence

Lloyds – Ceased Swiss Private Banking operations in April 2014, as part of plan to reduce global footprint

Rabobank – Sold Swiss Private Banking business (Bank Sarasin) in 2011

Standard Chartered – Reports in early 2014 that Standard Chartered wished to divest its small Swiss Private Bank as part of a global strategic review of capital usage and returns, with a commitment to core growth areas and regions

5.5. Change in target clients

Since the crisis banks have refocused their business in order to service core clients, although they have differed in terms of strategies. 30% of focus banks studied have stated intentions to concentrate on large institutional clients, whilst others have chosen instead to prioritise smaller retail clients through the relevant divisions at the expense of the investment bank.

Prior to the financial crisis the prevalent trend was the movement towards universal banks acting in multiple markets, however enhanced capital requirements are forcing the industry to refocus on a core client base. Banks are increasingly specialising in sectors and client types, as customer strategy becomes more tightly defined.

To this end Deutsche Bank, Société Générale, and Unicredit have explicitly stated intentions to consolidate around large institutional clients within the investment bank, focusing on a smaller number of key accounts. Deutsche Bank made this a core pillar of their 2012 three-year strategy plan, whilst Société Générale's current investment bank strategy has institutional clients at its centre.

With capital a key concern, banks are increasingly concentrating on those clients who will provide revenue without a major impact on balance sheet consumption. Crédit Agricole, UBS and Unicredit have all stated that the investment bank strategy will be based around advisory to a greater degree, moving away from capital intensive business. Likewise, Nordea have recently publicised that their investment banking goal is to become an advisory and relationships business.

At the other end of the scale, some banks are deciding to move away from the provision of investment banking services, and instead are recalibrating towards smaller retail clients through retail banking divisions. This is particularly evident in those institutions that had historically been retail banks but built up an investment banking capability in the run-up to the crisis, such as Lloyds and RBS.

5.6. Reduction of costs

Since the financial crisis the ten focus banks in total have shed approximately €25.7bn from their cost base through major efficiency initiatives. Headcount reductions have been a key lever of this change, with overall headcount falling by over 116,000 between 2008 and 2013 within these banks, a fall in excess of 11%.

To support the reshaping of the business to a manageable core, banks have undertaken cost-cutting programmes with the aim of downsizing, streamlining and simplifying their business. Formal initiatives have been set up in almost all banks and, as a result, substantial savings have already been made (some of the initiatives across the ten focus banks are labelled in Figure 23, with approximately €25.7bn of savings).

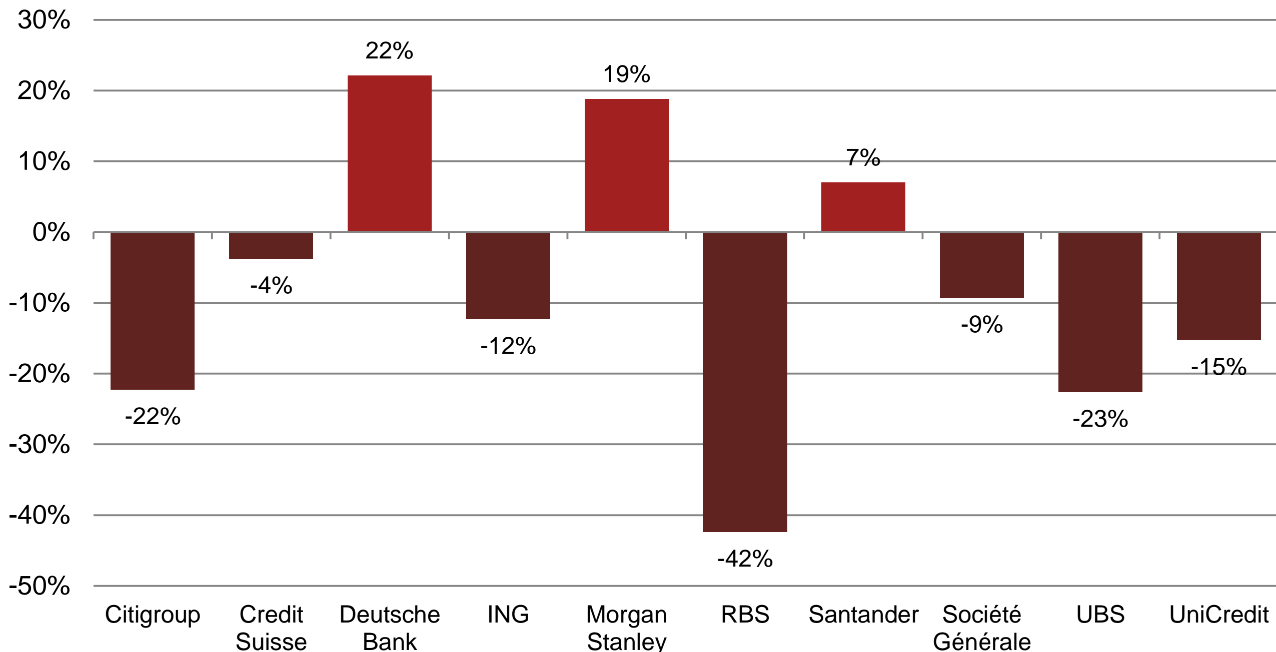
Figure 23: Sample major cost cutting initiatives in ten focus banks

Bank	Effective Dates	Annual Savings	Areas Targeted and Comments
Citi	2012-2013	$0.9bn	• Headcount reduction across the investment bank, the corporate bank, and within operations, technology and other support functions
Credit Suisse	2011-2015	CHF 4.5bn	• Wind down of non-strategic businesses, and headcount reduction • Infrastructure centralisation, and shared service integration • Initial target was savings of CHF 2.0bn by 2013, however this was expanded after target was met in advance
Deutsche Bank	2010-2011	€1.1bn	• Complexity reduction programme across the bank • Initiative focused on operating model, process optimisation, IT infrastructure, outsourcing arrangements and vendor/demand management
	2012-2015	€4.5bn	• Headcount reduction, process optimisation, and the re-engineering of compensation • Savings of €2.1bn by 2013, ahead of the targeted €1.6bn • Investment bank is a key area of cost reduction
ING	2009	€1.5bn	• Headcount reduction of over 11,000 • Initial target of €1bn of savings surpassed
	2012-2015	€0.9bn	• Strategic review in the commercial bank, with rationalisation of operations and simplification of coverage model • Reduction of booking locations and Front Office IT systems in the investment bank
Morgan Stanley	2011-2012	$1.6bn	• Focused around non-compensation expenses, particularly the merger of data centres and local offices to reduce real estate costs • Target reduction increased from $1bn after early success
RBS	2009-2013	> £3.0bn	• Bank-wide strategic plan aimed at increasing efficiency and reducing costs • Balance sheet rationalisation, run-off of non-core assets, business line disposal, risk framework enhancements, and headcount reduction • Target of £3bn exceeded by 2011
Santander	2013-2016	€1.5bn	• Group-wide savings plan, comprising of an efficiency programme and expected merger synergies
Société Générale	2013-2015	€0.9bn	• Head office restructuring, retail bank entity optimisation, and IT and infrastructure improvements
UBS	2011-2013	CHF 2.0bn	• Headcount reduction and the rationalisation of the real estate business
	2013-2016	CHF 3.4bn	• Investment bank simplification, organisational efficiency (particularly in the Corporate Centre), and process enhancements
Unicredit	2013-2018	€1.3bn	Business simplification, with associated headcount reductions

Where institutions have succeeded in meeting internal savings goals, many have chosen to expand their savings objectives. BNP Paribas, HSBC, UBS and Unicredit are all examples of banks that have increased efficiency targets after reaching planned levels ahead of schedule.

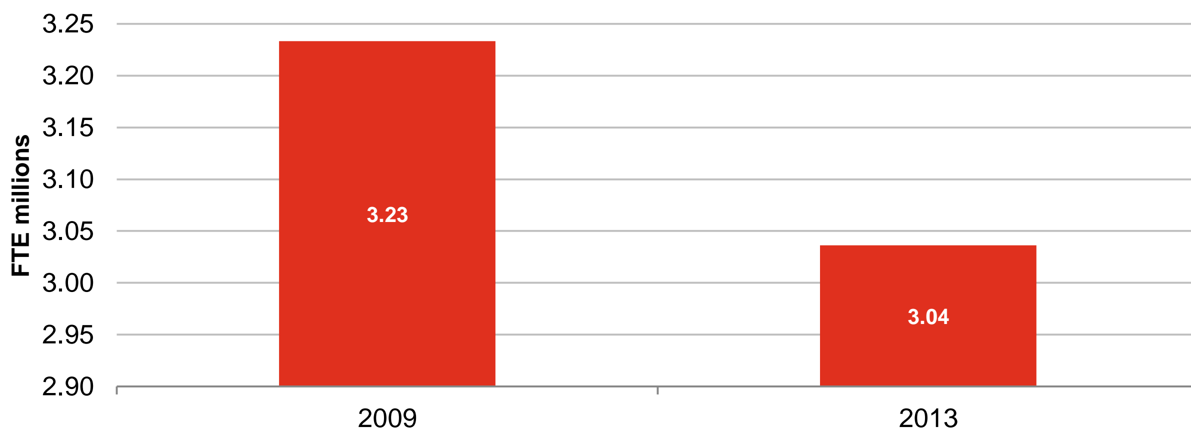
The main tool utilised for these cost savings has been headcount reduction, with significant job cuts across the sector since the crisis. Amongst the ten focus banks, overall headcount fell by 116,134 between its peak in 2008 and 2013 (Figure 24).[10] Headcount has also been widely reduced across 24 banks studied since 2009, with total headcount falling by 197,195 to 3.04m in 2013 (Figure 25), a fall of just over 6%. Investment banking divisions have been particularly hard hit, with those business areas housing investment banking activities seeing a greater degree of headcount reduction amongst the focus banks.

