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ASSESSMENT OF THE CUMULATIVE IMPACT OF VARIOUS REGULATORY INITIATIVES ON THE EUROPEAN BANKING SECTOR

STUDY

Abstract

In this study we assess the most important current regulatory initiatives for the banking sector to the extent possible and on the basis of existing literature. An extensive overview of relevant considerations regarding each measure is followed by a holistic impact assessment. While a direct impact on the real economy through a change in credit supply by banks is assessed to be small, it is difficult to judge the measures' overall indirect influence on increasing stability. For this purpose six distinct stability objectives are put forward and the measures' expected impact on each is assessed in detail. These objectives are: (1) reduction of procyclicality, (2) reduction of misguided incentives, (3) creation of a level playing field, (4) internalisation of social costs, (5) increasing transparency and (6) increasing consumer/investor confidence. According to the survey conducted for this study among German financial market experts, the current state of effective regulation is deemed to be exceptionally insufficient with regard to the first three stability objectives. This study implies that for those objectives the impact of the entirety of regulatory efforts is likely to be most salient, but also most ambiguous. The assessment indicates where the design of effective regulation may be particularly challenging and points out possible detrimental effects on financial stability.

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LIST OF ABBREVIATIONS

AFME	Association for Financial Markets in Europe
AIMA	Alternative Investment Management Association
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (German financial regulator)
BBA	British Bankers' Association
BDCN	Broker/Dealer Crossing Network
CCP	Central Counterparty
CDS	Credit Default Swaps
CRD IV	Capital Requirements Directive IV
CRA	Credit Rating Agencies
CNMV	Comisión Nacional del Mercado de Valores (Spanish financial regulator)
CoCos	Conditional Convertible Bonds
DGS	Deposit Guarantee Schemes
DTTC	Depositary Trust and Clearing Company
EFAMA	European Fund and Asset Management Association
ESMA	European Securities and Markets Authority
ESME	European Securities Market Expert Group
FASB	Financial Accounting Standards Board
FCAG	Financial Crisis Advisory Group
FDIC	Federal Deposit Insurance Corporation
FSA	Financial Services Authority
FSB	Financial Stability Board
FSC	Financial Stability Contribution
FAT	Financial Activity Tax
FTT	Financial Transaction Tax
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
G-SIFIs	Global Systemically Significant Financial Institutions

IAS	International Accounting Standards
IASB	International Accounting Standards Board
ICS	Investor Compensation Schemes
ICSD	Investor Compensation Schemes Directive
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
ISDA	International Swaps and Derivatives Association
ISLA	International Securities Lending Association
JRC	Joint Research Centre
MiFID	Markets in Financial Instruments Directive
NYSE	New York Stock Exchange
SEC	Securities and Exchange Commission
SIFIs	Systemically Important Financial Institutions
SMEs	Small and Medium Enterprises
TR	Trade Repository
OTC	Over the counter
VAT	Value Added Tax
WACC	Weighted Average Cost of Capital

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EXECUTIVE SUMMARY

The aim of this study is to assess the costs and benefits of the most important regulatory measures that are currently being implemented or are under discussion. In addition to the amendments to the Capital Requirements Directive (CRD IV) discussed in the linked study (PE 464.423, 2011, Clerc-Renaud et al.), we consider the following regulatory measures in our study: credit rating agencies, short sales and credit default swaps, MiFID, deposit guarantee schemes, investor compensation schemes, OTC derivatives, regulation of systemically important financial institutions (additional capital requirements), procedures for bank restructuring and resolution, bank taxes and levies, as well as accounting rules.[1]

To evaluate the costs and benefits of the different regulatory proposals we analyse and summarise the relevant theoretical and empirical literature and we also conducted a survey amongst 77 German financial market experts. The data gathered by these additional questions contained in the survey done in June 2011 complement the assessment of the considered regulatory proposals.

We combine the effects of the individual regulatory measures to estimate an overall impact on financial stability. To give deeper insights into specific effects we divide 'financial stability' into six objectives and consider how the regulatory measures contribute to fulfilling these specific objectives. The six objectives are: (1) reduction of procyclicality, (2) reduction of misguided incentives, (3) creation of level playing fields, (4) internalisation of social costs, (5) increasing transparency, and (6) increasing consumer confidence. Based on the analysis of the relevant theoretical and empirical literature, the impact assessments are done qualitatively using the following scale: -2 (strong negative impact), -1 (slight negative impact), 0 (no significant impact), +1 (slight positive impact) and +2 (strong positive impact). The expected impact of a specific measure on a specific objective may also be evaluated in terms of a range (e.g. +1 to +2). A range is suggested when there are either alternative measures with distinct expected impacts currently being discussed, or the expected impact of a specific measure is highly uncertain.

Table 1: Summary of key findings

	Measure/ Objective	CRD IV	OTC Derivatives	CRA	DGS	Short Sales	MiFiD	ICS	Taxes / Bank Levies	SIFIs Capital Requirements	Bank Resolution	Accounting Standards
Financial Stability / Reduction of Systemic Risks	Reduction of procyclicality	+1 to +2	+2	-2 to +2	0	-2 to +1	-1 to +1			+1 to +2		+1
	Reduction of misguided incentives	+1		-1 to +2	+1	-1		0		+1 to +2	+1 to +2	
	Creation of level playing fields	-1 to +1	0 to +1	0	-1 to +1	+1	+1	+1	-2	+1 to +2	-2 to +1	+1
	Internalisa-tion of social costs	+1	+1 to +2		+1 to +2				+1	+1 to +2	+1 to +2	
	Increasing transparency	+1	+2			+1	+1 to +2					+1
	Increasing consumer confidence				+2			0 to +1				

[1] We do not, however, cover the regulatory rules which are part of Solvency II as this regulatory framework is primarily directed towards the insurance sector and not towards banks, which are the focus of this study.

1. INTRODUCTION: COSTS OF THE FINANCIAL CRISIS AND METHODOLOGY USED

The last financial crisis demonstrated the inadequacy of the present regulatory framework regarding the financial system's stability and showed the very large negative effects on the real economy, private depositors and states caused by an instable financial system.

