EBA Report

9 February 2015

Overview of the potential implications of regulatory measures for banks' business models

Contents

Abbreviations

ABS	Asset-backed security
ASF	Available stable funding
BCBS	Basel Committee on Banking Supervision
BRRD	Bank Recovery and Resolution Directive
CCP	Central counterparty
CET1	Common Equity Tier 1
CRD IV	Capital Requirements Directive
CRR	Capital Requirements Regulation
CVA	Credit valuation adjustment
DGS	Deposit guarantee scheme
EBA	European Banking Authority
EEA	European Economic Area
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Markets Authority
EU	European Union
FBO	Foreign bank operations
FRB	Federal Reserve Board
FSCS	Financial Services Compensation Scheme
FSOC	Financial Stability Oversight Council
HQLA	High-quality liquid assets
ICB	Independent Commission on Banking
IHC	Intermediate holding companies
LCR	Liquidity coverage ratios
LR	Leverage ratio
LRR	Leverage ratio requirement
M&A	Merger and acquisition
NIM	Net interest margin
NSA	National supervisory authority
NSFR	Net stable funding ratio
OTC	Over-the-counter
RMBS	Residential mortgage-backed security
RoE	Return on equity
RSF	Required stable funding
RWA	Risk-weighted assets
SGV	EBA sub-group on vulnerabilities
SME	Small- and medium-sized enterprise
US	United States

1. Executive Summary

1.1 Purpose and scope of the report

1. Based on the list of the business model components identified in the previous report by the EBA sub-group on vulnerabilities (SGV)[1], **this new report provides a global overview of the potential implications for business models resulting from the collective implementation of the regulatory measures developed since the financial crisis** (CRR/CRD IV capital requirements, Basel III leverage ratio (LR), liquidity coverage ratio (LCR), net stable funding ratio (NSFR), reforms in banking structures, resolution regimes and EMIR).

2. The analysis focuses on the **potential implications of regulation for business models after the financial crisis and the likely first-round effects of the new banking regulations during the transition period during which the new rules have to be implemented.**

3. The potential implications of the regulatory changes have been assessed over the transition period in a qualitative manner using supervisory expert judgement. **This exercise should not be considered in any way as an impact assessment of regulation as a whole and it does not evaluate the long-term benefits of regulation for the economy.**

4. The report also provides a matrix giving supervisors an overview of the global trends that might affect banks' business models following the implementation of the new regulatory framework.

1.2 Main findings

5. **A framework has been designed for this study to consider the key aspects of regulation and the main business components** (see Table 1). The study highlights the changes in business model components that, *ceteris paribus,* are likely to be directly encouraged (+) or discouraged (-) by implementation of the regulatory measures over the transition period, starting from the situation after the financial crisis. It also shows the business model components that are not directly affected (=) or where the effect is inconclusive (+/-).

[1] *Banks-business models: definition, identification and challenges. Not published.*

Table 1: Results of the assessment

Legend:

During the transition period, business model components are likely to be :

- discouraged (decreasing effect): **-**
- encouraged (increasing effect): **+**
- not affected : **=**
- affected inconclusively: **+/-**

by the implementation of the new regulatory rules.

				Potential implications of individual regulatory measures						Cumulative potential implications	
				1	2	3	4	5	6	7	8
Business model components				CRR/CRD IV Capital requirement	Basel III LR	Basel III Liquidity rules (LCR/NSFR)	Reforms of banking structures (ring-fencing measures)	Resolution regimes (BRRD)	EMIR, (clearing OTC derivatives)	Average 'quantitative' effect(1)	Final Including expert judgment(2)
1	Activities	Retail banking		+	-	-	=	=	=	-	-
		Corporate banking		+/-	+	-	+/-	=	=	+/-	-
		Investment banking	Proprietary trading	-	-	+/-	-	=	-	-	-
			Market making	-	-	+/-	-	=	=	-	-
			Hedging activities	+	-	-	-	=	-	-	-
		Private banking		+/-	+/-	+	+/-	=	-	+/-	-
		Non-banking activities (insurance exposures...)		+	+	=	=	=	=	+	+
		Off-balance-sheet exposures		-	-	-	+/-	=	+/-	-	-
2	Banking model	Universal banking structure (diversified)		=	+/-	+	-	=	=	+/-	+
		Specialised banking structure		=	+/-	+/-	+	=	=	+/-	-
3	Resources/ liquidity profile	Capital		+	+	+	+	+	-	+	+
		Deposits	Retail deposits	=	=	+	=	+	=	+	+
			Corporate deposits	=	=	+	+/-	+	=	+	+
		Asset encumbrance		=	=	-	+	-	+	+/-	+
		Reliance on wholesale funding		=	=	-	+/-	-	=	-	-
		Maturity of wholesale funding		=	=	+	+/-	+	=	+	+
4	Structure of income	Interest rate income		+/-	+/-	-	+/-	-	=	+/-	-
		Trading income		-	-	=	-	=	-	-	-
		Commissions and fees		+	+/-	+	+/-	=	-	+/-	+
5	Geographic scope	Non-domestic exposures	EU exposures	+	+/-	+	=	=	=	+/-	+
			Foreign (excl. EU) exposures	+	+/-	-	-	=	=	+/-	-
		Non-domestic funding	EU funding	+	+/-	-	=	=	=	+/-	-
			Foreign (excl. EU) funding	+	+/-	-	-	=	=	+/-	-
6	Size	Size		-	-	=	-	=	=	-	-
		Leverage		-	-	-	-	=	=	-	-
7	Originate to hold/to distribute	Use of securitisation		-	+	+	+/-	=	=	+/-	+
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		-	+	-	+	-	-	-	-
		RoE		-	+/-	-	-	-	+/-	-	-
		Loan to deposit ratio		=	-	-	+/-	-	=	-	-
		Cost	of funding	-	+/-	+	+	+	+/-	+	+
			of operations (excluding the cost of implementing the regulatory measures)	+	=	+/-	+	=	+	+	+
9	Operational structure and governance	Number of branches and subsidiaries		+/-	=	-	-	=	=	-	-
		Intragroup flows		+/-	=	-	-	+/-	=	-	-
		Importance of internal governance		+/-	+/-	+	+	=	=	+	+

(1) The measure shown as a cumulative potential implication of regulation is the 'simple average' of the individual regulatory measures (i.e. each regulatory measure has the same weight in the averaging).
(2) This column gives further expert judgement when the effect is inconclusive '+/-' when applying the 'simple average method'.

1.2.1 Individual potential implications of regulatory measures (See columns 1 to 6 in Table 1 above)

6. Main results show that:

- New regulations on capital will, as intended, improve the general solvency of the system. Banks will be more secure, but introducing restrictions on their activity might make them change their business models. The **business lines that are likely to suffer greater negative effects are those for which new prudential risk-weighted asset (RWA) treatment is relatively more severe** (generally included in investment banking or off-balance-sheet exposures). In addition, there will be pressure on banks' income sources and increases in their operational and implementation costs.

- The LR – as a non-risk-weighted measure – particularly affects banks engaging in low-margin and low risk-weighted but high-volume lending. This **may induce banks to increase their capital, shift to riskier assets and/or reduce their size.** Consequently, the overall lending capacity of the banks may decline while internal control structures may be challenged by the riskier portfolio. Furthermore, evidence suggests that investment banking activities might be reduced if the investment banking divisions employ a lower average risk weight compared to other business areas.

- New liquidity rules are likely to **push towards more deposits, reduced short-term wholesale funding reliance, and high desirability of high quality liquid assets, to the detriment of other assets** for banks that are struggling to meet the new requirements. The rules are likely, at least temporarily, to increase the cost of funding and put pressure on banks' earnings.

- Structural reforms (i.e. ring-fencing) **will have adverse influence on the profitability of the investment banking/trading activities due to an increased cost of funding, operational complexity and overhead.** Income diversification in the separate entities will reduce.

- New resolution regimes proposals may result in **an increase in funding costs and in a change in the funding mix**. Under the new framework, banks are encouraged to increase their share of debt that can be bailed-in (capital, long-term unsecured debt and some non-insured term deposits). However, the impact on the liability structure inconclusive in the medium term. After the transition period, once the minimum requirement[2] is reached, banks are likely to increase the volume of debt that cannot be bailed-in (secured debts deposits covered by DGS, short term funding) costs of which are likely to fall. **As regards banking activities, the implementation of resolution rules is not intended to affect the structure of assets directly as the regulatory measures are**

[2] The new recovery and resolution regime will require banks to hold a certain amount of bail-in debt relative to total liabilities.

only focused on the liability side of the balance sheet. Second-round effects on the banking activities have been excluded from the analysis.

- Under EMIR, the shift to central clearing of most OTC derivatives will necessitate the posting of increased amounts of collateral as both initial and variation margins**. Investment banks which regularly write OTC derivative contracts for their clients and enter into such contracts to manage their own risk exposures will face stronger challenges to adapt to the higher cost of liquidity**. It will also materially increase the operating costs for certain businesses (mandatory registration of all derivative contracts/review of number and type of collateral relationships with counterparties).

1.2.2 Cumulative potential implications of regulatory measures (See columns 7 and 8 in Table 1 above)

7. **The results show that the cumulative potential implications of the regulatory measures are not completely clear-cut.**

   - **Different regulations often have contradictory effects on business models**. Only five of the 34 business components assessed in the report (size, leverage, trading income, non-banking activities, retail deposits) are affected in the same way (i.e. the individual effects of the new regulatory rules go clearly in the same direction). All other business model items are potentially facing contradictory effects.