Figure 24: Headcount change in ten focus banks (2008-2013)



Source: Annual reports

Figure 25: Total headcount across 24 banks studied (2009-2013)



Source: Annual reports

However, numerous routes have been taken with regards to cost reduction. As displayed in Figure 23, banks have concentrated on a number of different areas to realise savings, including IT enhancement, divisional realignment, operational synergies, and infrastructure optimisation.

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[10] The headcount figures of Deutsche Bank and Morgan Stanley have been affected by major acquisitions. Deutsche Bank acquired Postbank in 2010 (with over 20,000 FTE), and Morgan Stanley acquired Smith Barney in 2009 (with over 10,000 FTE).

6. De-risking the balance sheet and business

Building on the changes discussed in the previous section, banks have undertaken a significant de-risking of both their balance sheets and their business. Through reducing assets and increasing their capital bases, banks have made themselves more resilient.

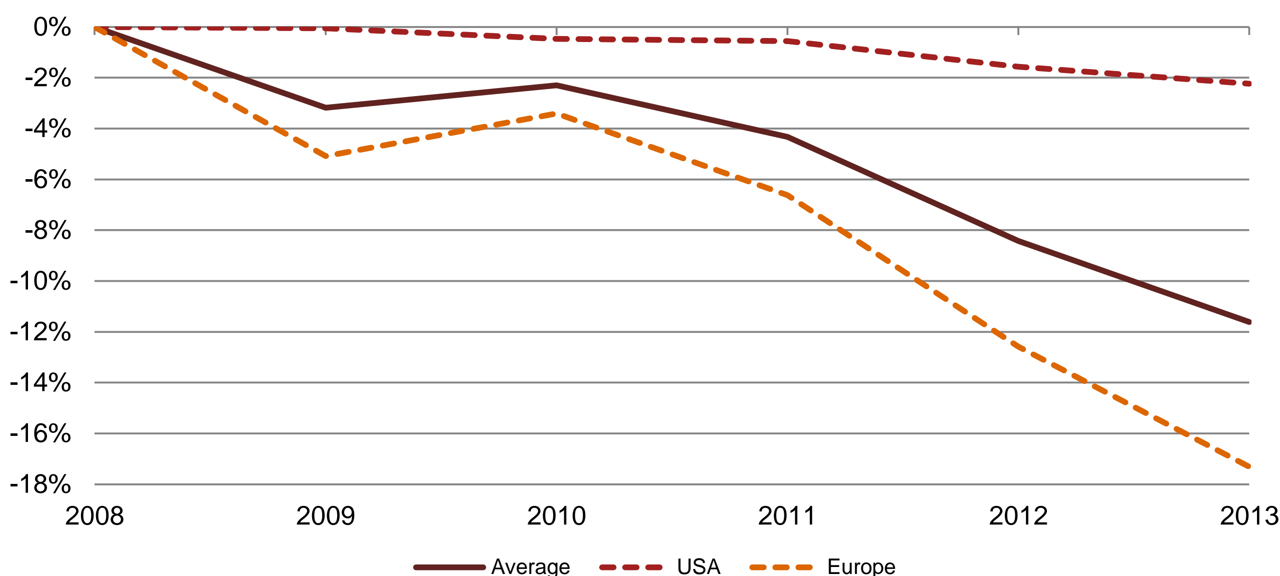
6.1. RWA reductions

As banks have looked to increase capital ratios RWA reduction has been one option, with RWAs falling by an estimated 11.6% across 24 banks studied from a peak in 2008 to 2013 (adjusting RWAs for uplifts generated by changes in Basel methodology). This has been driven by a wider reduction of total assets, with total assets dropping by 12.3% during the same time period (a decline of almost €3.6tn). European banks have cut assets to a greater extent than their US counterparts.

Banks have invested significant effort in driving RWA reductions. Following the crisis, RWAs have been central to banks' strategies – of the European-based banks analysed, over half have publicly set themselves RWA reduction targets in addition to their overall capital ratio goals. As considered above, the creation of non-core divisions has also aided banks in reducing RWAs, through the run-off and divestment of off-strategy assets.

As reported, total RWAs across the 24 banks studied fell by 7.5% from 2008 to 2013 (a reduction of €845.4bn). However, this figure does not take into account changes in RWA calculation methodology. At various points in time, banks have reported using Basel I, Basel II, Basel 2.5, Basel III (Phase-In) and Basel III (Fully Loaded) methodologies. When the uplifts generated by methodology changes are taken into consideration, the like-for-like decrease in RWAs is significantly larger. It can be estimated that RWAs on a like-for-like basis have fallen by 11.6% from a peak in 2008 to 2013, a reduction of just over €1.3tn (Figure 26).

Figure 26: Change in adjusted RWAs of 24 banks studied (by geography)

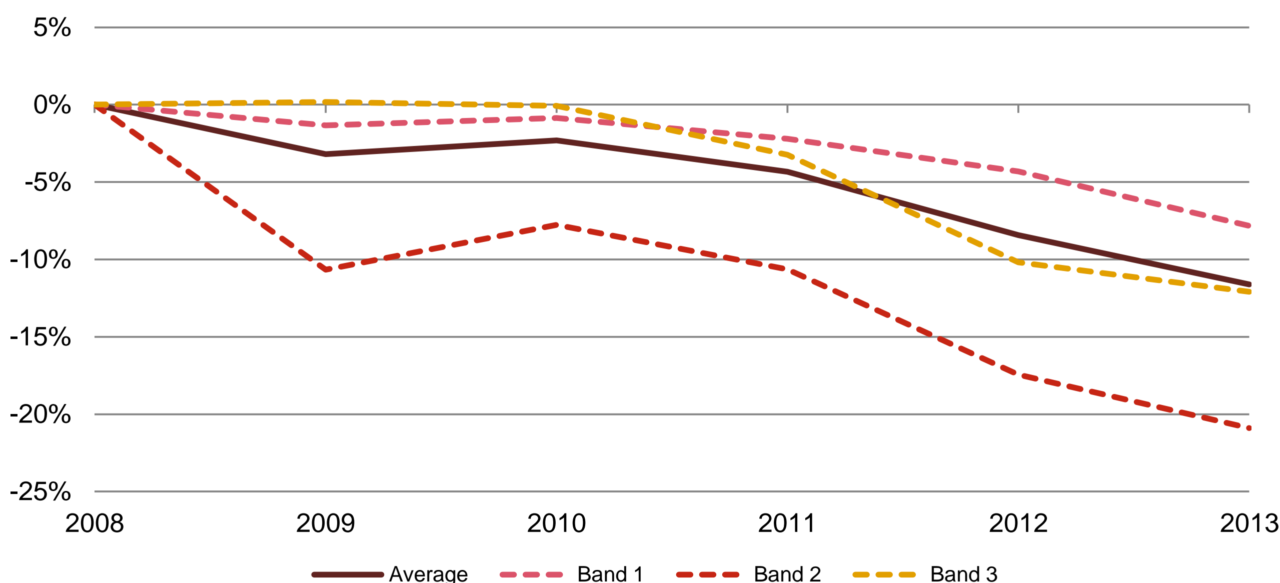


Source: Annual reports/CapitalIQ

There have been different trends observed amongst European and American banks with regards to RWA reduction (Figure 26), with European headquartered banks reducing RWAs faster than their US headquartered peers. Adjusted RWAs fell by an estimated 17.3% amongst the European component of the banks studied (€1.2tn across 16 firms), whilst the eight US banks in the study cut RWAs by 2.2% over the same time period (a decrease of €94.6bn).

More trends can be observed by splitting banks into three tiers based on their average annual revenues (Figure 27), with Band 1 banks being the largest. Whilst total adjusted RWAs across all revenue bands reached a peak in 2008 before declining, RWA patterns differ by bank size. Banks in the middle revenue band achieved the greatest relative reduction, with a decrease in adjusted RWAs of 20.9% between 2008 and 2013, followed by Band 3 banks (a reduction of 12.1%) and Band 1 banks (a reduction of 7.8%).