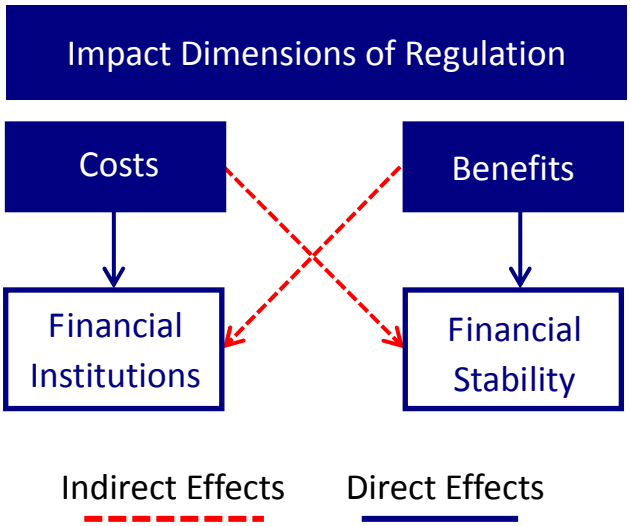
Besides precipitating *ad hoc* measures by central banks and governments around the world, the crisis was also the starting point for revising and improving the existing regulatory landscape of the financial system. The Basel III global initiative was endorsed by G-20 leaders at their summit in Seoul in November 2010. In addition to the amendments to the Capital Requirements Directive (usually referred to as CRD IV) suggested within the Basel III framework there are numerous other regulatory measures that have been proposed or are currently in preparation. The most important proposals regarding the regulation of the financial sector are analysed in this study.

Methodology

While the CRD amendments (CRD IV) have been subject to extensive quantitative impact assessments, there are, to the best of our knowledge, no comparable comprehensive assessments available for the specific regulatory proposals considered in our study. Nevertheless, the proposed concepts are not novel in essence, but represent recurrent themes extensively covered in the academic literature.

To evaluate the costs and benefits of the different regulatory proposals we analyse and summarise the relevant theoretical and empirical literature. The aim is to give an overview of research findings on the effects of regulation on the banking sector. The following figure shows the main dimensions of the effects of regulation.

Figure 1: Main impact dimensions of regulation



In the first instance there are the direct and expected effects of regulation: benefits to the financial system and costs to the financial sector. The costs of the regulatory initiatives discussed in this study are predominately, but not exclusively, incurred on financial institutions, whereas the expected benefits are mainly increases in financial stability. Furthermore, regulation can have indirect effects: Regulation may be partly beneficial for financial institutions, but also bears the potential to impair financial stability. The main focus of our study is the assessment of costs and benefits of the different regulatory measures on financial stability. In most cases the situation is complex with few available

data and therefore the quantification of the impacts is in most cases unfortunately not possible.[2]

In addition to the assessment of the literature we have posed questions (for questionnaire and results see Annex) to a panel of 77 German financial market experts. These are the same experts that are surveyed by ZEW on a monthly basis in order to obtain their expectations on financial markets and the economy. The data gathered by these additional questions annexed to the June 2011 survey complement the assessment of the considered regulatory proposals. The questionnaire focuses on topics for which an impact assessment based exclusively on the available literature appears to be insufficient. The responses give us a qualitative estimation of costs and benefits of specific measures as well as an assessment of the whole regulatory framework.

In Chapter 2 the analysis of costs and benefits is conducted for each specific regulatory measure. However, whether specific costs and benefits can be quantified or merely qualitatively assessed depends on the available literature for the respective measures. In most cases only a qualitative evaluation is possible, taking into account also the results of our survey. Chapter 2 is a comprehensive summary of existing evidence. All statements in Chapter 3 are derived from the analysis contained in Chapter 2.

In Chapter 3 the joint impact analysis is developed. We combine the effects of the individual regulatory measures to estimate an overall impact on financial stability. To give deeper insights into specific effects we, firstly, divide 'financial stability' into six objectives[3] and consider how the regulatory measures contribute to fulfilling these specific objectives. Secondly, we summarise the estimated effects on the six objectives regarding their combined impact on financial stability.[4]

The regulatory measures which are assessed in our study aim to reduce the likelihood and the seriousness of future financial crises. The benefits of reaching this aim are the avoided costs of future crises.[5] To give an impression of the economic costs of financial crises, the loss in real GDP that can be attributed to the recent global financial crisis is estimated below.

Costs of the Financial Crisis: Impact on GDP

The following Table 1 compares the IMF's GDP forecast for the year 2009 as of April 2009, i.e. in the midst of the crisis, with the forecasts made half a year before, in October 2008, when only the first signs of financial disruptions were visible.[6] The comparison shows that the derived expected costs for the year 2009 are a loss of about 4.3% of worldwide GDP ('expected loss 1'). The actual realised loss of GDP growth in 2009, compared to the forecasts as of October 2008, was a worldwide reduction in (expected) GDP of about 3.5% ('expected loss 2').

[2] Note that, given the availability of the necessary data, it could be possible to quantitatively link incurred costs to specific regulatory initiatives. The beneficial effects on stability, on the other hand, are in principal much more difficult to quantify.

[3] The six objectives constituting financial stability in our study are: (1) reduction of procyclicality, (2) reduction of misguided incentives, (3) creation of level playing fields, (4) internalisation of social costs, (5) increasing transparency, and (6) increasing consumer confidence.

[4] These impact assessments are done qualitatively using a scale from -2 (strong negative impact) to +2 (strong positive impact).

[5] For a broad overview of the costs of international financial crises of the last 25 years see Basel Committee on Banking Supervision (2010), section II.A.2.

[6] This approach is applied by Chandy et al. (2009).

Table 2: Costs measured in Real GDP Losses for the Year 2009

	IMF Forecast Real GDP Growth for 2009		Realised Real GDP Growth 2009	Expected Loss 1	Expected Loss 2
	As of 10/2008	As of 4/2009			
World	3.0%	-1.3%	-0.5%	-4.3%	-3.5%

Explanations: Expected Loss 1 = Changes of real GDP **forecasts** for the year 2009 between October 2008 and April 2009; Expected Loss 2 = Difference between **realised** 2009 real GDP growth and October 2008 forecast.

Sources: IMF 2008, IMF 2009a, IMF 2011, Chandy et al. (2009), own calculations.