   - There are a number of areas in Table 1 above that show contradictory effects. Among them, **strongly contradictory effects are particularly evident on corporate banking activities, geographic scope, risk appetite, use of securitisation and asset encumbrance**. There are both strong positive (+) and negative (-) incentives on these five elements which makes the assessment of the cumulative potential implications very challenging. For example, as far as negative effects are concerned, the implementation of EMIR will require banks to collateralise their derivative activities. At the same time, the new liquidity framework is providing banks with strong incentives to reduce their repo transactions (since collateralised assets are not eligible for the liquidity buffer). In addition, from a resolution perspective, an encumbered balance sheet poses difficulties in a resolution scenario.

8. Nevertheless, **for most of the business model components, the overall potential implications seem to be very clear.** During the transition period, banks are likely to:
   - reduce investment banking activities and off-balance-sheet exposures;
   - be better capitalised;
   - modify the funding mix (more deposits and lower reliance on short-term wholesale funding);
   - lengthen maturity of wholesale funding;
   - reduce the loan to deposit ratio;
   - reduce their size and increase their LR;

- experience a rise in funding and operational costs;
- experience a lower return on equity;
- streamline their structures (fewer branches, fewer intragroup flows); and
- place greater emphasis on internal governance.

Overall, these results are as expected. They are the intended consequences of the new regulatory framework and they also confirm supervisors and regulators' generally held views when they have assessed the consequences for banking business models.

9. **However, other results are unexpected and might be detrimental for the economy and the banking sector as a whole:**

- **Retail lending seems to be negatively affected** by the collective implementation of the regulatory measures. This is mainly due to the potential implications of the LR (given the low risk weights in retail banking) and the liquidity coverage ratio which does not take retail loans into account in the liquidity buffer.
- **Banks are likely to refocus on core (home currency) businesses and local funding (host currency) for subsidiaries** due to the new liquidity rules and the reforms of banking structures which will toughen the conditions for intragroup flows (cross-border and non-cross-border).
- There is also a global **trend towards more encumbered balance sheets** mainly driven by EMIR requirements and structural reforms, although counteracted by resolution rules.
- **Banks are also likely to be less profitable** as both transitional operational and funding costs are likely to increase while income from traditional banking activities will fall. Nonetheless, the risks for the banking system are diminishing and on a risk-adjusted basis, a lower RoE (with lower volatility) may therefore be acceptable to stakeholders.

1.3 Key points for supervisors

10. During the transition period, supervisors should pay particular attention to :

- **<u>The potential global contradictory implications for business models</u>**

  It is not surprising that different regulatory rules may cause global contradictory effects. The objectives pursued by the regulatory framework may indeed vary between different regulatory measures and there may be rules created to circumvent some of the undesirable side effects of another measure (i.e. capital requirement/LR). However, there is still a need for coherence of regulatory proposals to ensure that the overall regulatory framework remains consistent and that global regulatory objectives can ultimately be reached.

- **<u>The unintended consequences resulting from the collective implementation of the new regulatory rules</u>**

a) **Banks with weak profitability should be monitored** – it is a truism that profitability is necessary for the long-term health of any enterprise, but in a competitive environment, banks that face capital erosion through losses are particularly vulnerable, and may find their business impeded by a vicious circle, as weakness in profitability results in higher cost of funding, inability to raise capital, loss of confidence and withdrawal of funds. In the absence of other measures (such as cost cutting or re-aligning their business model), banks may seek to improve profitability by increasing the costs to their customers either through charging fees or passing on costs.

b) Supervisors should be **aware of the consequences of the search for higher yields**. The effect of higher capital requirements, the need for HQLA (which are low yielding) for liquidity buffers, a possible increase in the cost of funding, and structural reforms all tend to drive down either revenues or RoE. For a bank to maintain its profitability there may be an incentive to become involved in higher-yield assets that will necessarily also entail high risk, and supervisors need to monitor asset quality and discuss banks' risk appetites with them.

c) Supervisors should **be aware of the incentives for the growth of shadow banking**. Banks that wish to conserve capital may exit capital-intensive business and therefore this business may move to the non-banking financial system, which may be regulated (such as insurance companies) or not (such as hedge funds). Furthermore, if the shadow banking system acts as provider of bank funding, banks and supervisors need to recognise that this provision may be unpredictable.

d) **Asset encumbrance is likely to rise**, **especially in times of crisis**. While it may be the case that secured funding is the most economical (or in crisis, the only) source of funding, a balance needs to be struck between collateral encumbrance in the secured pool, and availability of unencumbered collateral to service depositors and unsecured creditors.

e) Wholesale funding is likely to decline. As a result, retail funding may take its place (and the desirability of it may increase its cost), but if this fails to materialise, asset shrinkage may be the course of action for banks, either through securitisation or disposal. As a result there may be **deleveraging pressures, and a reduced flow of credit to the real economy**.

2. Introduction

11. This study is an extension of SGV's previous work on business models[3] that has provided SCOP with a global overview of the main issues and trends that banks' business models are experiencing (definition, identification, development, supervisory approaches). It focuses on the section on regulatory drivers of business models (Section 3) of the previous report.

12. The current environment is characterised by a historically high number of regulatory measures that are being discussed or about to be implemented. This large number combined with a current lack of global approach to regulation makes it very difficult to fully assess and understand the potential global implications for banks' business models.

13. There is much on-going work at the EBA and the BCBS to assess the potential implications of the prudential rules on business models. However, most of these studies only focus on specific regulatory measures (e.g. resolution regimes, LR, LCR); possible global implications and effects of the different measures on each other are often neglected. This paper tries to cover these aspects by providing a first global view of what might be the potential cumulative implications of the regulatory measures for banks business models.

14. Based on the list of the business model components identified in the previous SGV report, **this new report provides a global view of the potential implications for business models resulting from the collective implementation of the regulatory measures** (CRR/CRD IV capital requirements, Basel III LR, LCR, NSFR, reforms in banking structures, resolution regimes and EMIR).

15. **For the purpose of the analysis a matrix has been designed to give supervisors an overview of the global trends that might affect banks' business models following the implementation of the new regulatory framework. Both the individual and the cumulative potential implications of the regulatory measures have been considered.**

[3] *Banks' business models: definition, evolution and challenges*.

3. Potential implications for business models

3.1 Methodology

1. The study focuses on the business model components and indicators identified in the previous SGV report (banking activities, resources, liquidity profile, structure of income, geographic scope, size, originate to hold/to distribute, risk appetite, performance and operational structure and governance). The rules considered are: CRR/CRDIV capital requirements, Basel III LR, LCR, NSFR, reforms in banking structures, resolution regimes and EMIR.

2. **An assessment framework has been used that considers the key aspects of the regulatory measures and the main business components** (see tables)**.** The study highlights the business model components that, *ceteris paribus,* are likely to be directly encouraged (+) or discouraged (-) by the implementation of the regulatory measures. It also shows the business model components that are not directly affected (=) or where the effect is inconclusive (+/-).

3. **The analysis assesses the potential implications of the regulatory measures for business models after the financial crisis**.

4. **The potential implications have been assessed on a qualitative basis using expert judgement for the transition period** during which the new rules have to be implemented. **It does not take into account the longer-term benefits of the regulatory measures once the adjustment has been made.**

5. **Given the complexity, only first-round effects have been taken into account**. These effects are generally the same across all banks and derive directly from the implementation of the regulatory measures. On the other hand, there might be second-round effects resulting from banks' strategies to adapt to/meet the new regulatory requirements. These strategies will depend a great deal on numerous variables (gap to reach the minimum requirements, current business models, ability to move into new activities, ability to raise capital, wholesale funding, current financial situation, etc.) which will differ significantly from one bank to another. Some of the second-round effects might be changes in loan pricing, participation in various segments of the market and/or divesture of non-core businesses.

6. It is not always possible to distinguish first-round effects from second-round effects. For example, one of the first-round effects of resolution rules might be an increase in the amount of debt that can be bailed-in (these effects derive directly from the implementation of the regulatory measures). Although the dividing line is unclear, second-round effects

might impact other factors such as capital, long-term senior debt and an increase in of the cost of debt that can be bailed in. Given the new regulatory constraints, second-round effect of bail--in rules might, for instance, bring about a new focus on banks' core activities or might cause banks to deleverage.

7. **Interactions between the different regulations have not been directly taken into account** when assessing the potential implications of each regulatory measure. A holistic view of the cross-effects is included in the analysis of the cumulative potential implications.

8. The analysis refers to only a limited amount of impact assessment studies as these are often limited in their scope and focus only a few business model aspects. In addition, given that the rules are not finalised and implemented there are few studies available that are comprehensive.

3.2 Potential implications of CRR and CRDIV capital requirements

3.2.1 Description of capital rules framework

9. The Capital Requirements Regulation and Capital Requirements Directive transpose the Basel III capital framework into European Law. The new rules entered into force in 1 January 2014 and will be fully implemented as of 1 January 2022. Under these rules, while the total capital an institution will need to hold remains at 8%, the proportion that has to be of the highest quality – common equity tier 1 (CET1) – increases from 2% to 4.5%. The criteria for each capital instrument will also become more stringent. Furthermore, the new rules harmonise the adjustments made to capital in order to determine the amount of regulatory capital that it is prudent to recognise for regulatory purposes. This new harmonised definition significantly increases the effective level of regulatory capital institutions are required to hold. While the basic own funds requirement stays at 8% of RWA, the new rules also establish five new capital buffers: the capital conservation buffer, the counter-cyclical buffer, the systemic risk buffer, the global systemic institutions buffer and the other systemic institutions buffer. On top of all these own funds requirements, supervisors may add extra capital to cover for other risks following a supervisory review (Pillar 2) and institutions may also decide themselves to hold additional capital.