Figure 27: Change in adjusted RWAs of 24 banks studied (weighted by revenue)

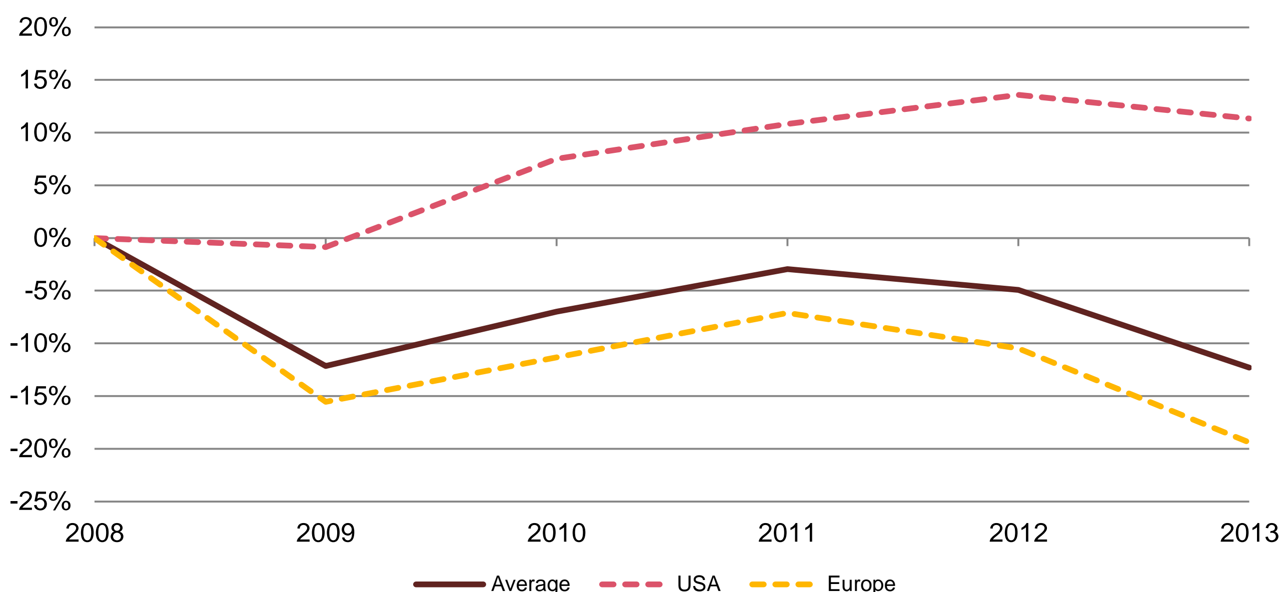


Source: Annual reports/CapitalIQ

Where public information allows, it is also apparent that RWA reductions have been concentrated in the investment bank. Seven of the ten focus banks have separately recorded RWAs for divisions housing investment banking activities, and between 2010 and 2013 these fell by almost 30%, from €1.1tn to €790bn – without factoring in uplifts generated by changes in Basel methodology.

Driving this reduction in RWAs has been a decrease in total assets. Total assets held across 24 banks studied reached a peak of €29.2tn in 2008 and have since fallen by €3.6tn between 2008 and 2013, a decline of 12.3%. Again it is the 16 European banks that have reduced their balance sheet the most, cutting assets by 19.4% (€4.4tn) from 2008 to 2013. The eight American banks' assets, conversely, increased by 11.3% over the same period. This can be seen in Figure 28.

Figure 28: Change in total assets of 24 banks studied (by geography)



Source: Annual reports/CapitalIQ

6.2. Increasing capital, liquidity and funding

Tier 1 capital across the 24 banks studied has increased by almost 80% since 2006, with US headquartered banks growing their capital base at a higher rate than European banks. Progress has been made against regulatory capital ratios, and across the 24 sample banks the average CET1 ratio stood at 10.9% as at H1 2014, ahead of regulatory timelines. Banks have also taken steps to improve liquidity and funding.

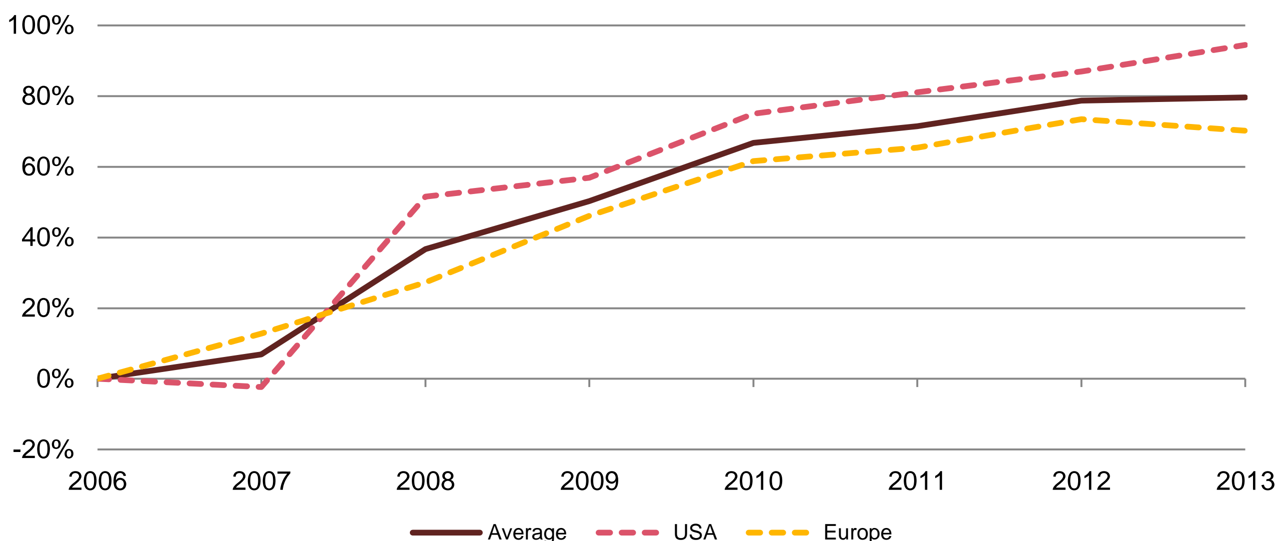
Banks have also taken steps to improve balance sheet strength by increasing their capital reserves. Across 24 banks studied, total Tier 1 capital held stood at €0.8tn in 2006, which had risen by €609.2bn by 2013, an overall increase of 79.7%. As with asset reduction, there are also clear geographical trends with American banks engaging in more intensive capital raising programmes, which have allowed them to cut assets to a lesser extent (Figure 29).

Through analysing the sample financials banks grouped by revenue, it is evident that all three revenue bands have made progress in increasing their capital base. The Tier 1 capital of the largest banks (Band 1) increased to the greatest degree, by 90.8% from 2006 to 2013 (a total increase of €391.9bn). Band 2 banks achieved a gain of 57.8% whilst Band 3 banks achieved a 77.0% boost in capital.

Furthermore, the quality of capital has improved, with Basel III and CRD IV eliminating Tier 3 capital, changing definitions of hybrid capital and introducing Common Equity Tier 1 (CET1). In response banks have raised equity levels, which from 2006 to 2013 have grown by 66.6% across the 24 banks studied (an increase of €678.7bn). Figure 30 displays the change in equity levels at the ten focus banks since 2009.[11] Linked to this common equity has also increased across the industry, with a rise in common equity levels of 67.9% between 2006 and 2013 across the 24 banks.