In addition to this short-term loss, a comparison of the GDP projections of the IMF for the period 2009 until 2013 gives information on the expected medium-term losses. In October 2008 the IMF forecast an increase of 23.3% of world GDP for the whole period. Half a year later this forecast had been reduced to 15.4%, i.e. the expected medium-term loss was about 7.9% of worldwide GDP in this five-year period. This equals an average loss of 1.6% per year. In 2011, based on the then known GDP realisations of 2009 and 2010, the new projections until 2013 give an estimate of a worldwide GDP growth of 19.2% for the period 2009 to 2013 and therefore an expected medium-term loss of 4.1%. This equals an average loss of 0.83% per year. This means that worldwide GDP is forecast to be USD 2,544 billion less at the end of 2013 than expected in October 2008.[7] For emerging and developing countries the medium-term loss in GDP is expected to be much higher (-5.2%) than for advanced economies (-3.9%).

Table 3: Costs measured in Expected Real GDP Losses for the Period 2009 - 2013

	IMF Forecast Real GDP Growth for 2009 – 2013			Expected Loss 1	Expected Loss 2
	As of 10/2008	As of 4/2009	As of 4/2011		
World	+23.3%	+15.4%	+19.2%	-7.9%	-4.1%
Advanced economies	+10.9%	+4.5%	+7.0%	-6.4%	-3.9%
Emerging and developing economies	+38.6%	+28.0%	+33.4%	-10.6%	-5.2%

Explanations: Expected Loss 1: Changes of real GDP **projections** for the period 2009–13 from 10/2008 to 4/2009; Expected Loss 2: Difference between real GDP **projections** for the period 2009-13 from 10/2008 to 4/2011.

Sources: IMF 2008, IMF 2009a, IMF 2011, Chandy et al. (2009), own calculations.

The IMF originally projected a massive medium-term deterioration of worldwide public debt and fiscal balances; see IMF (2009b). Due to the better-than-expected development of GDP described above the current outlook on public finance also improved but there still remains a significant gap to the projections made at the beginning of the crisis: The current projections still assume a public deficit that is more than 3 percentage points higher than expected in October 2008.[8] As in most countries the direct fiscal costs of the financial crisis[9] are expected to be below 1% of GDP,[10] the bulk of the fiscal costs are therefore indirect costs due to lower GDP.

[7] The world GDP in 2008 was USD 62 054 billion (in current prices), see IMF World Economic Outlook database.

[8] See IMF (2008) and (2011). In IMF (2008), a public deficit of -2.4% of GDP had been forecast for the year 2013. In IMF (2011), the IMF forecasts -6.8% relative to GDP for 2012 and -4.4% for 2016, for the year 2013 this would mean a fiscal balance of about -5.8% (assuming a linear adjustment between the years 2012 and 2016).

[9] For example by equity injections and guarantees of the government or other public institutions.

[10] See Schildbach (2010) who concludes that the recent financial crisis *'may end up being one of the least costly on record'* based on expected loss in GDP growth due to the crisis which is assumed to be much lower than during past crises (e.g. in Japan 1992-2005, Finland 1991-94, or Norway 1987-93). But as these past crises were

2. ASSESSMENT OF INDIVIDUAL MEASURES

By assessing each measure individually for this study, this chapter primarily aspires to provide an overview of the most relevant considerations regarding each included measure. These considerations predominantly reflect views found in the academic literature. Available theoretical and empirical work will be considered. When appropriate, other sources such as industry reports, studies from consulting firms, as well as surveys – including the ZEW questionnaire for this study – will be included. However, the heterogeneity of the measures does not allow for a consistent approach. Costs and benefits of the measures included will be discussed. Considering the different dimensions of costs and benefits illustrated in Figure 1, the following assessments will concentrate on intended benefits (i.e. an increase in financial stability) as well as unintended 'costs' (i.e. a decrease in financial stability) of regulatory initiatives. Direct costs (i.e. costs incurred on banks) will be addressed if contained in the literature. In other words, whereas most assessments will be of a qualitative nature, some indications of quantitative impacts will be given when available. It should also be noted that for most discussed measures academic literature referring directly to the respective regulatory initiatives is not available. Impacts will therefore have to be inferred from available arguments and related empirical evidence if available.

2.1. Revision of the Capital Requirements Directive (CRD IV)

The complementing study 'CRD IV - Impact Assessment of the Different Measures within the Capital Requirements Directive'[11] gives a comprehensive description and analysis of the economic impacts of the CRD IV directive. In addition to the assessment of this study our survey amongst financial experts gives additional information on the costs and benefits.[12]

Our survey contains the question how the 'capital requirements according to Basel III' will affect the costs of banks, credit supply to companies and stability of the banking sector. 97% of the participants expect an increase of banks´ costs. This is fully consistent with the study which estimates a slight increase of costs. 69% of our participants expect a reduced credit supply to companies (at a given interest rate). Again this is compatible with the majority of academic research and with the study's results. As a benefit of the new capital requirements of Basel III 66% expect an improvement of the stability of the banking sector.

predominantly national this conclusion is incorrect: The absolute reduction in GDP due to the recent financial crisis is much higher than the loss in GDP during past national crises!

[11] PE 464.423, 2011; Clerc-Renaud, Neuberger, Reifner, Rissi.

[12] See Annex 1 for the details of the survey and the complete results.

2.2. Regulating Over the Counter (OTC) Derivatives

KEY FINDINGS

- Enhanced transparency helps regulators to correctly assess risks in the market and can prevent a drying up of liquidity due to mistrust between market participants.
- Central counterparty clearing facilitates multilateral netting and thereby leads to reduced credit risk exposure. Furthermore, CCPs' risk mitigation techniques can be expected to reduce the default probability of individual members and reduce the probability of market failure due to the default of a major market participant.
- Due to their systemic importance CCPs will have to be monitored cautiously by regulators to avoid threats to the stability of the financial system.
- CCP clearing will potentially lead to higher standardisation of derivative contracts.