10. On the one hand, the stricter capital definition lowers banks' available capital and the required capital ratio increases over the next few years until 2019 (for most clauses). At the same time, the RWA for some credit risk exposures are significantly increased. Added together, these two effects will make it difficult for some banks to meet the required capital ratio, making business model adjustments inevitable.

11. The potential implications of new capital rules for the banking system will vary from institution to institution. Banks with larger exposures to trading positions, derivatives, repo transactions, securities lending interbank business will be more affected than others. There will also be higher regulatory costs for banks, which can be relevant depending on the size

of the bank and the complexity of its business. Overall, banks will experience increased pressure on their RoE due to increased capital requirements which, paired with increased RWAs, will put pressure on margins across all business.

3.2.2 Overview of existing impact studies

12. Assuming full implementation of the Basel III framework as of 31 December 2012 (without taking into account transitional arrangements), the CET1 capital ratios of Group 1 banks (Tier 1 capital in excess of EUR 3 bn and internationally active) would have declined from an average CET1 ratio of 11.5% under current rules to an average CET1 ratio of 8.4% under the new framework. The CET1 capital shortfall for Group 1 banks would be EUR 2.2 bn at a minimum requirement of 4.5% and EUR 70.4 bn at a target level of 7.0%. As a point of reference, the sum of profits after tax prior to distributions across the Group 1 sample in the first and second half of 2012 was EUR 63.6 bn. For Group 2 banks (the remainder of the sample of 170), the average CET1 ratio declines from 11.3% to 7.9% under Basel III and the CET1 shortfall is approximately EUR 25.9 bn for the target level of 7.0%. The average Tier 1 and total capital ratios of Group 2 banks decline from 12.0% to 8.5% and from 14.6% to 10.1%, respectively.

13. For Group 1 banks, the overall impact of Basel III on the CET1 ratio can be attributed both to changes in the definition of capital and changes related to the calculation of risk-weighted assets: while CET1 capital declines by 17.6% compared to current rules, RWA increase by 12.8%, on average. For Group 2 banks, while the change in the definition of capital results in a decline of CET1 capital of 22.5%, the new rules on RWA affect Group 2 banks by 10.2%. Deductions in Group 1 and Group 2 banks' CET1 are mainly driven by goodwill (13.5% and 9.0%, respectively), followed by deductions for other financial companies for both Groups (4.6% and 6.8%, respectively).

14. As to the denominator of regulatory capital ratios, the main driver is the introduction of credit valuation adjustment (CVA) capital charges which result in an average RWA increase of 6.0% for Group 1 and of 2.9% for Group 2 banks. Apart from CVA capital charges, the increased RWA attributable to items that fall below the 10%/15% thresholds is the main contributor to the increase in Group 1 banks' RWA (3.4%). As Group 2 banks are generally less affected by the revised counterparty credit risk rules due to their different business models, these banks show a lower increase in overall RWA (+10.2%). The main contributor to the increase in Group 2 banks is the transition from Basel II 50/50 deductions to a 1250% risk weight. Nevertheless, even within this group, the RWA increase has been impacted by CVA capital charges and to a lesser extent by changes attributable to items that fall below the 10%/15% thresholds.

15. While for Group 2 the CET1 ratio remains at the level of the previous period, the increase in the average CET1 ratio from 7.8% to 8.3% for Group 1 is driven by reductions in RWA.

3.2.3 Findings

Business model components					Potential implications of capital requirements
1	Activities	Retail banking		+	Banks will move to business lines that require less capital. Retail banking will not be particularly affected and nor will long-term corporate loans and long-term asset-based finance businesses (commercial real estate, project finance for instance). Other products with relatively higher risk weights such as unsecured loans, and trade finance business will see a decline in volumes. Investment banking and trading businesses will be significantly affected due to the higher risk weights with fewer securitisations, lower trading book exposures and reduced activities in areas such as derivatives, repos and securities financing. It is possible that by reducing the trading book, banks might then increase the loan supply and make a profit out of retail business. An increase in loan supply would also lead to higher consumption and economic growth. The new regulatory measures make capital scarcer and more expensive. Banks will continue launching initiatives to improve capital efficiency for example by reassessing the models they have implemented so far and identifying further correction measures: RWA optimisation (model refinement, process improvement, enhancement of data quality); hedging activities; and new initiatives such as credit-risk and central counterparties models for the trading book and improving loan-loss provisions by eliminating flaws in current processes and models. In addition, banks may reduce credit exposure and potential credit losses through stricter credit approval processes and through lower limits, especially in regard to exposures that require more capital.
		Corporate banking		+/-	
		Investment banking	Proprietary trading	-	
			Market making	-	
			Hedging activities	+	
		Private banking		+/-	
		Non-banking activities (insurance exposures…)		+	
		Off-balance-sheet exposures		-	
2	Banking model	Universal banking model		=	No direct implications.
		Specialised banking model		=	
3	Resources/ liquidity profile	Capital		+	In general, the implementation of the new capital rules will force banks to increase their capital levels, but at the same time it will lead banks to be creative in their capital planning to properly manage their capital requirements. In that sense, banks will try to improve the quality of their capital to ensure that as much as possible is recognised under the new rules. In this vein, banks can optimise the scope of their consolidated capital and their holdings in financial institutions (by, for example, buying out minority stakes or reducing the excess capital of banking subsidiaries or reducing unconsolidated investments below the thresholds defined by the regulator for capital deductions). Banks will also rationalise their tax these assets with respect to both their composition and their amount. It is clear that, higher capital levels will improve the overall funding position of banks, as better capitalised companies will have smoother access to funding markets.
		Deposits	Retail deposits	=	
			Corporate deposits	=	
		Asset encumbrance		=	
		Reliance on wholesale funding		=	
		Maturity of wholesale funding		=	
4	Structure of income	Interest rate income		+/-	Banks will assess the potential profitability of their existing businesses based on the likely effect of the new regulatory requirements and the possibilities of mitigation. One option is to adapt prices and reduce costs to continue operating profitably. Otherwise banks may have to consider exit strategies, reducing the total activity volume. This is likely to happen
		Trading income		-	
		Commissions and fees		+	

					with less profitable lending as well as capital markets and trading businesses. In the same fashion, banks will have to make sure that capital is allocated to segments that generate higher returns adjusted for risk, capital, and funding costs. Banks might decide to scale back business with clients that do not add economic value, as those with high RWAs that are not returning the cost of capital. It will be important to understand the links, interdependencies, and trade-offs among business segments. Some businesses may require small adjustments, while others will be fundamentally affected. Banks will have to design more risk sensitive pricing and performance measurement tools in order to reflect higher costs of capital and potentially, of liquidity. Therefore, loans that require more capital will be subject to higher pricing; this might affect the demand for credit and in the end reduce lending and economic growth. The overall expected effect on the P&L account as regards interest income is uncertain, while it seems that the trading income will be fall. These two effects will lead banks to increase their activities in different jurisdictions and consequently their intragroup flows.
5	Geographic scope	Non domestic exposures	EU exposures	+	Big banks may try to find the best geographical distribution of their business to minimise capital requirements through potential regulatory arbitrage, which would increase cross-border activities. Within Europe this will depend to some extent on how the NSAs implement the national discretions allowed by EU rules. It is well known that demand for banking services often increases in less regulated markets and banks will try to take advantage of the sometimes small regulatory differences between different regions, fostering cross-border activities. Another way to improve the geographical mix is to optimise the bank's legal structure, by merging some legal entities and creating others, and then providing incentives to clients to shift to the entity that allows the bank to minimise its capital and liquidity reserves.
			Foreign (excl. EU) exposures	+	
		Non-domestic funding	EU funding	+	
			Foreign (excl. EU) funding	+	
6	Size	Size		-	Stricter requirements might encourage banks to reduce their RWA by reducing both their exposures and their level of risk which will end in an overall reduction of the size of balance sheets. At the same time, higher capital levels will, in relative terms, reduce the general leverage of the banks.
		Leverage		-	
7	Originate to hold/to distribute	Use of securitisation		-	The new rules include some stricter capital requirements for securitisation and Basel Committee is currently reviewing the framework to strengthen it further, making capital requirements more prudent and risk sensitive. Since the new approaches would result in higher capital requirements this might reduce the participation in securitisation transactions. Banks as investors would be likely to require higher yields to compensate for the increased regulatory capital requirements and the cost of funding via securitisation would be more expensive, pushing banks to exit from this kind of funding model. Alternatively, investors might elect to invest in other potentially riskier assets instead, in order to benefit from lower capital requirements and to try to obtain higher returns.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		-	The return on equity will be lower when capital increases and at the same time profitability is at risk if banks are not able to fully pass on the cost increases to their customers. In addition, the new rules will require significant resources: financial, manpower, management attention, IT-capacity and budgets for external consulting services. Banks will incur indirect costs in addition to the direct costs of higher equity. The riskier regulators perceive a bank business or the assets it creates, the greater the capital requirements will still be under the new regime and the higher the costs incurred by a bank will be. In response, banks' business models will be reshaped by these more stringent requirements reducing
		RoE		-	
		Loan to deposit ratio		=	
		Cost	of funding	-	
			of operations (excluding the cost of implementing the	+	

			regulatory measures)		the risk appetite in a way that reduces their capital requirements Some claim that higher capital requirements may result in higher financing cost due to the fact that liabilities are less expensive than equity. But on the other hand, with more capital, banks should, in principle at least, become safer and, therefore, the cost of funding might fall as a result of higher capital levels and a possible higher credit rating.
9	Operational structure and governance	Number of branches and subsidiaries		+/-	Banks will be particularly concerned about the misuse of capital that would result from inefficient implementation of the new regulatory measures. Possible measures may include undertaking strategic cost reductions through the rationalisation of branch structures, product rationalisation or implementation of a shared services model. In addition, changing the business model may entail selling high risk business units, entering new product segments or businesses, or outsourcing or off-shoring non-core functions. Possible measures might also include changing the group structure, for example by selling minority interests in financial institutions. There might also be operational challenges in implementing these rules, such as data availability, data completeness, data quality and data consistency for calculating the new ratios and a more active approach to balance sheet and client management.
		Intragroup flows		+/-	
		Importance of internal governance		+/-	

3.3 Potential implications of leverage ratio (LR)

3.3.1 Description of LR framework

16. Tier 1 capital as defined in the risk-based capital framework divided by total LR exposure non-RWA should be > 3%, subject to adjustment in 2017.