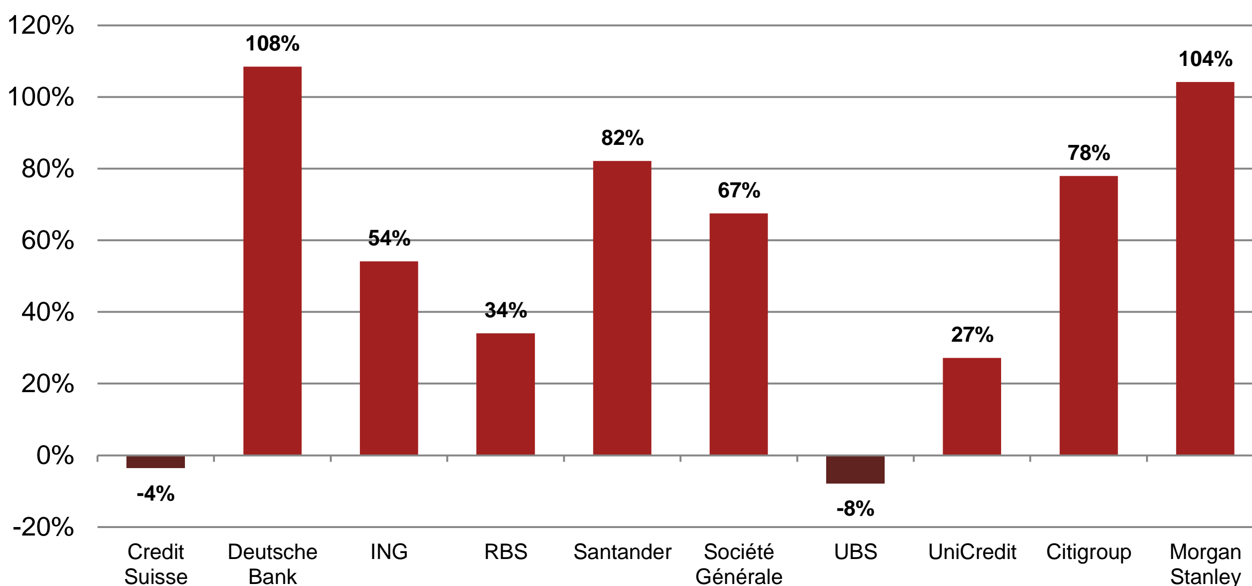
[11] It should be noted that Credit Suisse's total equity rose 8.2% from 2006 to 2013, before a fall in H1 2014 due to the purchase of subsidiary shares from non-controlling interests, dividend pay-out, and a reported loss. UBS' total equity has risen by 21.0% since 2007, after a fall in 2006.

Figure 29: Tier 1 capital growth of 24 banks studied (by geography)



Source: Annual reports/CapitalIQ

Figure 30: Change in equity in ten focus banks (2006-2014,H1)



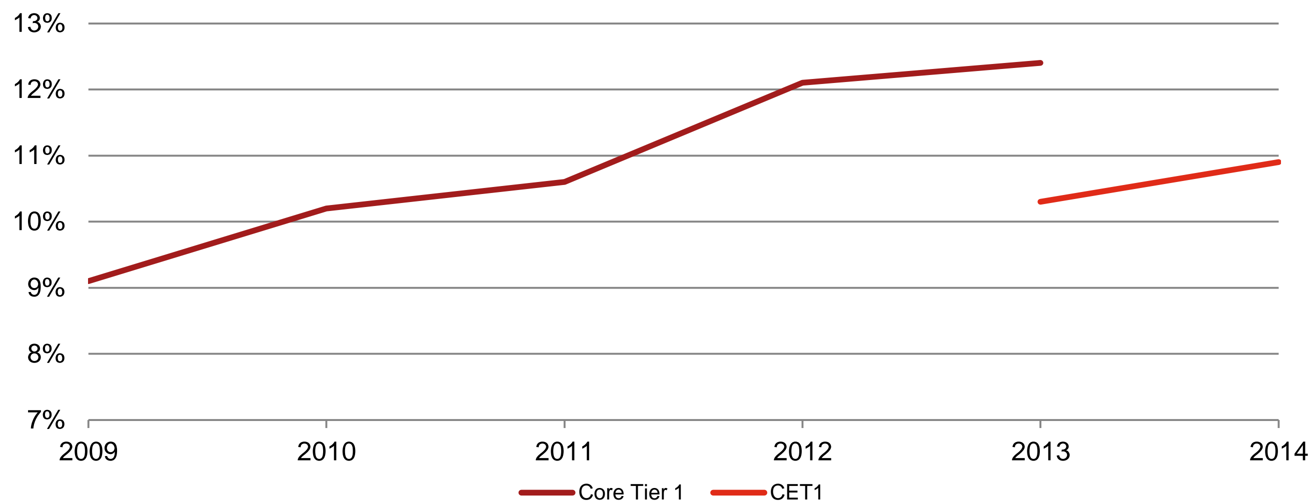
Source: Annual reports

These raises, combined with declining RWAs, have seen capital ratios increase – a key component of Basel requirements. Average Core Tier 1 ratios across the 24 banks studied rose from 9.1% in 2009 to 12.1% in 2012 (Figure 31). Since 2013 banks have moved to reporting Common Equity Tier 1 (CET1) ratios and these too have increased, from an average of 10.3% in 2013 across the 24 banks in 2013 to 10.9% by the end of H1 2014[12]. Additionally, taking into account the additional phased-in capital buffers and the G-SIB loss absorbency requirement, banks are performing ahead of the regulatory schedule.

[12] Due to data availability Santander UK CET1 ratio data has been used for average figures, rather than Santander Group.

Leaving aside the currently non-operational countercyclical buffer, all of the 24 banks studied at H1 2014 had already met the expected maximum fully phased-in 2019 regulatory CET1 ratio requirement of 9.5%[13]. Building upon this, the majority also have explicit plans and targets in place to further improve capital ratios. Although the EBA EU-wide stress test highlighted some shortcomings in the capital ratios of a number of European banks these tended to be amongst smaller institutions and no G-SIBs were deemed to have a capital shortfall.

Figure 31: Average Core Tier 1/CET1 ratio of 24 banks studied



Source: Annual reports (2014 figure is for H1 only)

Of the 24 banks studied, as at H1 2014 all were reporting CET1 ratios in excess of the theoretical 2015, 2016, and 2017 maximum regulatory levels (4.5%, 8.25%, and 9.5% respectively). Over two-fifths had CET1 ratios above the 2018 maximum of 10.75% whilst one-sixth were already reporting a CET1 ratio greater than the fully phased-in 2019 ceiling of 12.0%. Although the EBA EU-wide stress test highlighted some shortcomings in the capital ratios of a number of European banks these tended to be amongst smaller institutions and no G-SIBs were deemed to have a capital shortfall.[14]

In raising this capital, banks have used the full variety of tools at their disposal (Figure 32). Methods used have included share issues, business divestments, floatation of subsidiaries, reductions in pay-outs/dividends, and scrip dividends. Overall, banks have undertaken a number of record capital increases in recent years; Deutsche Bank's rights issuance in 2010 was the largest in its history and other banks have raised similar sums.

A number of banks have also issued contingent capital in order to strengthen the balance sheet (CoCos), which absorb losses when the issuing bank's capital levels fall to below a prescribed level. In some cases, such as with Lloyds in 2009, banks are selling debt that converts to equity if capital ratios decline beyond a certain threshold. However a more recent trend is for 'wipeout' bonds, which are written off entirely when capital holdings fall. Barclays, Credit Suisse and UBS have recently issued bonds structured in this manner since 2013, in order to boost loss-absorbing capital in a relatively risk-free manner.

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[13] This is comprised of the base CRD IV CET1 requirement (4.5% of RWAs), the fully phased-in capital conservation buffer (2.5%), and the G-SIB loss absorbency buffer (2.5%). Whilst the G-SIB loss absorbency buffer can be increased to 3.5% of RWAs, the current maximum attributed by the FSB to an institution is 2.5% (to HSBC and JP Morgan Chase).

[14] EBA Publication – Results of 2014 EU-wide stress test, Aggregate results (October 2014).

Figure 32: Sample private sector capital raising initiatives

ABN AMRO - Temporary reduction in pay-out ratio proposed in 2012 to assist in the building of capital buffers

BBVA - Exchanged €3.5bn of preference shares into equity-convertible bonds in 2011, boosting core capital

Deutsche Bank - 2010 rights issuance raised €10.1bn of capital, the largest single capital increase in the bank's history. Further rights issuances in 2013 and 2014 raised €3.0bn and €8.5bn respectively

HSBC - Raised £12.5bn in a 2009 rights issuance

Santander - Share issuance raised €7.2bn in 2008-2009, followed by a further 2010 issuance. Subsidiaries have been floated to raise capital – IPOs of Santander Brazil (2009) and Santander Mexico (2012) have taken place. Scrip dividends have been used to raise capital on a regular basis since 2009

Standard Chartered - Raised $5.0bn in 2010 rights issuance

Société Générale - Raised €4.8bn through a rights issue in 2009

Unicredit - Capital has been increased through two rights issuances since 2009. €4.0bn raised in 2010, followed by €7.6bn in 2011

Supporting this capital increase, banks have also enhanced liquidity since the financial crisis, something encouraged by regulators through the introduction of the Liquidity Coverage Ratio (LCR). Although the LCR is not due to be enforced until 2015, with a subsequent phase-in to 2019, eight of the ten focus banks have given indications of their pro-forma LCR figures, and of these all were in excess of the regulatory minimum of 100% (Figure 33). In order to achieve this, banks have looked to bolster highly liquid assets. Across the banks studied, cash reserves and highly rated sovereign debt holdings have increased in order to build a secure and liquid asset buffer.