The financial crisis has brought over-the-counter-derivatives (OTC derivatives) into the focus of regulatory attention. Although OTC derivatives did not cause the crisis, they do facilitate large speculative transactions and have the potential to create systemic risk. Although the market for OTC derivatives accounts for 90% of all traded derivatives,[13] there are currently no reporting obligations for these transactions. Neither political decision-makers nor regulatory agencies nor market participants have a clear picture of the interdependencies between the parties involved in the OTC derivatives markets. This renders it impossible to determine all trade relations or the parties' risk exposure. Due to the high interconnectedness between the dealers, a significant contagion risk arises in the market. These features explain how the use of OTC derivatives moved default losses in the mortgage market from one entity to another. The collapse of Lehman Brothers on 15 September 2008 and the public rescue of AIG the following day showed the severe implications of OTC derivatives markets for financial stability. In this way, the financial crisis has demonstrated that in stressed financial circumstances the lack of traceability of interdependencies and risk positions due to OTC trades increases uncertainty and liquidity risks for participants and, consequently, poses risks to financial stability. The regulation on derivative transactions, central counterparties and trade repositories lays out the conditions for mitigating these risks and improving the transparency of derivative contracts.

G-20 leaders agreed in September 2009 that all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties (CCPs) by the end of 2012. Furthermore, in order to increase transparency, OTC derivative contracts should be reported to trade repositories. The European Commission proposed respectively a regulation (COM(2010)484) which is often referred to as 'EMIR' (European Market Infrastructure Regulation).[14] Annex 3 gives an overview of the OTC derivatives market.

[13] According to the BIS; for an overview of size and growth in OTC derivatives and a breakdown of different asset classes please refer to Annex 3.

[14] See European Commission (2010a).

2.2.1. Benefits of reporting to trade repositories

An obligatory report on all OTC transactions to trade repositories (TRs) allows for a central collection, storage and dissemination of information in a consistent fashion enabling regulators to assess the concentration of risk-taking activities in the market and the interconnectedness of institutions, in particular in times of financial stress when regulators have to act appropriately. **Increased transparency** can also lead to **enhanced market liquidity** since it reduces market participants' mistrust towards their counterparties. Besides providing a complete picture of the market to authorities, market participants and the public, TRs would enable authorities to track single contracts and they would most likely not need significant additional resources to deal with contracts not captured by TRs.

2.2.2. Costs of reporting to trade repositories for financial institutions

Participants will have to bear **reporting** and **connection costs** as well as **fees**. From experience with existing TR services, the fees - although not published - do not appear to be particularly high.[15] On top of connection costs to the new TRs, the cost of **hiring additional staff** to handle the reporting process and to adapt the systems arises. Since the overall impact on the costs of reporting of transactions to TRs is relatively limited, benefits can clearly be expected to outweigh the costs to banks.[16]

2.2.3. Benefits of central counterparty clearing

There is consensus that the shift of OTC derivatives transactions to central clearing can help to **mitigate systemic risk**.[17] Many benefits directly stem from the way a central counterparty (CCP) works: A CCP interposes itself in every transaction between two parties and becomes the buyer to every seller and the seller to every buyer. The contractual relationship between the two parties is replaced by contracts with the CCP – a process called novation. The counterparty credit risk of the market participants is replaced by the credit risk of the CCP. This way, CCP clearing of OTC derivatives not only **enhances financial system stability** but is also associated with benefits pertaining directly to financial institutions[18] by **improving counterparty credit risk management**, allowing **multilateral netting**, reducing uncertainty about **participants' exposures**, and **increasing transparency** of market activity.[19]

Generally market participants will find trading via CCPs attractive if gains from multilateral netting – which is possible between multiple parties, but only for a certain class of derivatives – outweigh the losses resulting from the original bilateral netting across various derivatives classes with pairs of counterparties.[20] Multilateral netting of contracts reduces the settlement risk on delivery date. Trading via CCPs therefore facilitates counterparty credit risk mitigation. Besides, multilateral netting **potentially increases liquidity** in the OTC derivatives market since it allows the involved parties to increase their trading activities on a given proportion of its balance sheet. Furthermore, liquidity is secured by regular margin calls. In case of infrequent valuation of exposures and exchange of

[15] Currently there exist only two trade repositories: one for credit derivatives (the DTCC's Warehouse Trust) and one for interest rate derivatives (TriOptima's Interest Rate Trade Reporting Repository, IR TRR), the latter was launched in 2010.

[16] See European Commission (2010b).

[17] See e.g. Kiff et al. (2010).

[18] The benefits described are a summary of the results from Bliss & Papathanassiou (2006), Culp (2010) and Ripatti (2004).

[19] See Cecchetti et al. (2009) and Kiff et al. (2010).

[20] See Duffie and Zhu (2009).

collateral, parties can be put under pressure in situations of high market volatility and the resulting large margin calls. Enhanced operational processes associated with CCP clearing also lead to **efficiency gains**. These gains arise from reduced counterparty credit evaluations and on-going credit exposure monitoring, since the parties are no longer prone to a multitude of bilateral trading agreements and associated credit risks but only to the credit risk of the CCP. CCPs further reduce operational risks[21] since they establish standard procedures for marking contract prices to market and thus avoid disputes about collateral valuation. Among the most important arguments in favour of CCPs are the **possible default resolutions**: CCP clearing not only allows regulatory capital savings – a default fund also permits mutualisation of losses among the clearing members.

All exhibited arguments combined show that CCPs can be expected to reduce the default probability of individual members and reduce the probability of market failure due to the default of a major market participant. Therefore they increase financial stability.

2.2.4. General costs of central counterparty clearing

A potential threat to systemic stability can arise from the fact that as a counterparty to every position the CCP bears **credit risk** in the event that one of its counterparties fails. Similarly, financial institutions bear the credit risk that their CCP might fail. There is criticism that credit risk is simply moved from large financial institutions, which might be too-big-to-fail, to CCPs which will be of systemic importance by virtue of their risk-mitigation role.[22] Being aware of their **systemic importance** CCPs themselves may even begin to view their activities as protected by federal safety nets, which might induce moral hazard. These threats will be averted by close supervision and regulation requiring sound risk management mechanisms by CCPs.[23] One of these risk management mechanisms concerns appropriate margin arrangements which can, again, threaten financial stability since lax margin requirements can lead to **misguided incentives** on the side of participants as well as for CCPs themselves: Low margin levels can induce participants to use CCPs to externalise risk, i.e. they may not bear all the cost/losses from trading and may trade less prudently, thus increasing the overall level of risk in the market. CCPs will be restrained by regulation[24] from competing on margins (also called race to the bottom) since this behaviour would weaken CCPs' risk mitigation mechanisms. However, it has been found that the major existing CCPs have demonstrated **remarkable skill and conservatism in managing risk**.[25] It rather seems that CCPs compete on prudential risk management and financial integrity instead of attracting OTC-cleared derivatives volume.