3.3.2 Overview of existing impact studies

- *EBA Basel III monitoring exercise* (data as of 31 December 2012)

17. Assuming full implementation of Basel III, Group 1 banks would have an average Basel III Tier 1 LR of 2.9%, while Group 2 banks' LR would be 3.4%. A total of 58% of participating Group 1 and 76% of Group 2 banks would have met the 3% target level as of December 2012. The overall shortfall of those banks which do not fulfil the target level amounts to EUR 106.6 bn for Group 1 and to EUR 26.0 bn for Group 2 banks.

- *Basel III: Issues and implications* (KPMG, 2011)

18. The introduction of the LR might lead to reduced lending and is a clear incentive to banks to strengthen their capital position, although it remains to be seen whether the ratio will have an effect for individual firms. The non-risk-adjusted measure might encourage banks to focus on higher-risk/higher-return lending. Pressure develops on banks to sell low margin assets (e.g. mortgages), which might drive down prices on these assets. Banks may be required by the market and the rating agencies to maintain a LR higher than required by the regulator.

- *Does a Leverage Ratio Requirement Increase Bank Stability?* (Kiema and Jokivuolle in *Journal of Banking & Finance*, 2013)

19. This study shows that the LR requirement (LRR) might induce banks with low-risk lending strategies to diversify their portfolios into high-risk loans until the LRR is no longer the binding capital constraint on them. If the LRR is lower than the average bank's IRB requirement, the aggregate capital costs of banks do not increase. However, because the diversification makes banks' portfolios more similar, the banking sector as a whole may become more exposed to model risk in each loan category. This may undermine banking sector stability. On balance, the authors' calibrated model suggests a significantly higher LRR than the current one.

3.3.3 Findings

20. The CRR includes the explicit task of analysing the impact of the LR on business models. Hence, in addition to the impact studies mentioned above, the EBA will create an LR task force, which, using more robust data, will examine this measure thoroughly. Therefore, these results are to be considered as preliminary only and not as representing the EBA's final conclusions about the impact of the LR.

Business model components					Potential implications of LR
1	Activities	Retail banking		-	Since the LR is a non-risk-weighted measure, it would especially affect banks whose business model involves low-margin and low-risk but high-volume lending (e.g. certain types of mortgage lending and municipal finance). For those banks, the LR might become the de-facto limiting factor, although regulatory capital ratios would leave room for further lending. These banks might face challenges to generate sufficient earnings, if for a given amount of business a price adjustment is not possible, hence might be forced to alter their business model. This might involve changing the asset structure towards riskier assets to generate higher margins. Banks might thus shift their exposure from government financing or retail banking activities with high amounts of mortgage lending towards corporate banking, trading book and other non-traditional banking activities (though the final effects on retail may only be ascertained once the adjustments have taken place). Furthermore, evidence suggests that investment banking activities might be reduced if some divisions use a lower average risk weight compared to other business areas. As off-balance-sheet exposures are included in the calculation of the LR, they might fall, while the effect for private banking activities is inconclusive due to the different business elements of which they comprise.
		Corporate banking		+	
		Investment banking	Proprietary trading	-	
			Market making	-	
			Hedging activities	-	
		Private banking		+/-	
		Non- banking activities (insurance exposures...)		+	
		Off-balance-sheet exposures		-	
2	Banking model	Universal banking model		+/-	Whether the LR will imply a complete shift in business models remains unclear, as in the end it depends on the concrete definition of the models as well as the ability to change the business model completely.
		Specialised banking model		+/-	
3	Resources / liquidity	Capital		+	Banks with low risk-weight activities would be forced to hold more capital than would be required by regulatory risk-based capital ratios to fulfil the LR requirements.
		Deposits	Retail deposits	=	

	profile		Corporate deposits	=	The potential consequences of the LR on bank´s asset structures also have corresponding implications on bank´s liquidity profiles. For instance, certain types of mortgage lending are relatively illiquid, whereas most capital market investments, although they are usually riskier in terms of market and credit risk, enjoy a greater degree of liquidity. Hence, if banks increase capital markets activities at the cost of traditional lending activities this might actually enhance their liquidity profiles. However, the effect for each individual bank depends on the specific change in the asset structure of that bank.
		Asset encumbrance		=	
		Reliance on wholesale funding		=	
		Maturity of wholesale funding		=	
4	Structure of income	Interest rate income		+/-	As banks change their activities and asset structure, so too their structure of income might change. Some banks might increase the share of commission-based income at the cost of interest income. At the same time, if investment banking activities decline, trading income might shrink as well. Other banks might move to riskier lending, which increases the probability of value adjustments and volatility of the interest income. However, it is highly unlikely that these banks will be able to move to businesses requiring high experience and market knowledge.
		Trading income		-	
		Commissions and fees		+-	
5	Geographic scope	Non domestic exposures	EU exposures	+/-	Moving to riskier activities might imply shifting the geographic focus to non-core markets. The effect is not clear and depends on several factors.
			Foreign (excl. EU) exposures	+/-	
		Non-domestic funding	EU funding	+/-	
			Foreign (excl. EU) funding	+/-	
6	Size	Size		-	A 3% LR will limit the total size of a bank to 33.3 times its Tier 1 capital. Nowadays, many large international banks are larger, thus they need to sell assets or increase Tier 1 capital to meet this ratio. A bank will only issue new Tier 1 capital if the cost of capital is lower than the margin generated by the activity, which will not be the case for some low-margin lending. As a result, banks might be smaller on average compared to today. Of course, as intended by the regulatory measures, a bank's leverage will decline.
		Leverage		-	
7	Originate to hold/to distribute	Use of securitisation		+	Banks may have an incentive to use traditional securitisation to reduce their balance sheet and hence their capital requirements. The effect, however, also depends on the final design of the LR.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		+	Risk appetite might increase, as banks may be forced to choose how to use their capital. Given the actual level of capital and confronted with the choice between low risk and low margin and higher risk but higher margin most banks will likely go for the second option. As the overall lending capacity falls so will the loan-to-deposit ratio. Due to higher capital levels, the costs of funding per unit of capital are likely to fall as banks become less risky. As the total amount of capital might increase, however, the overall effect on the cost of funding is inconclusive.
		RoE		+/-	
		Loan to deposit ratio		-	
		Cost	of funding	+/-	
			of operations (excluding cost of implementing the regulatory measures)	=	
9	Operational structure and governance	Number of branches and subsidiaries		=	If banks' risk appetite increases and banks move to riskier assets, banks' governance and internal risk controls will have to work hard to optimise the costs of operational risk. Whether banks will respond to this by changing the internal governance is an open question.
		Intragroup flows		=	
		Importance of internal governance		+/-	

3.4 Potential implications of liquidity ratios

3.4.1 Overview of liquidity ratio framework

21. One of the new minimum standards is a 30-day liquidity coverage ratio (LCR) which is intended to promote short-term resilience to potential liquidity disruptions. The LCR requires banks to have sufficient high-quality liquid assets to withstand a stressed 30-day funding scenario. The LCR defines the minimum stock of unencumbered, high quality liquid assets that must be available to cover the net outflow expected to occur in a severe stress scenario. Cash inflows are subject to a cap at 75% of total outflows. Consequently, 25% of cash outflows have to be covered by liquid assets. The European Commission's delegated act on the LCR introduces it as of 1 October 2015. According to the recent revisions to the LCR the minimum requirement will be set at 60% and rise in equal annual steps to reach 100% in 2018.