Similarly, banks have strengthened the balance sheet with regards to funding, particularly in response to the upcoming Net Stable Funding Ratio (NSFR). Due to uncertainty about precise methodology, banks have not released widespread NSFR data. However a recent IMF working paper on the topic has shown that significant progress has been made in recent years. It is estimated that the average NSFR across G-SIBs increased from 97% in 2007 to 117% by Q2 2013 (well in excess of the 100% compliance threshold), as they have reduced their reliance on short term funding sources, such as repurchase agreements, and instead have placed greater importance on medium to long term bond and note programmes.[15] Taking into account the full global sample of 2,079 banks studied by the IMF, 86% had a NSFR of above 100% by year-end 2012.

Figure 33: Liquidity Coverage Ratio progress (2013)

Citi - 117% LCR in 2013

Credit Suisse - Stated as >100% in 2013, using FINMA methodology

Deutsche Bank - 107% LCR in 2013

Morgan Stanley - Stated as compliant with LCR requirements in 2013

RBS - 102% LCR in 2013

Santander - Stated as >100% in 2013 for both the group and all major group subsidiaries

Société Générale - Stated as >100% in 2013

UBS - 110% LCR in 2013, using FINMA methodology

6.3. Deleveraging the bank

Across the industry, banks are deleveraging, with Tier 1 capital increasing as a proportion of total assets – currently all of the banks reporting have a Basel III leverage ratio in excess of the expected regulatory minimum of 3.0%.

Alongside CET1 ratios, Basel III also introduced a leverage ratio as a new metric for banks to report. Although yet to be finalised, the minimum ratio is expected to be 3.0% with some local regulators implementing higher measures. The FDIC have announced that by 2018 the leverage ratio will stand at 5.0% for the holding

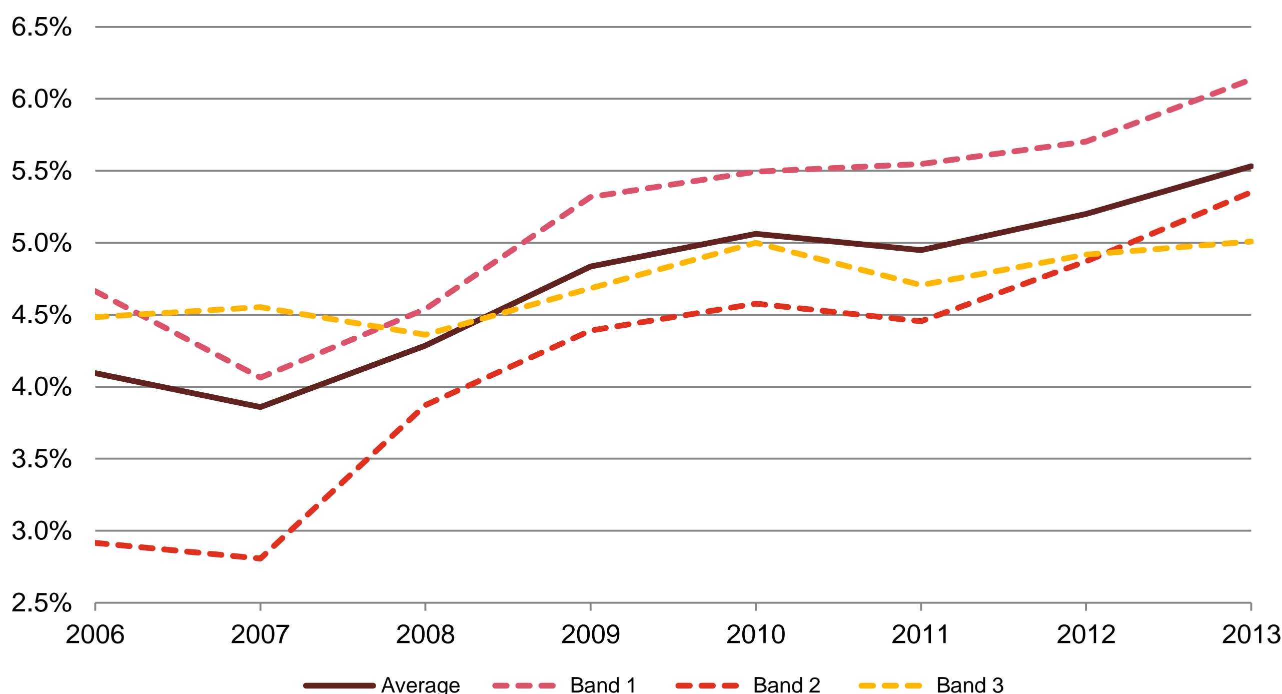
[15] IMF Working Paper – The Net Stable Funding Ratio: Impact and Issues for Consideration (June 2014).

companies of eight US SIFIs and at 6.0% for their banking subsidiaries, whilst in the UK the Financial Policy Committee recently recommended that the maximum leverage ratio for local banks be set at 4.95% from 2019[16].

Mandatory public disclosure is not due to commence until January 2015, but banks have already begun to report initial figures, with initial improvements in leverage already apparent. 22 of the 24 banks studied are currently reporting a form of the Basel III leverage ratio (with Swiss banks reporting under FINMA rules, and US banks under the FDIC supplementary leverage ratio), and at H1 2014 the average ratio for these stood at 4.4%.15 of these banks are reporting a leverage ratio of over 4.0% and ten a ratio over 4.5%.[17] Despite this banks are focused on continuing with the progress made so far, and several have already set themselves future leverage ratio targets.

By constructing a historical leverage ratio (stated Tier 1 Capital as a proportion of stated total assets), it is also clear that this deleveraging had started before Basel III figures began to be reported in 2012-2013 (Figure 34). Since 2006, this rudimentary leverage ratio has improved in 22 of the 24 sample financials banks studied, and by more than one percent in 19 banks. It appears that the largest banks (Band 1) are the least levered, with leverage using this constructed ratio standing at 6.1% in 2013, up from 4.7% in 2006. Across all revenue bands leverage has improved, and overall the average leverage of banks in terms of Tier 1 capital to total assets has risen from 4.1% in 2006 to 5.5% in 2013.

Figure 34: Average constructed leverage ratio of 24 banks studied (by revenue)



Source: Annual reports/CapitalIQ

[16] The 4.95% figure is the maximum requirement and includes both 35% G-SIB and countercyclical buffers and applies to G-SIBs and ring fenced D-SIBs rather than all local banks.

[17] Two banks are currently reporting a leverage ratio of over five percent, with no specific figure provided. As a conservative estimate, for the purpose of leverage ratio calculations the leverage ratios for these banks is assumed to be 5.0%.

6.4. *Proxy market capacity*

Balance sheet strengthening has come at a price, as banks' balance sheet capacity to undertake financial transactions has reduced as they have become more capitalised and less levered. Using total assets that can be supported by a given amount of Tier 1 capital as a proxy for market capacity, this has declined across the focus banks by around one-fifth% between 2009 and 2013, and by one-third within the investment bank over the same period.

Through increasing capital, cutting RWAs and moving in to line with Basel III requirements, banks have strengthened their balance sheet. However proxy market capacity has fallen, as banks can now hold fewer assets against capital. As a result of increased capitalisation and reduced leverage, the volume of assets that can be supported by a given amount of capital has declined.

Using aggregate figures from ten focus banks (not adjusting RWA figures for uplifts generated by changes in Basel methodology), the Tier 1 capital/RWA ratio was 11.9% in 2009. Balance sheet restructuring had pushed this to 13.9% by 2013. Likewise, the RWA/total asset ratio was 34.6% in 2009, but had risen to 36.6% by 2013.

These ratios indicate that in 2009 across the focus banks €10 of Tier 1 capital could support roughly €84 of RWAs and €242 of total assets (an overall leverage of 4.1%). However in 2013 the same capital could only support an estimated €72 of RWAs and €197 of total assets (5.1% levered), indicating a 18.7% reduction in the amount of total assets supported by the same Tier 1 capital over the five years.

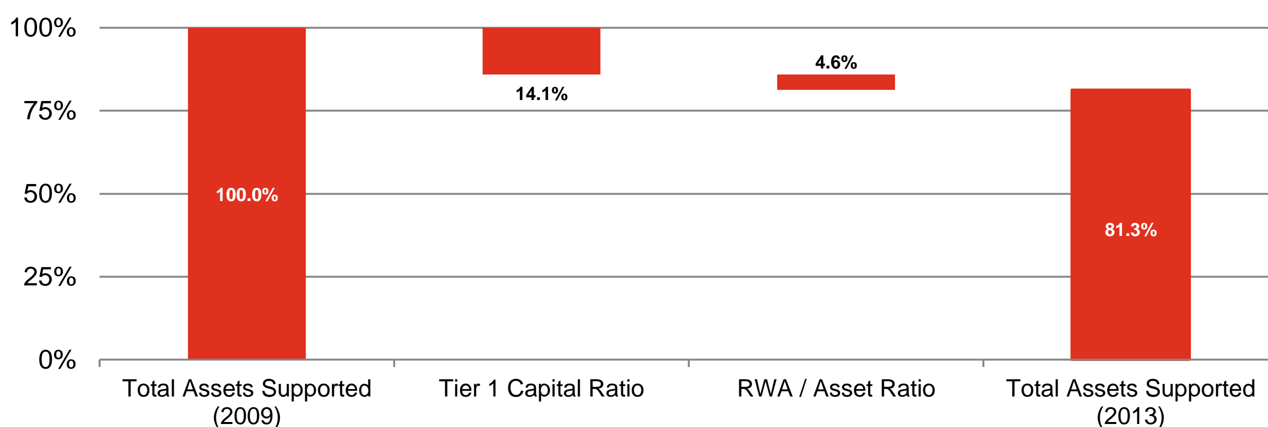
Figure 35 displays the ratios and figures supporting this, whilst Figure 36 displays the effect of the various balance sheet levers on proxy market capacity.