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[21] The Basel Committee on Banking Supervision defines operational risk as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.

[22] This and the following concerns were raised by Ripatti (2004) and Culp (2010).

[23] According to the regulatory proposal by the European Commission, CCPs will mitigate their counterparty credit risk exposure through a number of reinforcing mechanisms, including admission criteria for clearing participants, risk-management tools (such as collateralisation, i.e. the initial margin and clearing of each member's margin account on a daily basis), and loss mutualisation (usually through a default fund). These mechanisms are jointly known as the "risk (default) waterfall" of the CCP.

[24] According to the Regulation on OTC derivatives, by the European Commission, Chapter 3 Article 39, the margins collected "*shall be sufficient to cover losses that result from at least 99 per cent of the exposures movements over an appropriate time horizon and they shall ensure that a CCP fully collateralises its exposures with all its clearing members*[…]." Furthermore "*a CCP shall adopt models and parameters in setting its margin requirements that capture the risk characteristics of the products cleared and take into account the interval between margin collections, market liquidity and the possibility of changes over the duration of the transaction. The models and parameters shall be validated by the competent authority and subject to a joint opinion of the college* […]."

[25] See Culp (2010).

The benefits from multilateral netting and counterparty credit risk management in particular depend on a critical mass of contracts trading via CCPs.[26] To induce this critical mass there will be **stricter collateral requirements** for derivatives further traded OTC[27] according to the proposed regulation on derivatives as well as **stricter capital requirements** according to the Basel III framework. These proposals encourage banks to use CCPs for OTC derivatives contracts.

2.2.5. Costs of central counterparty clearing for financial institutions

Moving a critical mass of OTC derivatives to CCPs by requiring CCP clearing for eligible contracts is necessary in order to reap the benefits associated with systemic risk reduction. However, this process also entails costs, particularly for the involved participants: Since OTC contracts are currently under-collateralised, dealers will have to provide **significantly higher amounts of collateral** when required to move eligible contracts to CCP clearing.[28] Potentially stricter margin requirements (with respect to size and frequency) can also lead to higher costs on the part of participants:[29] Margin and collateral can be posted in interest-bearing assets such that the main cost of margin and collateral is the opportunity cost of holding a higher fraction of assets earning low interest rates than otherwise optimal. Concerning calculation frequency, CCP margins are oftentimes calculated on a higher frequency compared to bilateral trades. On the one hand more frequent and often smaller margin flows **avoid participants' exposure to high risks of liquidity shocks** of the kind seen in 2008. On the other hand CCP clearing poses **higher demands towards operational management**.

A disadvantage of CCP clearing is its **need for standardisation** in the clearing process. When forced to use standardised OTC derivatives, participants might be unable to hedge sufficiently which might lead them to engage in a bilaterally cleared customised OTC transaction in the end. However, the European Commission decided to focus on contract standardisation (i.e. standard legal relationships, confirmation agreements, documentation, market conventions on event handling) and process standardisation while not *per se* impacting product variety. This approach is compatible with the ability of market participants to hedge specific risks while permitting the adoption of CCPs. It should be kept in mind that the advantage of allowing bespoke features in contracts with low levels of standardisation comes at the cost of a low automation of processes, which in turn increases operational risk. For non-standard or complex OTC derivatives, CCP risk managers are likely to be at a serious informational disadvantage to clearing members.[30] In order to

[26] See Singh (2010).

[27] Due to the lack of liquidity or to bespoke features some instruments will remain bilaterally traded, see Hull (2010). In order to determine which contracts will be eligible for CCP clearing the regulatory proposal considers a bottom-up approach whereby a CCP decides to clear certain contracts and has to seek authorisation by its competent authority, which is then obliged to inform ESMA. The regulation also considers a top-down approach according to which ESMA and the European Systemic Risk Board, determine which contracts should be subject to the clearing obligation.

[28] According to the ISDA Margin Survey (2011) about $1.1 trillion (30%) of exposures in OTC derivatives remain uncollateralised. I.e. the amount of collateral is, on average, too low compared to the level of counterparty credit risk. However, the actual level of collateralisation of exposures may be even lower, as an ECB study ("Credit Default Swaps and Counterparty Risk", August 2009; p. 48-50) indicates. This study estimates the level of collateralisation in the CDS market to amount to only 44%.

[29] For a more detailed argumentation please refer to Culp (2010).

[30] See Pirrong (2009).

ensure that a sound risk management preserves the CCP's financial integrity, the contracts eligible for central clearing should be chosen with care.[31]

2.2.6. Costs of OTC derivatives regulation on other parties

Furthermore, there is the impact of requiring the **reporting** of all OTC transactions to trade repositories and the trading of eligible contracts via CCPs on stakeholders and issues besides financial institutions.[32] Important groups and issues which may be affected are retail investors and SMEs, society in general and competitiveness. For retail investors or for SMEs a direct impact is not expected. While retail investors do not have access to the OTC derivatives market, **SMEs are exempted** from the regulatory proposals as long as their positions in OTC derivatives do not exceed certain thresholds. However, an **indirect impact due to higher cost of hedging and of capital** is likely. Concerning the overall social impact, the regulation's potential to decrease systemic risk can reduce the effect of future financial crises on the real economy and thereby also **reduce the social costs** of these crises (e.g. unemployment).

A more critical aspect is the potential impact on EU competitiveness. Given the global nature of the OTC derivatives market, an internationally coordinated approach is crucial. Several members of the G-20 outside the EU are already pursuing comparable legislative initiatives. A prime example is the US. The proposal of the European Commission is **consistent** with the recently adopted US legislation on OTC derivatives, the so-called Dodd-Frank Act. Particular attention should be paid to countries that are not part of the G-20, as they did not commit on the introduction of CCPs and TRs. These countries could try to attract OTC derivatives business by applying laxer rules. This could have a negative impact on EU competitiveness and lead to **regulatory arbitrage**.