22. The second liquidity standard is the net stable funding ratio (NSFR) (currently under consultation), a longer-term structural ratio to address liquidity mismatches and to provide incentives for banks to use stable sources to fund their activities. In broad terms, the NSFR is calculated by dividing a bank's available stable funding (ASF) by its required stable funding (RSF). The ratio must always be greater than 1. The ASF and RSF requirements specified in the NSFR are adjusted to reflect the degree of stability of liabilities and liquidity of assets. The ASF measure broadly regards the most stable sources of funding to be regulatory capital, funding which has a maturity of at least a year, and deposits. The RSF measure grades various assets in terms of the stable funding required to support them. For example, loans to financial institutions, assets that are encumbered for a period of one year or more, net amounts receivable under derivative trades, non-performing loans, fixed assets, pension assets, intangibles and deferred tax assets require matched stable funding. Residential mortgages would typically require stable funding in the order of 65% of the mortgage amount. Further, certain short-dated assets maturing in less than one year require a smaller proportion of stable funding as banks may allow some proportion of those assets to mature instead of rolling them over. The NSFR also factors in asset quality and liquidity value, recognising that some assets do not require full financing by stable funding where they can be securitised or are tradable to secure additional funding. Off-balance-sheet commitments and contingencies which create potential calls on liquidity require additional stable funding sources.

3.4.2 Overview of existing impact studies.

23. The main impact study published is the EBA *Basel III monitoring exercise: Results based on data as of 31 December 2012*[4], p. 27ff. The study looked at the impact of incoming regulations on a Basel III basis, as of 31 December 2012. The results will be used to adjust the CRDIV/CRR package by the European Commission through delegated acts.

24. The study predates the SGV business model report and does not differentiate banks except by size of Tier 1 capital and international activity[5].

25. As of December 2012, Group 1 and Group 2 on average show a LCR of 109% and 127%, respectively. At bank level, the ratio varies widely, especially for Group 2 banks. A total of 60% of Group 1 and Group 2 banks in the sample already meet or exceed the 100% requirement. Only 16% Group 1 and Group 2 banks are required to take further action to meet the required minimum of 60% in 2015.

26. For the banks in the sample, monitoring results show a shortfall of liquid assets (i.e. the difference between high-quality liquid assets and net cash outflows) of EUR 225 bn (which represents 1% of the EUR 31.3 trillion total assets of the aggregate sample) as of 31 December 2012. This number is only reflective of the aggregate shortfall for banks that are below the 100% requirement and does not reflect surplus liquid assets at banks above the 100% requirement.

- Net stable funding ratio

27. The NSFR figures reported in impact study as of end December 2012 do not incorporate the proposed changes announced by BIS in a consultation document released in January 2014. However, they are the most recent available indicator of the position of banks in relation to the NSFR. In general, we can assume that banks would perform somewhat better if the proposed changes were incorporated.

28. A total of 164 Group 1 and Group 2 banks provided sufficient data in the end-2012 Basel III implementation monitoring exercise to calculate the NSFR according to the Basel III liquidity framework. As of December 2012, the average NSFR for Group 1 and Group 2 is 96% and 99%, respectively. 50% of these banks already meet or exceed the minimum. NSFR requirement, 87% show a NSFR higher than 85%.

[4] http://www.eba.europa.eu/documents/10180/16145/Basel+III_Monitoring_Report-Dec12.pdf/55261f67-e1ad-4fcd-b134-0be818530722

[5] Group 1 banks are those that have Tier 1 capital in excess of EUR 3 bn and are internationally active. All other banks are defined as Group 2 banks.

29. In total, banks in the sample show a shortfall of stable funding[6] of EUR 959 bn at the end of 2012, which is 22% lower than the EUR 1.23 trillion reported six month before. This number is only reflective of the aggregate shortfall for banks that are below the 100% NSFR requirement and does not reflect any surplus stable funding at banks above the 100% requirement. Banks that are below the 100% required minimum can still take a number of measures until 2018 to meet the standards.

- Other studies

30. This has been a subject of attention for some time; some supervisors have carried out impact studies at national level, generally showing how many banks meet thresholds, and what the shortage at a national system level is (e.g. for Luxembourg, http://www.bcl.lu/fr/reporting/Etablissements_de_credit/Impact_assessment_of_the_new_liquidity_rules_on_Luxembourg_banks__31_12_2012.pdf - this study includes the updated LCR rules.).

31. There are more general studies that pre-date the new rules, such as a study in the impact on bank profitability (http://www.banque-france.fr/fondation/fr/telechar/seminaires/Bordeleau_Graham_WP_Lliquidity_Profitability.pdf), however it is difficult to find recent studies on the subject, especially quantitative ones, at a supranational system level.

32. The BCBS impact study from August 2010 http://www.bis.org/publ/bcbs173.pdf considers the impact during a long period of economic stability, after all requirements have been met, and the transition to the new rules is complete. The study devotes a section on the higher liquidity impact, based on a number of assumptions. The rules have since changed, so the results are to some extent obsolete, but the central thesis, 'Higher capital and liquidity standards are likely to reduce not just the probability, but also the severity of banking crises. Intuitively, higher aggregate levels of capital and liquidity should help insulate stronger banks from the strains faced by the weaker ones', seems correct, supported as it is by some data, but more research is needed.

3.4.3 Findings

Business model components				Potential implications of liquidity ratios	
1	Activities	Retail banking		-	All European banks will be subject to these rules. High-quality liquid assets (HQLA) will be required to meet the LCR requirement. Banks may find that large HQLA holdings, with correspondingly low RWAs may mean that the LR (rather than the
		Corporate banking		-	
		Investment banking	Proprietary trading	+/-	

[6] The shortfall in stable funding measures the difference between balance sheet positions after the application of available stable funding factors and the application of required stable funding factors for banks where the former is less than the latter.

			Market making	+/-	capital ratio) becomes a binding constraint. As retail assets are not considered HQLA, a bank facing problems satisfying the LCR may exit retail assets in favour of HQLA; alternatively they may package retail assets in a covered bond or securitise through RMBS, but in both cases there will be frictional costs due to overcollateralisation. Boutique banks may need to divert part of their assets to HQLA in order to satisfy LCR requirements. Investment banks may face the tension of holding enough HQLA in order to both be able to satisfy LCR and post collateral for margin calls should the need arise. LCRs of mortgage banks, building societies, CCPs, securities trading house and custodian institutions are relatively high. Despite a strong HQLA portfolio, private banks are penalised by a significant short-term liquidity gap. The adjustment required looks critical for auto banks, consumer credit banks and pass-through financing banks as they hardly hold any HQLA. Nevertheless, proprietary trading and market making activities may potentially benefit due to government and corporate bonds being held in these business lines. Banks that take deposits (retail and universal banks, and possibly private banks) will find it easier to satisfy NSFR as they have a retail deposit base; conversely, banks that are particularly dependent on wholesale funding (such as investment banks) may find it challenging to meet NSFR, other things (including asset structure) being equal.. A cost-effective strategy is to reduce assets requiring funding, or concentrate on high-quality, short term loan/bond assets, and have long-term debt and/or equity. This will lead to a reduction in NIM, as yield will be less on assets, long-term funding will be more expensive, and the scope for maturity transformation will diminish. As NSFR excludes short term wholesale funding, the latter cannot be used for satisfying the ratio (an issue for investment banks, who are more reliant on this funding type). Off-balance-sheet exposures are taken into account for ratios, and therefore there is little incentive for entering into these transactions from a liquidity point of view.
			Hedging activities	-	
		Private banking		+	
		Non-banking activities (insurance exposures...)		=	
		Off-balance-sheet exposures		-	
2	Banking model	Universal banking model		+	As stated before, banks that can access retail deposits or long-term funding will be able to satisfy LCR (due to lower denominator (outflows) compared with e.g. short-term wholesale funding) and NSFR requirements more cheaply and easily than banks that do not have this same access to such funds. As specialised banks tend to be more dependent on wholesale funding this will put strain on them.
		Specialised banking model		+/-	
3	Resources/ liquidity profile	Capital		+	Capital does not mitigate the liquidity situation directly. Nevertheless there are links, as a strong capital base in general (and other things being equal) results in lower funding costs due to the perceived lower risk of default and consequent higher rating of the bank as a borrower of funds. A strongly funded position (over the long term and at low prices) would also lead to lower funding costs and therefore add to capital growth. The institution could also raise capital more easily. Nevertheless, banks face a balancing act as liquidity buffers of high-quality low-yield assets will tie up capital in low-yield assets and thus have an effect on profitability. The NSFR will push banks towards increasing customer deposits, and long-term wholesale funding (interbank lending) and equity, and discourage shorter-term funding. This may point to higher funding costs, as there is both competition and expected higher returns for this liability structure. There are incentives to lengthen liquidity profiles as NSFR recognises
		Deposits	Retail deposits	+	
			Corporate deposits	+	
		Asset encumbrance		-	
		Reliance on wholesale funding		-	
		Maturity of wholesale funding		+	