This reduction in proxy market capacity has been particularly pronounced in the investment bank. Using figures from the five focus banks that report both RWAs and total assets at a divisional level, and using the same methodology as above, it can be estimated that the amount of total assets supported by a given amount of capital in the investment bank fell by one-third between 2009 and 2013 (Figure 37).

Figure 35: Proxy market capacity calculations across ten focus banks

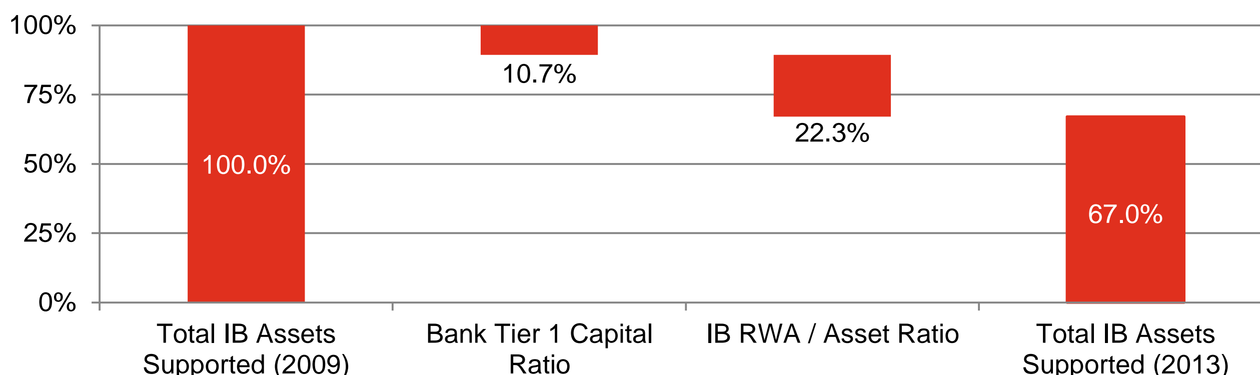
	T1 capital/RWAs	RWAs/total assets	Tier 1 Capital	RWAs supported	Assets supported	Leverage Ratio	Variation from 2009 assets supported
2009	11.9%	34.6%	10	83.8	241.9	4.1%	NA
2013	13.9%	36.6%	10	71.9	196.7	5.1%	-18.7%

Figure 36: Proxy market capacity reduction by balance sheet levers, 2009-2013



Source: Annual reports

Figure 37: Proxy investment bank market capacity reduction by balance sheet levers, 2009-2013



Source: Annual reports

6.5. Investment in risk management

Banks have undertaken a number of risk management improvement initiatives since the crisis, aimed at emphasising the centrality of risk throughout the business. Investments have been made across all risk types, including credit, market, liquidity and operational risk.

Lessons learnt from the financial crisis have given rise to an increased focus on risk management to support the de-risking of the balance sheet. Since 2009, all banks studied as part of this report has undertaken various initiatives to fortify risk identification and management across the business, with numerous separate initiatives launched. Reporting lines have been altered, committees created, risk management frameworks changed and organisations streamlined in order to strengthen risk management across the business (Figure 38).

This has been supported by a number of programmes aimed at bolstering the key areas of credit and market risk. Morgan Stanley refined its market and credit risk limit frameworks in 2010 to address the severe stresses observed during the crisis, whilst HSBC introduced credit and market risk Model Oversight Committees in 2013. In addition to the enhancement of risk management frameworks, calculation and modelling methodologies have also been improved in many banks; Credit Suisse adapted its risk measurement in 2009 by enhancing VaR models and updating economic capital model methodologies.

Figure 38: Sample improvements in overall risk governance and management

Citi

- Undertook an overhaul of the risk management leadership team in 2009, including a new Chair of the Audit and Risk Management committee
- Established the New or Complex Product Review Committee in 2013 to ensure that new product risks are identified and evaluated

Commerzbank

- Overall risk strategy enhanced in 2013, and implemented from 2014 onwards

Danske Bank

- Group Risk Management set up in 2012 to co-ordinate risk management across all the bank's divisions
- Overall risk management framework enhanced in 2013, including the implementation of appetite frameworks for all major risks

Lloyds

- New risk approach and risk appetite put in place for all businesses in 2011

JP Morgan

- 13,000 staff added between 2012 and 2014 to support regulatory, compliance and control efforts, costing an additional 2bn
- $600m invested in regulatory and control technology since 2011

Rabobank

- Strategic risk framework revised in 2012, leading to risk appetite being reassessed

Standard Chartered

- Created separate Risk and Audit Committees in 2010, to make risk management more effective
- CRO reporting line moved to the Chief Executive, rather than the Finance Director (2013), as requested by the Bank of England

Linked to this last example, modelling under stressed conditions has become more important, as banks look to recreate adverse market conditions in order to test their balance sheet. UBS widened their stress testing programme between 2009 and 2011, Deutsche Bank followed suit by introducing a new reverse stress test framework in 2010, whilst Citi implemented a new global stress testing policy in 2013. In particular, Stressed VaR has become a key measurement employed by banks, with Morgan Stanley implementing stressed VaR models for the first time in 2010 and Credit Suisse and Santander bringing in similar modelling capabilities the following year.

This move towards stress testing has been partially underpinned by regulatory initiatives, as banks look to test themselves through the same lenses as used by the regulators. The annual CCAR reviews in the US have run stressed scenarios against capital ratios since 2011 and Europe has introduced similar stress testing programmes in 2014. The ECB Comprehensive Assessment has run tests for 131 banks against baseline stressed and adverse stressed conditions, whilst the Bank of England has introduced a UK variant of these stress tests for eight leading local banks and building societies. In the United States it appears that progress has already been made in response to increased regulatory stress testing, with the Federal Reserve stating in 2014 that there has been year-on-year "improvement in the industry's ability to assess its capital needs under stress". [18]

Banks have also improved operational risk capabilities, not just in terms of governance and controls, but also in terms of measurement and modelling. UBS launched a new operational risk framework in 2011, aimed at addressing deficiencies revealed by the rogue trading incident, whilst HSBC have enhanced operational risk frameworks, policies and procedures since 2012. Within the spectrum of operational risk, conduct and culture has come to the fore. This has been a key area of investment in recent years, with banks seeking to reinforce core values such as customer centricity and conduct risk management across the organisation. In 2013 Standard Chartered dedicated additional resources to conduct and rolled out an updated code of conduct reflecting the lessons learnt from the financial crisis, which all staff are now required to confirm commitment to on an annual basis. Likewise, Deutsche Bank recently realigned compensation practices to focus on long term value creation, whilst Société Générale implemented 17 new internal controls within the investment bank to prevent and detect rogue trading in 2009.

Due to the diversity of the various risk management initiatives launched, as well as their proprietary nature, it is difficult to attribute a specific figure to quantify risk investment in all banks over recent years, however a figure can be estimated. J.P. Morgan have stated that they have added 13,000 staff in the last two years to support regulatory, compliance and control efforts, generating an additional $2bn in annual costs to the firm, and have invested $600m in regulatory and control technology. Taking a conservative assumption that peer institutions have spent half as much as J.P. Morgan relative to their assets on the same areas, it can be estimated that the 24 banks studied have incurred an additional $15.6bn in overall regulatory and compliance expenses and invested $4.7bn in regulatory and control technology.

It is evident that, as a result of increased regulatory pressure and the lessons learnt from the financial crisis, risk management in banks has been a core investment area since 2009.

6.6. De-risking of the OTC derivatives market

Banks have responded to regulatory pressure around derivatives and, in doing so, have increased the market's resilience. Clearing requirements have helped to tackle systemic risk, whilst portfolio compression has reduced the size of the total OTC outstanding notional. In addition, increased transparency around derivative pricing and volumes has been brought about through reporting and the ongoing move to exchange trading.

Since the financial crisis, substantial de-risking has occurred in the derivatives space. The 2009 G20 commitment has resulted in a host of derivative regulation around the globe to which banks have responded. As a result, the derivatives market is now more transparent and resilient, something which will only increase as the various outstanding requirements from in-flight regulations come into force.