2.2.7. Conclusion

All in all, it is considered probable that the net benefit of clearing OTC derivatives via CCPs will be positive for G14 members (i.e. the benefits will exceed the additional costs), as long as non-financial institutions not exceeding a certain threshold of OTC derivative transactions are exempted. This view is also shared by financial market experts surveyed by ZEW.[33] While roughly 40% of the experts expect costs for banks to rise, almost half of the participants foresee no change in costs. A small fraction (14%) can even imagine that costs will decrease if OTC derivatives are cleared via CCPs. This potential increase in costs is however largely offset by the benefits financial markets experts anticipate to arise from the suggested measures. For CCP clearing 65% of analysts expect an improvement of the stability of the banking sector. The effect for reporting to trade repositories is almost equally strong, with 60% of analysts seeing potential for improvement.

[31] In order to determine which contracts will be eligible for CCP clearing the regulatory proposal considers a bottom-up approach whereby a CCP decides to clear certain contracts and has to seek authorisation by its competent authority, which is then obliged to inform ESMA. The regulation also considers a top-down approach according to which ESMA and the European Systemic Risk Board, determine which contracts should be subject to the clearing obligation.

[32] See European Commission (2010b).

[33] For a description of results and the questionnaire please refer to Annex 1.

2.3. Regulating short sales and credit default swaps (CDS)

KEY FINDINGS

- Circuit breakers can interrupt price spirals without impairing market quality.
- Empirical evidence suggests that temporary bans on short selling deteriorate market liquidity.
- A ban on naked CDS has detrimental effects on liquidity and the price discovery process of credit risk.
- Prohibiting uncovered short sales will negatively impact market liquidity and price discovery.
- A strict settlement regime for naked short sales can reduce settlement failures, but may impair efficient price discovery.
- A disclosure regime for short positions can reduce market abuse without significantly affecting liquidity and price discovery.
- Harmonising short selling and CDS trading regulation will reduce compliance costs and regulatory arbitrage opportunities.

The 2007/2009 financial crisis has increased/reinforced concerns of market participants and regulators about short selling. Short selling purportedly increases systemic risk, disrupts orderly markets and encourages market abuse. For this reason, some Member States have unilaterally adopted measures against short selling in response to the financial crisis in 2008 and the Greek bond crisis in 2010. The European Commission's proposal[34] COM(2010)482 for a regulation on short selling and certain aspects of credit default swaps (CDS) intends to harmonise regulation within the EU. It contains transparency requirements, restrictions on naked short sales, and endows national regulators as well as the newly created European Securities and Markets Authority (ESMA) with a set of powers. In the following, the possible impact of the proposed measures will be discussed.

2.3.1. General costs and benefits of short selling and CDS

When Lehman Brothers filed for bankruptcy and AIG faced serious difficulties during September 2008, short sellers were accused of having driven down the share prices of these and other financial institutions. Market participants and regulators feared that contagion and negative spill-over effects could lead to the collapse of the entire financial system. One reason for blaming short selling is its propensity to elicit herding behaviour. There is empirical evidence for the **connection between disorderly markets and short selling**.[35] It is however widely agreed upon that short selling does not cause crashes but has the potential to **increase their magnitude**.

But the theoretical literature also indicates that short selling **fosters market efficiency**. More precisely, it helps to mitigate overpricing and contributes to a faster transmission of

[34] See European Commission (2010f).

[35] See e.g. Bris et al. (2007).

information into market prices.[36] The faster market prices react to new information the more informationally efficient the market is said to be. Empirical findings confirm these theoretical reflections. While some studies seem to confirm the overpricing theory, a broader number of studies shed light on the benefits of informational efficiency.

The main benefit of credit default swaps is that it allows investors to insure (hedge) default risks of sovereign or corporate debt. The fact that CDS, in contrast to common insurance, are traded in a market creates a second important benefit. CDS spreads are indicative of a fair pricing, i.e. a market pricing, of debt. However, there is concern that speculators can destabilise bond markets by betting on the default of the underlying. If a CDS is excessively bought for the purpose of speculation (not for hedging) it is feared that an increase in CDS spreads could also increase bond spreads. This would lead to an impairment of sovereign or corporate funding conditions. Higher funding or refinancing costs may lead to an increased probability of default.

2.3.2. Impact of circuit breakers and temporary bans

Constraining short selling **limits risk-sharing** and trades based on private information, thereby **reducing the allocation and informational efficiency** of the market.[37] If prices fail to be informative and the uncertainty perceived by uninformed investors increases, discrete price drops accompanied by a sharp **rise in volatility** may occur. Furthermore, restrictions on short selling are thought to **inhibit downward price discovery**.[38]

The Commission's proposal contains a system of circuit breakers and temporary short selling bans to deal with the negative impact of short selling on markets. The circuit breaker rule gives national competent authorities the power to prohibit short sales of a financial instrument whose price has fallen below a specified threshold until the end of the next trading day. The aim of this is to achieve a slow-down in a chaotic market environment, thereby giving rational investors the time to cross-check their information basis and ensure a rational decision and stop herding. The **circuit breaker does not harm market efficiency** due to its temporary nature. However, there is room for concern that temporary stops will not suffice when a serious shock hits the market. A downward spiral in share prices cannot be stopped by a circuit breaker when problems are not due to temporary uncertainty but arise from material weaknesses in accounting, risk management or corporate governance. Such persisting issues mirrored in the securities' ratings can force entities holding the securities to sell because of deterioration in their risk rating.

The Commission's proposal would grant national regulators new powers to temporarily ban short selling or CDS trading in exceptional situations. Bans could be more efficient than circuit breakers in preventing negative price spirals extending over a long period of time as they could be imposed for several months. However, empirical evidence suggests that the **negative effects of a ban** lasting several months will be greater than those of a pure circuit breaker regulation. A **significant deterioration of market liquidity** was found to result from the temporary short selling bans imposed in September 2008.[39] Furthermore,

[36] See Miller (1977) and Diamond and Verrechia (1987).

[37] Limiting short sales driven by risk-sharing shifts the demand for the asset upwards. Limiting short sales driven by private information increases the uncertainty about the asset as perceived by less informed investors, which reduces their demand for the asset.

[38] See Bris et al. (2007).