					long-term interbank funding. Nevertheless, the status of deposits is unclear since the ratio may include term deposits. Retail deposits are stickier than wholesale. Overall, deposits will become more desirable, (so loan to deposit is likely to decease, especially in the current deleveraging environment). Short term funding is discouraged under NSFR as is asset encumbrance (by requiring stable funding set against the entire amount of assets with maturity over 1 year).
4	Structure of income	Interest rate income		-	A high liquid buffer with high-quality/low-return assets may put pressure on banks' earnings and push banks to search for yield on the other parts of the asset book, possibly encouraging riskier behaviour. There may be less scope for maturity transformation business as there are incentives for reducing long-term lending in order to hold more government bonds and other short term assets. There are also potential net interest income pressures due to competition for deposits which is likely to drive up prices for them – as deposits are considered more stable funding and therefore beneficial for the NSFR. Trading income is affected to the extent that it uses short-term wholesale funding that may become scarcer/more expensive. The funding would be supporting only open positions. Fees and commissions typically flow from advice or cross-selling and not assets, therefore do not need funding. Products that support M&A or cross-sold assets would be captured elsewhere.
		Trading income		=	
		Commissions and fees		+	
5	Geographic scope	Non domestic exposures	EU exposures	+	The proposed LCR gives a privileged position to debt of sovereigns denominated in currency that matches assets. For most EU banks, this means domestic currency, as their business is concentrated in the domestic market. EEA banks will be subject to the rules, through the CRDIV/CRR package. The rules have been drafted by the BCBS, so in theory they should eventually also apply to the US (through 'moral suasion'; no legal obligation), although implementation of Basel 2 in the US shows that it will be subject to lobbying efforts. Nevertheless, the Fed has said it intends to implement some version of the LCR and other Basel III liquidity standards in the US. The scope, timing and implementation are unclear. Other jurisdictions will also follow the BCBS lead, if the Basel II precedent is followed.
			Foreign (excl. EU) exposures	-	
		Non-domestic funding	EU funding	-	
			Foreign (excl. EU) funding	-	
6	Size	Size		=	The structure of funding rather than size is a more relevant issue for LCR and NSFR but there may be leverage considerations. A bank may deleverage to satisfy LCR and NSFR requirements, by reducing the denominators.
		Leverage		-	
7	Originate to hold/to distribute	Use of securitisation		+	Under the latest revisions, residential mortgage-backed securities (RMBS) with AA rating (but not own issues) may be counted as level 2B assets (higher haircuts) for the LCR. This was a watering down of the initial proposals which is more accommodating to the securitisation market. The introduction of the LCR is likely to encourage banks to securitise (illiquid) assets in order to generate cash inflows and release these assets from their balance sheet, and the recognition of RMBS as level 2 may mean that other institutions are more likely now to hold such securities.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		-	Potential implications for profitability are inconclusive: there is a push to HQLA that are low yielding (and therefore risk appetite will decline). Lengthening maturities and the scramble for HQLAs at the same time will push the cost of funding up.; nevertheless the safer banks that will
		RoE		-	
		Loan to deposit ratio		-	
		Cost	of funding	+	

		of operations (excluding the cost of implementing regulatory measures)	+/-	result may push cost of funding lower as a second-order effect. But in the first instance, other things being equal, RoE is likely to fall.
9	Operational structure and governance	Number of branches and subsidiaries	-	There seems to be a trend towards 'ring-fencing'. This is seen in practice by NSA actions, and comments from the BCBS suggest that banks and regulators should not assume that currencies will be freely transferable in times of stress. This may affect subsidiaries, but host supervisors may prefer subsidiaries (locally controlled) to branches (home controlled) especially if there is deposit taking going on. The LCR treats intragroup inflows and outflows differently, with inflows capped at 75% of total expected outflows (except with regulatory approval) and outflows that are unspecified (therefore multiplied by 100%, or with regulatory approval, in the presence of a joint decision and other conditions, a lower percentage). This is subject to EBA review and modification, but for the time being the unequal treatment of inflows and outflows (in the absence of specific regulatory action) is likely to discourage liquidity transfers within a group, and make the LCR difficult to meet for 'liquidity centres'. This then also discourages a hub-and-spoke model of liquidity with one centre and many subsidiaries.
		Intragroup flows	-	
		Importance of internal governance	=	

3.5 Potential implications of structural reforms for banks' business models

3.5.1 Overview of the main structural reforms of the banking sector

33. There are three main structural reforms affecting the global banking system.

34. In the EU, the Liikanen Report aims to separate proprietary trading activities from the rest of the group if these activities represent a significant share of a bank's business, or if the volume of these activities can be considered significant from the viewpoint of financial stability. This separation is to enhance financial stability, protect insured depositors and safeguard banking groups' ability to lend to the economy. It applies to credit institutions, financial holding companies and mixed financial holding companies beyond a threshold that is yet to be defined.

35. The UK is implementing the recommendations of the Independent Commission on Banking (ICB) which will lead to:

- the introduction of a ring-fence around retail and SME deposits and associated payment and overdraft facilities to separate core everyday banking activities from investment banking activities;
- preference for deposits protected under the Financial Services Compensation Scheme (FSCS); and
- higher loss-absorbency requirements on banks to ensure they can absorb more losses in a resolution scenario.

36. As well as implementing the 'Volcker rule' which bans proprietary trading, the US authorities are consulting on the implementation of intermediate holding companies (IHC) for large foreign banks operating (FBO) in the US. This is part of the Dodd-Frank Act (Section 165).

The proposal requires the establishment of a separately capitalised top tier US IHC to hold all US bank and non-bank subsidiaries (except subsidiaries which are principally engaged in banking business outside of the US).

37. Outline of the key prudential requirements of the US IHC proposals

- Capital – the US IHC would be subject to the US capital requirements for US bank holding companies. If the wider consolidated FBO group is not required to meet capital requirements similar to Basel III, a further surcharge will be added.
- Liquidity – the US IHC would be subject to a 30-day US liquidity buffer and other liquidity

risk management requirements including internal liquidity stress tests.

- Stress testing – Dodd-Frank capital stress testing would be required for the US IHC. The rest of the FBO (including the US branches and agencies) would be subject to and have to pass US-comparable annual home regulator capital stress tests at a group level and provide certain information to the Federal Reserve Board (FRB) on its home stress tests. The consequences of non-compliance include tighter intragroup funding restrictions and additional liquidity requirements.

- LR – enhanced requirements may apply to the largest FBOs if the FSOC identifies a threat to US financial stability.

- Large exposures – the aggregate net credit exposure of US banking operations with third parties, would be limited to 25% of the IHC. A stricter limit (10%) would apply to exposures between 'major' counterparties. A quantitative study is underway and these rules may be revised.

- Risk management – the FBO must establish a board level US risk committee and appoint a US chief risk officer – both of which must comply with requirements to be imposed by the FRB.

- Resolution – the FRB has said that it will take the following steps as concerns arise about the health of the financial sector: increased supervisory review; initial remediation; recovery then recommended resolution. The triggers for these steps are related to the capital adequacy of the FBO and US IHC; stress tests of the IHC; risk management; liquidity risk management and FRB market indicator thresholds (relating to both the FBO and US IHC).

3.5.2 Overview of existing impact studies.

38. BIS Working Papers No 412 - *Structural bank regulation initiatives: approaches and implications*, (April 2013) :

- A number of jurisdictions are considering whether to implement regulations that impose restrictions on the scope of banking activity, or they have already taken concrete steps towards doing so. These initiatives include the so-called 'Volcker rule' in the United States, the proposals of the Vickers Commission in the United Kingdom, and the European Commission's Liikanen Report. Legislation on structural bank regulation has been passed in Germany and France.

- The proposals for structural bank regulation break with the conventional wisdom that the banking sector's efficiency and stability stands only to gain from the increased diversification of banks' activities. Rather, structural bank regulation sees the combination of commercial banking and certain types of capital market related activities as a source of systemic risk. The common element of all the proposals is to restrict universal banking by drawing a line somewhere between 'commercial' and 'investment' banking businesses; hence the various initiatives on structural bank regulation to change how banks organise themselves.

- Structural bank regulation initiatives are designed to reduce systemic risk in several ways.

Firstly, they can shield the institutions carrying out the protected activities from losses incurred elsewhere. Secondly, they can prevent any subsidies supporting the protected activities (e.g. central bank lending facilities and deposit guarantee schemes) from cutting the cost of risk-taking and inducing moral hazard in other business lines. Thirdly, they can reduce the complexity and possibly the size of banking groups, making them easier to manage, more transparent to outside stakeholders and easier to resolve.

- However, the initiatives also raise some challenges. One risk is that banks may respond to the reforms by moving certain activities beyond the scope of consolidated regulation. In fact, one reason why the Liikanen Report opts for subsidiarity rather than full separation is to reduce this risk. Migration would be a concern if these activities were systemic in nature.

- Secondly, structural regulation may, through various channels, affect the international activities of universal banks in particular. For example, disincentives for global banking may be created by initiatives seeking to protect depositors and cut the costs of the official safety net within the home country jurisdiction. Moreover, ring-fencing and subsidiarity may limit the allocation of capital and liquidity within a globally operating banking group. Through these channels, structural regulation may contribute to a fragmentation of banking markets along national lines.

- A third risk is that structural regulation may create business models that are, in fact, more difficult to supervise and resolve. For example, resolution strategies may be rather complex to design and implement for globally operating banks that have to face increasing heterogeneity in business models permitted at the national level.