[18] Federal Reserve press release, 26th March 2014 (www.federalreserve.gov)

As banks move into line with the EMIR regulation, a greater degree of uniformity and stability has been brought to the European OTC derivatives market. This has required significant effort from banks as they have adjusted to a more regimented operational and compliance landscape. Since February 2014 banks in Europe have reported all derivative transactions to trade repositories in order to enhance market transparency, driving significant alterations to operations, systems and legal arrangements. Similarly, banks have made contractual and procedural changes in order to meet regulatory expectations around portfolio compressions, portfolio reconciliations, mark-to-market valuation, and trade confirmation.

Arguably the most significant impact of EMIR is yet to come, with banks due to meet the upcoming clearing and margining requirements, thus reducing both contagion risk and counterparty credit risk in Europe. Current estimates are that clearing for certain interest rate and credit products will commence in Q3 2015, followed by FX during the following quarter. This will be supported by increased collateral requirements as stipulated by the BCBS/IOSCO margin rules, with firms with the largest total outstanding notional of derivative contracts required to exchange both initial and variation margin from December 2015 onwards. The derivative market will be further strengthened as banks move towards MiFID II compliance, with greater standardisation and regulatory oversight brought about by the push towards exchange trading.

There has already been a significant de-risking in the derivatives market. Market structure and practice has shifted in recent years, with 19 jurisdictions having passed, or in the process of passing, legislation on the matter (including EMIR in the EU and Dodd-Frank Title VII in the US). This de-risking can be seen in total derivatives volume. ISDA have estimated that through portfolio compression $239tn of interest rate derivative outstanding notional has been removed from the market since 2009 (30% of the current total), although it should be noted that the overall total notional has increased during this period.[19]

There is also evidence of increased bank uptake in central clearing. Cleared OTC interest rate derivatives as a proportion of the total outstanding notional stood at 42% in June 2013, a figure which increased to 46% in February 2014. For OTC credit derivatives this rise over the same period of time was from 14% to 19%.[20] The increase in clearing is particularly marked in the United States, as banks have adjusted themselves to phased-in Dodd-Frank requirements. By April 2014, on average 70% of new OTC interest rate derivative transactions were cleared, up from 65% in June 2013 and 40% at the beginning of 2013. Likewise, whilst in January 2013 just 25% of all new OTC credit derivatives went through clearing houses, this figure had jumped to 95% by February 2014.[21] Similar trends are likely to take hold in Europe once the clearing obligation comes into full effect.

[19] ISDA Publication - Interest Rate Derivatives: A Progress Report on Clearing and Compression (February 2014).

[20] FSB Publication – OTC Derivatives Market Reforms: Seventh Progress Report on Implementation (April 2014).

[21] FSB Publication – OTC Derivatives Market Reforms: Seventh Progress Report on Implementation (April 2014).

7. Reshaping the business to improve resolvability and accountability

Since the financial crisis banks have not just overhauled their business and product mix. They have also reshaped their legal entity structures in order to enhance resilience, recoverability and resolvability, whilst also promoting a greater degree of accountability to local regulators.

7.1. Legal entity changes

Since the financial crisis, banks have made legal entity alterations in order to increase resolvability through entity segregation, increased subsidiarisation, structure simplification and the creation of both holding companies and independent service companies.

In recent years, banks have begun to alter their group legal structure in order to improve structural resilience and governance effectiveness, areas subject to critical regulatory scrutiny.

Some institutions have already begun to move down the path of ring-fencing activities from a legal entity perspective, something particularly prevalent in France and Switzerland due to local regulatory pressure. Banque Populaire has moved its Corporate & Investment Banking activity into a separate legal entity (Natixis), whilst Crédit Agricole also has created a separate investment banking subsidiary to house certain activities. Both UBS and Credit Suisse are planning the creation of new subsidiaries to house their non-investment banking activities, in dialogue with local regulators. Banks in other jurisdictions are also looking to ring-fence activities, with Intesa Sanpaolo also placing its investment banking activities into a single subsidiary, and this trend is likely to continue as the regulatory imperative builds (although only some banks will be required to ring-fence under the proposed legislation). The PRA has given UK banks until January 2015 to submit formal plans in alignment with proposed local ring-fencing requirements, increasing the pressure on banks to begin to separate certain activities.

In order to make themselves more resilient and to improve their resolvability, banks have begun to implement other structural changes. Many are creating holding companies with the aim of facilitating any wind-down that might be necessitated by a crisis. Some are constructing group holding companies in order to create a single point of entry for any bail-in resolution – UBS are an example of this with a new umbrella legal entity in development. Others, such as Credit Suisse, are developing US-specific holding companies in order to comply with Dodd-Frank foreign bank requirements.

For similar reasons of enhanced resilience and resolvability, banks are placing an increasing importance on independent service companies, something key to recovery and resolution planning as facilitators of operational continuity. An example of a bank explicitly making changes in this regard is Credit Suisse, which has recently announced the creation of a separately capitalised global service company.

Another recent trend is a greater move towards subsidiarisation, something encouraged by local regulators. On the whole, banks have kept information around this proprietary; however UBS are one example of an institution that has made its intentions public. UBS has announced that it is moving towards greater usage of their UK subsidiary, after discussions with the PRA and FINMA, and is substantially increasing the capitalisation of its UK banking subsidiary, UBS Ltd, accordingly.

Finally, banks have attempted to reduce organisational complexity by simplifying their legal structure through the merger of foreign subsidiaries. Santander merged Bank BZ WBK and Kredyt Bank in Poland in order to reduce duplication and increase efficiencies, whilst in Spain they have merged with Banesto and Banif for

similar reasons. Likewise, Unicredit merged their Slovakian and Czech businesses in 2013, and have also merged the two Ukrainian banking entities under their control.

7.2. Organisational changes

Banks have recently been making organisational changes in order to place greater focus on core businesses, particularly in the investment bank. 90% of the focus banks have restructured their investment banking division since 2009 so as to emphasise key client services.

Whilst not all banks have undergone major legal entity restructuring since the financial crisis, almost all have focused on internal change. The goals of divisional changes vary by institution, with strategic objectives and specific circumstances playing a part. However, a number of common themes can be drawn out amongst the raft of ongoing alterations (Figure 39).

Figure 39: Common aims of organisational changes

1. Clear demarcation between investment banking and retail banking activities, with product areas and business units split along those lines
2. Streamlining the organisational structure to increase efficiency and bring those in positions of authority closer to their clients
3. Increased focus on core investment banking activities, with the shedding of those business areas seen to be not in line with strategy
4. Increased focus on client and customer needs
5. Enhancement and clarification of governance and lines of accountability across the bank

Across the industry, banks are seeking to simplify internal structures and align the organisation to core services. This is particularly apparent in the investment bank; of the ten focus banks, nine have carried out some restructuring in divisions holding traditional investment banking activities, whilst three have created entirely new divisions to house their investment banks. Additionally banks have consolidated business lines within the investment bank to streamline management structures, with examples in Figure 40

Figure 40: Sample business consolidation in the investment bank

Santander

- Number of business entities in Global Wholesale Banking slimmed from five to three between 2009 and 2014
- Global Transaction Banking, Corporate Finance, Credit Markets, Rates, and Equities restructured into Global Transaction Banking, Financing Solutions & Advisory, and Global Markets

UBS

- Number of business areas in the Investment Banking Division reduced from three to two in 2012 in order to align with client needs
- Equities, FICC and IBD restructured into Corporate Client Solutions and Investor Client Solutions

Unicredit

- Leasing moved out of the Corporate & Investment Bank in order to focus on core capabilities in Finance & Advisory, Markets, and Global Transaction Banking

The strategies for going about this, however, have varied by institution. In 2012, Deutsche Bank created a Corporate Banking & Securities (CB&S) division and a Global Transaction Banking (GTB) division out of their Corporate & Investment Bank, with the former created to house the majority of traditional investment banking activities. On the other hand, RBS have looked to combine non-retail activities into a single division. In 2014, the Corporate & Investment Banking division was created through a merger of the Corporate, Markets, and International Banking divisions, in effect building a non-retail business unit.

Other banks have followed a similar route to RBS, and have brought together corporate banking and investment banking activities in order to align the business to the core services provided. These recent changes may have to be undone in the case of ring-fencing. In the UK, Lloyds closed its Wholesale Banking division in 2012 and split activities between the newly created Commercial Banking division and its Wealth and International division. Similarly, Société Générale merged its Corporate and Investment Banking division with Asset and Wealth Management and Security Services and Brokerage in 2013, to form the Global Banking and Investor Solutions division. Of the ten focus banks Citi, ING, Morgan Stanley, Santander and Unicredit have divisions that jointly hold investment and corporate banking activities (although some have been in place since 2009), which may have to be split with structural reform.