[39] See e.g. Clifton and Snape (2008), whose examinations on the London Stock Exchange (LSE) showed bid ask spreads 150% wider for banned financial stocks than for spreads in the control group. Moreover market depth deteriorated 59% for banned stocks but only 43% for unregulated stocks. The trading volume fell by 10% whereas the control group showed an increase of 50%. Also see Boehmer et al. (2008), who provide evidence for the NYSE.

temporary bans are likely to **increase compliance costs** for financial institutions. These additional costs are however expected to be relatively small. The Financial Service Authority (FSA) has determined costs for institutions in the UK in 2008 and found one-off compliance costs to equal GBP 40 000 and on-going costs to be GBP 6 500 per firm per month.[40]

2.3.3. Impact of a ban on naked CDS

A further discussed measure is a ban on naked CDS regarding sovereign bonds. If the default probability of a sovereign bond increases or a default occurs, parties holding CDS will either profit from the increasing value of their position or the payment of the principal amount. Since CDS prices reflect the default risk of the underlying bond, an increase in the CDS premium leads to **higher risk premiums** for future issues of the underlying and a **decline in prices** on the bond markets. Therefore, regulators and governments are concerned about the incentives of CDS traders. Possibly they speculate on default or at least try to increase the return of a bond. However, this coherence is not reflected in empirical research. A study on sovereign bonds conducted by the European Commission provides **no conclusive evidence for a link** between developments on the CDS market and higher funding costs for states.[41] The same conclusion can be conjured from studies on corporate CDS. Credit spreads for average firms are not affected by the existence of tradable CDS. For opaque and risky firms, however, CDS spreads do exhibit an increasing effect on funding costs.[42] This may be due to information inferred from CDS spreads about the default probability of opaque and risky firms. Empirical evidence suggests that corporate CDS are more liquid than corporate bonds and can therefore react faster to relevant information.[43] Especially after the recent financial crisis has the corporate CDS market strengthened its role in the price discovery process of credit.[44]

Prohibiting naked CDS transactions, as proposed, would have **detrimental effects on the liquidity** as the market is left only to hedgers. Valuing credit risks will become more difficult. It should also be considered that naked CDS transactions are at times also conducted without a speculative purpose. Proxy hedging, for example, is a technique were positions of price- or rate-correlated financial instruments are used for hedging when a direct hedge for a specific risk is not available. Furthermore, it could be possible that a ban on naked CDS may motivate traders to **short sell sovereign bonds using options or futures**.

Although the theoretical and empirical literature indicates that the costs of a ban of naked CDS outweigh its benefits, the respondents to the ZEW survey perceive this differently. 65% feel that a ban on naked CDS and uncovered short sales would improve financial stability, while only 13% believe a ban would be detrimental to stability.

2.3.4. Impact of a ban on uncovered short sales

Normally the short seller borrows the financial instruments intended for the short sale from a lender in exchange for a fee. However, in some cases market participants execute so called uncovered short sales without having borrowed the financial instruments first. For this reason, the availability of the stocks for repurchase is not ensured. The rationale

[40] See Financial Services Authority (2009).

[41] See Criado et al. (2010) for a study on the European market.

[42] See e.g. Ashcraft and Santos (2009)

[43] See Blanco et al. (2003).

[44] See Alexopoulou et al. (2009).

behind uncovered short selling is that traders can react fast to new information and may command larger positions; they do not have to make time-consuming arrangements to borrow the corresponding asset first. On the other hand uncovered short selling is suspected to manipulate market prices downwards as explained above. Also, traders face higher risks if there is a swing in market mood and prices increase or if a short squeeze occurs. In such circumstances settlement failures may lead to disorderly markets. An example from the recent past is the extreme increase of Volkswagen's share price in connection with Porsche's failed takeover attempt in 2008.

The proposal suggests a ban on uncovered short sales and strict penalties in order to reduce settlement failures. In particular, short sellers must at least agree to a borrowing arrangement before the short sale is carried out. But it is doubtful whether a ban on uncovered short sales would be the most efficient solution. At the time of the trade, there are **practical difficulties** to ascertain whether the short seller intends to cover or not. Furthermore, there might be **detrimental effects on liquidity and efficient price discovery**. In the literature, it is argued that laws prohibiting market manipulation combined with strict penalties for non-settlement might be the better way to tackle market abuse and disorderly markets caused by settlement failures.[45] However, in practice US markets experienced a significant reduction in failures to deliver after the introduction of a stricter settlement regime for naked short sales.[46]

2.3.5. Impact of increasing transparency

Another pressing issue is the lack of transparency which may encourage market abuse and contribute to disorderly markets. Some empirical evidence does allow for such concern. A negative relationship between increased short selling activity prior to earnings announcements and the post announcement change in share price has been empirically established.[47] This seems to imply that short traders are better informed which may be interpreted as evidence for insider dealing. The Commission's proposal offers a set of measures to tackle the transparency deficiencies and its consequences, e.g. flagging[48] of short positions by trading venues and a disclosure regime for short positions above certain thresholds. A combination of flagging and disclosure thresholds should thus give regulators a better overview of short selling activity. A key problem, however, is the **extent of disclosure**, in particular whether short selling should be disclosed only to the regulator or to the public as well, and what exemptions should be granted. Disclosing information to the market **reduces asymmetrical information** between informed and non-informed traders. Hence it is argued that greater transparency contributes to more efficient price discovery. However, as explained in the European Commission's Impact Assessment[49], market participants have expressed the concern that **liquidity may suffer** if non-informed traders started to use short selling strategies and perform herding. Consequently, informed traders might choose to limit their short selling activities in order to stay below the publication threshold. As a result, liquidity might decrease while the probability of herding increases. However, according to the Impact Assessment the proposal provides a relatively high threshold for public disclosure, so that a drastic decrease of liquidity should be mitigated. The liquidity constraining effects of the transparency requirements are furthermore

[45] See Emilios Avgouleas (2010).

[46] See Office of Economic Analysis (2009).

[47] See Christophe et al. (2000).

[48] Flagging means that trading venues that have shares admitted to trading shall implement procedures to mark orders as short or long and are expected to publish the corresponding statistics at the end of each trading day.

[49] See European Commission (2010l).

mitigated by the exemption of market makers from these requirements. Unfortunately, exemptions may open new loopholes for regulatory arbitrage. Financial institutions might use exemptions to circumvent transparency requirements by **disguising their activities as market making**. Overall, the impact of required reporting of short sale and CDS positions should be positive. This notion is supported by the results of the ZEW survey, where 76% believe that mandatory disclosure of positions would improve financial stability.