3.5.3 Findings

<table>
<tr><th colspan="3">Business model components</th><th>Potential implications of structural reforms</th></tr>
<tr><td rowspan="8">1</td><td rowspan="8">Activities</td><td colspan="2">Retail banking</td><td>=</td><td rowspan="8">Retail banking will be ring-fenced and potential implications for corporate banking will depend on where the firms decide to place their corporate banking activities. Non-ring-fenced entities that include investment banking and trading activities will come under pressure to reduce the amount of business if they are cannot finance it. The potential implications for the off-balance-sheet exposure will depend on the type of exposure and where it is placed within the group. Depending on the degree of intragroup separation, banks may find it harder to loss lead on certain products in order to cross-sell other products which may not be permitted for the deposit bank. This may result in banks having to alter the pricing of certain products.</td></tr>
<tr><td colspan="2">Corporate banking</td><td>+/-</td></tr>
<tr><td rowspan="3">Investment banking</td><td>Proprietary trading</td><td>-</td></tr>
<tr><td>Market making</td><td>-</td></tr>
<tr><td>Hedging activities</td><td>-</td></tr>
<tr><td colspan="2">Private banking</td><td>+/-</td></tr>
<tr><td colspan="2">Non-banking activities (insurance exposures...)</td><td>=</td></tr>
<tr><td colspan="2">Off-balance-sheet exposures</td><td>+/-</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Banking model</td><td colspan="2">Universal banking model</td><td>-</td><td rowspan="2">The potential implications for the universal banking model will be significant and depend on the degree of separation. While the separate ring fenced entities will be maintained under the group, intragroup efficiencies and economies of scope may be lost or reduced significantly due to the inability of the business to benefit from economies of scale and cross-selling. Potential implications for the specialised banking models will depend on the specific activities and structure but is likely to be affected.</td></tr>
<tr><td colspan="2">Specialised banking model</td><td>+</td></tr>
<tr><td>3</td><td>Resources/</td><td colspan="2">Capital</td><td>+</td><td>The structural reforms are overall pushing for higher levels of going</td></tr>
</table>

	liquidity profile	Deposits	Retail deposits	=	concern capital resources and gone concern loss-absorbency capacity (long-term unsecured debt). In the US, the reforms are removing the ability of a subsidiary to rely on group capital. Certain reforms, such as those in the US, are also proposing separate liquidity pools than are more restrictive than in the past. It is likely that the investment banking business's ability to raise capital will be affected and capital might become more expensive depending on the perceived riskiness of the entity. Asset encumbrance may potentially increase if the group chooses to use assets to fund its activities across the group. Reliance on wholesale funding will increase in the investment banking entity as the use of retail deposits will be restricted. Furthermore, the cost of funding for non-ring-fenced trading activities is likely to increase leading to increased reliance on collateralised (repo) and short-term funding.
			Corporate deposits	+/-	
		Asset encumbrance		+	
		Reliance on wholesale funding		+/-	
		Maturity of wholesale funding		+/-	
4	Structure of income	Interest rate income		+/-	As noted above, depending on the height of the ring fence, certain ancillary activities linked to lending may no longer be fully permissible by the deposit bank and would have to be provided on an agency basis by the rest of the group or by a third party. As diversification of the income and ability to cross-sell fall, dependency on net interest income will increase in the retail business and volatility of investment banking income is also likely to increase.
		Trading income		-	
		Commissions and fees		+/-	
5	Geographic scope	Non domestic exposures	EU exposures	=	Banks may have to restructure business lines to ensure they comply with the relevant regulations and to optimise their accounting practices. UK ICB restrictions on business activities outside the EEA will put further pressure on earnings diversification, thus limiting income sources. Ring-fenced retail entities active in trade finance might not be able to raise USD funding.
			Foreign (excl. EU) exposures	-	
		Non-domestic funding	EU funding	=	
			Foreign (excl. EU) funding	-	
6	Size	Size		-	Ring-fenced retail activities may be constrained by LR due to having less risky assets on their balance sheets therefore affecting their ability to grow and increase business. Trading activities may be affected by RWA although in some cases leverage constraints may be applicable, particularly for the repo business.
		Leverage		-	
7	Originate to hold/to distribute	Use of securitisation		+/-	There may be a potential constraint on the retail ring-fenced banks' ability to do third party securitisations which might have implications for the ABS market.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		+	Increase in risk appetite may potentially affect both ring-fenced and non-ring-fenced entities. Due to potential leverage constraints in the retail division, firms may be encouraged to increase the riskiness of exposures. On the other hand, due to increases in the cost of funding for investment and trading activities, returns will come under pressure leading to increased risk appetite. Increases in the cost of funding will result in lower returns on equity for investment banking activities. At the same time, segregation of business and of activities is likely to increase operational costs for both parts of the business.
		RoE		-	
		Loan to deposit ratio		+/-	
		Cost	of funding	+	
			of operations (excluding the cost of implementing the regulatory measures)	+	
9	Operational structure and governance	Number of branches and subsidiaries		-	The complexity of operational structure and internal governance is likely to increase given the need for independent boards and separate risk committees. The interplay between the boards of the group, the ring-fenced entity and the non-ring-fenced entity will add to management complexity.
		Intragroup flows		-	
		Importance of internal governance		+	

3.6 Potential implications of resolution regimes for business models

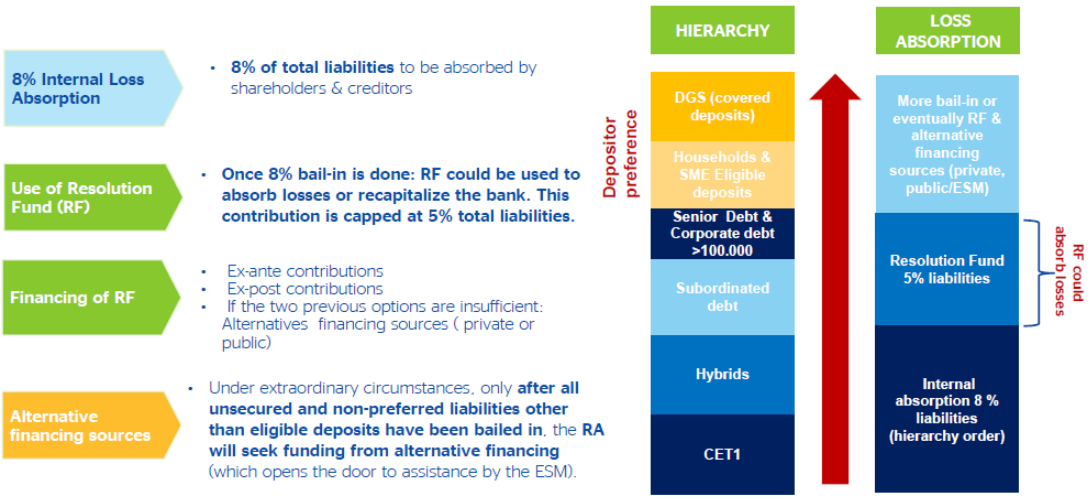
3.6.1 Description of resolution rules

39. The EU Bank Recovery and Resolution Directive (BRRD) defines the means by which a failing bank can be resolved. Among the resolution tools, the Directive enables the resolution authority to impose losses on shareholders and unsecured creditors. Bail-in liabilities may be written down or converted into equity when the resolution authority puts a failing bank into resolution. If a bank is assessed as non-viable, the Directive also provides for capital instruments to be written down or converted into equity even if the bank does yet not meet all of the conditions for resolution.

40. The scope of bail-in is broad, encompassing all liabilities except those explicitly excluded (insured deposits, secured liabilities, liabilities with an original short-term maturity).

41. In order to prevent banks from circumventing the bail-in rules, the Directive also defines minimum requirements for own funds and eligible liabilities ensuring that banks have sufficient loss-absorbing capacity.

Table 2: Overview of the resolution framework



Source: BBVA Research

3.6.2 Overview of existing impact studies.

42. The current literature does not cover any relevant studies on the impact of resolution rules on business models. All findings are therefore primarily based on expert judgment.

3.6.3 Findings

Business model components					Potential implications of resolution rules
1	Activities	Retail banking		=	The implementation of resolution rules is not intended to affect the structure of assets of banks directly as the BRRD focuses on the liability side of the balance sheet. However, there might be second-round effects if banks modify their business strategy to adapt to the new funding constraints (focus on core businesses and on business activities that do not rely on short-term wholesale funding such as private banking). In addition, the asset side may be indirectly affected by the banks' decision to match asset yields with possible higher funding costs. Second-round effects have been excluded from the analysis.
		Corporate banking		=	
		Investment banking	Proprietary trading	=	
			Market making	=	
			Hedging activities	=	
		Private banking		=	
		Non-banking activities (insurance exposures...)		=	
		Off-balance-sheet exposures		=	
2	Banking model	Universal banking model		=	No direct implications.
		Specialised banking model		=	
3	Resources/ liquidity profile	Capital		+	Under the new framework, banks will be subject to minimum requirements for debt that can be bailed-in (capital, long-term unsecured debt, some non-insured term deposits). The cost of debt that can be bailed-in may increase to reflect the removal of implicit guarantees, although much of this impact should already be priced in. However, the potential implications for liability structure are inconclusive in the medium term. After the transition period, once the minimum requirement[7] is reached, banks are likely to increase the volume of debt that cannot be bailed-in (secured debts, deposits covered by DGS, short-term funding). Nonetheless, the larger volume of debt that can be bailed in should reduce the cost of debt that cannot be bailed-in.
		Deposits	Retail deposits	+	
			Corporate deposits	+	
		Asset encumbrance		-	
		Reliance on wholesale funding		-	
		Maturity of wholesale funding		+	
4	Structure of income	Interest rate income		-	Following an increase in the amount of unsecured debt funding, banks' profit is likely to fall (decrease in interest margins, depressed RoE) even though in the long term part of the incremental funding cost is likely to be re-priced to customers.
		Trading income		=	
		Commissions and fees		=	
5	Geographic scope	Non domestic exposures	EU exposures	=	Up to now differences in national resolution regimes opened up the possibility of regulatory arbitrage for cross-border institutions. As regulatory technical standards and guidelines will be set to harmonise national resolution regimes, banks' decisions to settle in a specific country within the EU will no longer be influenced by the national resolution frameworks.
			Foreign (excl. EU) exposures	=	
		Non-domestic funding	EU funding	=	
			Foreign (excl. EU) funding	=	

[7] The new Recovery and Resolution regime will require banks to hold a certain amount of bail-in debt relative to total liabilities.