7.3. Booking model changes

There is also evidence that banks are starting to consider booking models in a more strategic light with regards to resolvability and regulatory expectations. More institutions are booking through local subsidiaries (rather than branches) in line with regulatory expectation, with just under half of the industry currently adopting this model.

In parallel to legal entity changes, banks have also been re-examining their booking models. The drivers of these reviews have been varied, including regulatory scrutiny around remote booking, changes to risk management, and efforts to manage capital, liquidity, funding and leverage more efficiently at both global and local levels. Amidst this landscape a portion of banks are moving towards a hybrid booking model, utilising a mix of branches and subsidiaries.

The continuing sole use of branches for banks with substantial operations in a given jurisdiction is increasingly seen to be at odds with resolvability goals. However, branch booking, where possible, still brings capital and liquidity benefits and risk centralisation. As a consequence, some banks are turning to a subsidiarised structure in order to facilitate resolution, but one that still maintains an element of branch booking in order to drive capital efficiencies and retain flexibility for future optionality. Looking at a sample of banks on a non-public basis, our insight suggests that just under half of the industry is currently booking through a largely subsidiary-based model, whilst roughly a third are utilising a booking model evenly balanced between subsidiary and branch booking, and a quarter favouring branch booking.[22]

Banks have tended not to publicly disclose booking model changes, however UBS are one bank to announce intended alterations in recent years. As previously referenced, UBS are increasingly capitalising their UK banking subsidiary, moving away from a branch booking model and towards booking in a separately capitalised and segregated entity.

Although the precise booking model will vary by institution, the convergence to a subsidiarised-hybrid model suggests that banks are considering the topic in a more strategic light and through the lens of resolvability. Additionally, banks are in the process of improving the efficiency of operational aspects of the booking model. Since the crisis, there has been a renewed focus on book structures, data hierarchy, booking processes, back-to-back risk centralisation processes and effective management information.

7.4. Recovery and resolution planning

Banks are currently developing RRPs in tandem with local and global regulators in order to reduce systemic risk and enhance global financial stability. When compared with other structural reform, the RRP process is distinct in that it is tailored at a bank-by-bank level, and therefore allows for the targeted identification and remediation of potential blockages to resolvability.

In recent years, banks have been developing customised recovery and resolution plans, with the goal of being allowed to fail without a wider risk to global financial stability. In the United States these plans are being developed by banks for regulatory review. Elsewhere banks have submitted data packs and are in dialogue with their local resolution authority to shape resolution plans, with this dialogue extended to Crisis Management Groups in the case of G-SIBs (consisting of the local prudential supervisor, the central bank and the resolution

[22] Industry perspective is based on an anonymised study of seven banks, using non-public information.

authority of the G-SIB's home and key host countries). G-SIBs provided information around resolution planning in 2012 and subsequently have submitted RRPs on an annual basis.

Within these resolution plans each bank will have a pre-agreed resolution strategy to be implemented if failure is imminent, either through a Single Point of Entry or Multiple Point of Entry approach. With regards to these strategies, as Figure 41 displays, institutions are taking differing courses of action. Multiple resolution strategies are contained within US RRPs and these US-specific plans will need to complement the work being done with European and other global regulators.

Figure 41: Commentary on 2014 US RRPs

<table>
<tr><td>Bank of America</td><td>• Multiple resolution strategies included in the plan, including a Single Point of Entry Strategy, a Multiple Point of Entry Strategy, and a hybrid strategy
• State that the Merrill Lynch holding company was merged into the Bank of America Corporation in 2013 to simplify bail-in
• Resolution plan outlines further restructuring actions to be completed to facilitate resolution (not available in public section)</td></tr>
<tr><td>Barclays</td><td>• Preferred resolution mechanism is through a Single Point of Entry strategy, through the top-tier holding company
• State that the business unit restructuring in May 2014 was carried out partially to facilitate resolution</td></tr>
<tr><td>Citi</td><td>• Two key resolution strategies presented:
– The recapitalisation of the main banking entity
– The wind down/sale of operations
• State that significant investments have been made since 2011 to improve information systems, partially to enhance decision making around resolution</td></tr>
<tr><td>Credit Suisse</td><td>• Preferred resolution mechanism is through a Single Point of Entry strategy, and Credit Suisse have been working with FINMA on a resolution strategy along these lines
• As part of this resolution strategy a legal entity programme has been undertaken since 2012, with plans around the creation of separate subsidiary for Swiss-booked business; the simplification of UK subsidiary operating models; the creation of a US holding company, and; the formation of a separately capitalised global service company</td></tr>
<tr><td>Deutsche Bank</td><td>• Resolution plan for non-US businesses is to form a bridge bank in Germany, whilst the US entities and operations are taken over by an administrator and liquidated, sold or resolved</td></tr>
<tr><td>Goldman Sachs</td><td>• Three strategies presented:
– Recovery plan whereby the sale of businesses and assets of Material Entities to one or more buyers would avoid the need for resolution
– Preferred resolution strategy would see the recapitalisation of the two major broker dealers through the removal of intercompany indebtedness, the US bank recapitalised and placed into receivership, and a bridge bank created. The group holding company would then enter into bankruptcy proceedings alongside smaller subsidiaries.
– Alternate resolution strategy of all material entities entering into local insolvency proceedings and wound down over a period of time, without reliance on government funds or tax-payer money</td></tr>
<tr><td>JP Morgan</td><td>• Three strategies presented, in order of preference:
– Single Point of Entry – only the JP Morgan Chase holding company would be placed in receivership, and all operating subsidiaries would continue in business as subsidiaries of the bridge entity
– Alternative plan of recapitalisation of the firm's lead bank
– If recapitalisation is not possible, the firm will resolve its businesses, entities and assets through sales and wind-down</td></tr>
</table>

Morgan Stanley	• Preferred resolution mechanism is the sale and wind-down of standalone Material Entities and businesses
UBS	• Preferred resolution mechanism is through a Single Point of Entry strategy, as preferred by FINMA • State that compliance with the rules on the establishment of a US intermediate holding company may have an impact on UBS' resolution strategy

Source: www.federalreserve.gov

In addition to bank-specific resolution strategies, through recovery and resolution legislation regulators have new and enhanced tools at their disposal to manage the effective wind-down of failing institutions and thus reduce systemic risk. As empowered by BRRD, EU regulators can take a number of early intervention measures in order to assist bank recovery. These include the early implementation of aspects of the resolution plan, the removal of senior management, mandatory debt restructuring, the appointment of a temporary administrator, and the imposition of strategic and structural changes (both legal and operational).

In the event that resolution is required, regulators have the power to deploy one or more of four tools to facilitate this – the sale of business, asset separation, the creation of a bridge institution controlled by the regulator, and bail-in. The actions taken by regulators will be specific to each institution, taking into account the precise organisational and business mix of that bank.

This individuality is one of the key benefits of resolvability legislation as it stands. Through current recovery and resolution legislation, both the RRPs and associated actions mandated by the regulator are individually crafted and tailored to the bank in question.

Despite the future benefits, this process of resolvability assessments and tailored actions is at an early stage of what is necessarily a multi-year, iterative process with a number of stakeholders. The FDIC and the Federal Reserve's recent reactions to 2013 US RRPs demonstrate that this process has not yet run its course (Figure 42).

This report has already touched upon how banks are responding to the regulatory challenges outlined in Figure 42, in particular the simplification of legal structures, the development of group holding companies and local intermediate holding companies, and the increased importance placed upon shared service companies.

Figure 42: Key regulatory actions from 2013 US RRPs

1	Establishing a rational and less complex legal structure that would take into account the best alignment of legal entities and business lines to improve the firm's resolvability
2	Developing a holding company structure that supports resolvability
3	Amending, on an industry-wide and firm-specific basis, financial contracts to provide for a stay of certain early termination rights of external counterparties triggered by insolvency proceedings
4	Ensuring the continuity of shared services that support critical operations and core business lines throughout the resolution process
5	Demonstrating operational capabilities for resolution preparedness, such as the ability to produce reliable information in a timely manner

Source: www.federalreserve.gov

Headway is also being made with regards to a stay of early termination rights in financial contracts. This was a topic of regulatory concern from the 2013 US RRPs, and the FSB have detailed the ability to implement stays on early termination rights for derivative contracts as a key attribute of effective resolution regimes. An ISDA working group has recently been progressing on enhanced documentation and, in October 2014, it was announced that 18 leading banks had signed a new ISDA Resolution Stay Protocol. This will impose a stay on cross-default and early termination rights within standard derivatives contracts in the event of a counterparty being subject to resolution action, thus helping to tackle systemic risk.

This report has been prepared for and only for the Association for Financial Markets Europe ("AFME") in accordance with the terms of our engagement letter dated 01 August 2014 and for no other purpose. We do not accept or assume any liability or duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

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