6	Size	Size	=	No direct implications for size and leverage. However, negative second-round effects are to be expected as access to wholesale funding deteriorates, banks' leverage is likely to fall.
		Leverage	=	
7	Originate to hold/to distribute	Use of securitisation	=	No direct implications for securitisation.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)	-	In the short term, the cost of debt that can be bailed-in (equity, subordinated and unsecured senior debt) may rise as investors will factor in the increased risk of having to bear potential losses[8]. However, a significant part of this effect should already be priced in. The greatest effect of the new resolution rules should, in principle, be on those banks that would in the past have benefited most from an implicit guarantee. In other words, it can be expected to affect systemically important financial institutions (SIFIs) to a greater extent, and of the SIFIs, to affect the riskiest banks the most. As a result of the removal of an implicit bail-out guarantee, holders of bank debt are expected to monitor banks more closely, thus mitigating moral hazard phenomena. Such market discipline may mean that the expected rise in the cost of bank funding would be counterbalanced by an overall reduction in bank risk in the long term.
		RoE	-	
		Loan to deposit ratio	=	
		Cost of funding	+	
		Cost of operations (excluding the cost of implementing the regulatory measures)	=	
9	Operational structure and governance	Number of branches and subsidiaries	=	Uncertainty regarding the prudential treatment of intragroup flows within the EU resolution framework. Changes to legal and operational structures (e.g. the establishment of holding companies) may be required to ensure resolution plans can be implemented.
		Intragroup flows	+/-	
		Importance of internal governance	=	

[8] Analysts' estimates vary, but a comparison of the incremental cost of existing contingent capital instruments (which have characteristics broadly similar to future bail-in instruments) versus senior debt of the same issuer shows that bail-in cost might come to an average of 500 basis points. In times of economic stability, it would cost on average 160 basis points more to issue bail-in debt versus similar maturity senior unsecured debt but there would be wide variations among banks (stronger issuers may pay less and weaker issuers are expected to pay more) (IMF (2012) *Bank debt in Europe: Are Funding Models Broken?* Vanessa Le lisle WP/12/99.

3.7 Potential implications of EMIR for banks' business models

3.7.1 Description of EMIR

43. The European Market Infrastructure Regulation (EMIR) has been designed to reduce the counterparty risk in OTC derivative markets and to increase transparency within the markets.

44. EMIR addresses the risk of OTC derivatives trading by imposing three key obligations:

- Clearing: standardised OTC derivatives, as determined by the European Securities and Markets Authority (ESMA), must be cleared through a central counterparty (CCP), unless the counterparty has an exemption although strict conditions apply (i.e. intragroup transactions or subject to certain clearing thresholds for trades with non-financial counterparties).

- Margin and capital: clearing counterparties should have permanent, available and separate initial and variation margins in the form of highly liquid collateral. The counterparty risk mitigation on cleared OTC derivative transactions forces counterparties to pay (from day one) initial and variation margins in highly liquid collateral (cash, gold, government bonds, etc.). All entities covered (i.e. financial firms and systemically important non-financial entities) that engage in non-centrally cleared derivatives will be subject to strengthened risk management requirements and must exchange initial and variation margin as appropriate to the counterparty risks posed by such transactions. In addition, non-cleared transactions will be subject to additional capital requirements.

- Reporting: all derivative contracts should be reported to trade repositories. Daily reporting will be required for all trades (OTC cleared, OTC not cleared but also exchange traded) in order to identify potential pockets of systemic risk.

45. Unlike previous legislation covering financial regulation, which applied only to prudentially regulated entities such as banks or investment firms, EMIR imposes obligations on all participants in EU derivatives markets. EMIR covers all entities established in the EU (banks, insurance companies, pension funds, investment firms, corporates, special purpose Vehicles – SPVs) that enter into derivatives trades, whether they do so for trading purposes, to hedge commercial exposure or as part of their investment strategy.

3.7.2 Findings

<table>
<tr><th colspan="4">Business model components</th><th colspan="2">Potential implications of EMIR</th></tr>
<tr><td rowspan="4">1</td><td rowspan="4">Activities</td><td colspan="2">Retail banking</td><td>=</td><td rowspan="4">Broker dealer investment banks which regularly write OTC derivative contracts for clients' or proprietary business will be directly affected by the implementation of EMIR. Smaller and other non-clearing member banks might also withdraw from derivative markets as regulatory and operational requirements</td></tr>
<tr><td colspan="2">Corporate banking</td><td>=</td></tr>
<tr><td rowspan="2">Investment banking</td><td>Proprietary trading</td><td>-</td></tr>
<tr><td>Market making</td><td>=</td></tr>
</table>

			Hedging activities	-	might turn out to be too costly. At the moment, the global potential implications for the size of derivative market are unknown. The current and notable decline in the volume of the derivative market seems mostly due to fall in trading volumes rather than to regulatory changes[9].
		Private banking		-	
		Non-banking activities (insurance exposures...)		=	
		Off-balance-sheet exposures		+/-	
2	Banking model	Universal banking model		=	No direct implication.
		Specialised banking model		=	
3	Resources/ liquidity profile	Capital		-	Cleared transactions will not be subject to additional capital requirements. Asset encumbrance is likely to increase as banks might be required to post more collateral due to stricter collateral requirements by CCPs and current netting effects between banks. However, as most trades are already collateralised and the overall volume of derivatives might fall with the G-20 derivative regulations, it is difficult to predict the ultimate outcome.
		Deposits	Retail deposits	=	
			Corporate deposits	=	
		Asset encumbrance		+	
		Reliance on wholesale funding		=	
		Maturity of wholesale funding		=	
4	Structure of income	Interest rate income		=	Trading income and commissions and fees are expected to fall following an increase in liquidity and operational costs related to derivative activities. If another clearing member within one CCP defaults, a bank acting as a clearing member might incur losses through the CCP's funded or even unfunded default fund contribution.
		Trading income		-	
		Commissions and fees		-	
5	Geographic scope	Non domestic exposures	EU exposures	=	No direct implication
			Foreign (excl. EU) exposures	=	
		Non-domestic funding	EU funding	=	
			Foreign (excl. EU) funding	=	
6	Size	Size		=	No direct implication.
		Leverage		=	
7	Originate to hold/to distribute	Use of securitisation		=	No direct implication but there may be second-round effects as banks will seek to increase their portfolios of highly liquid collateral.
8	Risk appetite and performance	Risk appetite (RWA/total exposures)		-	Risk appetite is expected to fall as EMIR requires banks to strengthen their risk management and to improve transparency on derivative activities. Transition to the new regulatory framework will cause costly operational changes (mandatory registration, reporting of all
		RoE		+/-	
		Loan to deposit ratio		=	
		Cost	of funding	+/-	

[9] DB Research (2013) *Reforming OTC derivatives markets, Observable changes and open issues* (http://www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD0000000000318054/Reforming+OTC+derivatives+markets%3A+Observable+changes+and+open+issues.pdf)

			of operations (excluding the cost of implementing the regulatory measures)	**+**	derivative contracts/review number and type of collateral relationships with counterparties.).
9	**Operational structure and governance**	**Number of branches and subsidiaries**		**=**	No direct implication.
		Intragroup flows		**=**	
		Importance of internal governance		**=**	

4. Conclusion

46. The analysis shows that there are significant potential implications of the new regulatory measures for certain components of banks' business models. There is likely to be pressure on the future profitability and the returns of the banking sector as it changes to meet the new requirements. In addition, the complexity and costs of managing the change in the regulatory environment will be high and some banks will need to develop new business models, which will be successful once the regulatory framework is finally in place.

47. **The other important aspect of changes in banks' business models are the potential implications for lending to the real economy** as banks ascertain which areas of lending are the most favourable for them[10].

48. **As a result of the changes in banks' business models it is also likely that some aspects of lending will move to the shadow banking sector.** Non-traditional banking institutions will start to participate in markets that 'traditional' banks, either for reasons of profitability or complexity, decide to leave. This trend is already evident in the increasing role that private equity firms and hedge funds are playing in the commercial real estate segment in some countries. There is also cross-sector interplay as insurance firms have started to participate in certain areas of lending/financing, leading to some overlap with the banking industry. As a result of measures taken by various NSAs it is also likely that banks will re-consider the markets they wish to be involved in and the way in which they themselves are organised.

49. This study is a qualitative assessment of the potential implications of regulatory changes and focuses for banks' business models. There may be **a need for further work to explore the impact on banks 'counterparties and to support the analysis using a more quantitative approach based on existing internal and industry impact assessments.** However, a quantitative assessment might be challenging given that some of the regulatory rules have not been finalised and there are few studies that consolidate the various effects of regulatory changes.

[10] Various international organisations including the BIS have analysed the effects that capital requirements would have on banks' lending spreads and on the real economy using a macroeconomic model. It is difficult to compare the assessment results directly due to differences in their samples and methodologies. The BIS (Macroeconomic Assessment Group, 2010) estimated that a 1pp increase in equity capital ratio over the course of 4 years would result in a 15bp increase in lending spreads and a 1.4% decrease in lending volumes, and that as a result the GDP of the global economy would shrink by as much as 0.19% (0.045% annual decrease), assuming that the RoE remains the same. The OECD (2011) analysed the macroeconomic impacts of Basel III on banks in the US, the euro area and Japan while the IMF (2011) analysed the impacts on banks in the US, the euro area, Japan, the UK and Switzerland.

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