According to the European Commission's Impact Assessment, market participants expressed concerns about the **compliance costs** of the measurement package. DG Market estimates **one-off IT costs**, **on-going IT costs** and **on-going costs for the disclosure** of short positions in shares. They found EU-wide one-off costs to amount to EUR 137 million, ongoing IT costs of about EUR 13.7 million per year and disclosure costs of approximately EUR 2.1 million per year.[50]

2.3.6. Impact of regulatory harmonisation efforts

There is currently a significant divergence in regulatory measures regarding short selling within the EU Member States. The restrictions imposed in September 2008 range from temporary emergency bans in countries such as France, Germany or the UK, to partial bans on naked short selling for financial institutions, for instance in Belgium, France or Luxembourg and to no restrictions at all as practiced in Finland and Sweden. Also, the inclusion of derivatives or the definition of exemptions from restrictions (e.g. for market makers) diverge. Therefore, financial institutions face a variety of legal constraints that cause **high compliance and tracking costs** as different IT systems and procedures have to be set up. Moreover, the fragmentation causes **legal uncertainty** which has a detrimental effect on the efficiency of markets.[51] A heterogeneous regulatory environment allows financial institutions to actively shift business into less regulated Member States to avoid regulation. This practice may increase profits but is harmful to economic stability. Therefore, the Commission's proposal on short selling and CDS is an improvement of the current status in terms of compliance costs and regulatory arbitrage, because it introduces common powers to competent authorities and gives ESMA a central coordination function.

[50] Disclosure costs are calculated by considering labour costs for managers to file disclosures (European Commission, 2010l).

[51] See EFAMA (2009).

2.4. Regulating Credit Rating Agencies (CRA)

KEY FINDINGS

- Reducing references to credit ratings will be beneficial to stability if alternative credit assessments are risk-sensitive and robust.
- During a moderate business cycle higher frequency updates of credit ratings can lead to recurrent and costly transactions by investors; in times of crises the smoothing of ratings can induce cliff effects.
- A European CRA is likely to encounter difficulties with regard to reputational or credibility aspects.
- More competition in the CRA industry increases incentives of rating-shopping when the issuers of credit pay for ratings.
- The publication of predefined measures of rating accuracy as well as rating failures will foster competition between CRAs.
- Some empirical evidence exists of CRA conflicts of interest due to the "issuers-pay" remuneration model. A reliable alternative model is not apparent, however.
- Making CRAs liable for their ratings can increase their discipline and due diligence. It is however likely to increase reliance on ratings and will be difficult to enforce from a practical perspective.

The European Commission is currently working on strengthening the regulatory framework for credit rating agencies (CRAs). The regulatory measures to be brought forward by the European Commission will aspire to complement Regulation (EC) No 1060/2009 on credit rating agencies. More specifically, issues not satisfactorily addressed within the existing framework and thus part of current considerations include:[52] (1) the risk of overreliance on CRAs, (2) the transparency and quality of sovereign debt credit ratings in the EU, (3) the lack of competition in the credit rating agencies sector, (4) a civil liability regime for CRAs, as well as (5) the reduction of conflicts of interests due to the 'issuers-pay' model. The consultation phase during which all stakeholders were invited to submit their views and concerns, ended on 7 January 2011. A concrete proposal by the European Commission on the further regulation of credit rating agencies has yet to be published. The most important issues regarding objectives and possible regulatory measures are contained in the Public Consultation Document[53] released by the European Commission. Because a concrete proposal to regulate CRAs is still lacking and there is little to no empirical evidence in the academic literature indicating the potential impact of suggested measures, this sub-chapter will be predominantly argumentative.

[52] See European Commission (2010c).

[53] See European Commission (2010c).

2.4.1. Usefulness of Credit Rating Agencies

Recent discussion in the media and in politics has been rather critical of the role of credit rating agencies in the 2007-2009 financial crisis. The potential usefulness of CRAs for the economy has thereby largely been ignored. In theory, ratings by CRAs provide an **independent assessment** of the ability and willingness (in the case of sovereign debt) of issuers to meet their debt obligations. Three distinct services are potentially provided[54]: (1) an information service which reduces information costs, thereby facilitating a broader access to financial markets and providing extra liquidity; (2) a monitoring service, which can be perceived as an implicit contract between the issuer and the CRA with an implicit promise by the issuer to undertake actions in order to avoid the possible corrosion of its credit standing; and (3) a certification service, where CRAs certify the quality (i.e. investment grade or high yield grade) of an asset. Event studies conducted by the IMF find that while CRAs do provide information and certification services, there is no evidence for an effective provision of a monitoring service by CRAs.[55] In spite of the important role credit rating agencies fulfil for the proper workings of financial markets, there are several issues hampering its potential usefulness. The most important issues, which are also considered for the Commission's legislative proposal, will be discussed in the following.

2.4.2. Overreliance on ratings

The on-going European sovereign debt crisis has indicated that substantial **knock-on and spillover effects** can be precipitated by credit ratings. A recent study by Arezki, Candelon and Sy provides empirical evidence that a rating downgrade of one country can spill over to other countries and international financial markets.[56] One of the proposed explanations for such significant spillover is stipulated to be an extensive reliance on credit ratings. Reliance on ratings has increased continuously in the past and has in a sense been institutionalised through an abundance of explicit references to them: investors require that their fixed income products are rated; mutual funds, pension funds and insurance companies often explicitly restrict their investments to products with a certain minimum rating[57]; central banks require assets to have a predefined minimum rating in order to be eligible as collateral; references to ratings are furthermore widespread in regulations for the banking sector. Reducing references to credit ratings consequently contributes to financial stability through a reduction of forced simultaneous actions in response to credit rating announcements. Alternatives to the rating by a CRA are e.g. market-based credit quality indicators such as the credit default swap spread. Fostering due diligence by requiring the employment of internal models for assessing default risks is also conceivable. Especially for highly rated assets, investors tend to **over-rely on ratings**.[58] An apparent starting point for a reduction of references seems to be regulation itself. The effect is likely to be considerable, as a survey by the Joint Forum[59] finds that the most common use of credit

[54] See Boot et al. (2006) and IMF (2010b).

[55] In order to test for the information service, reactions of CDS spreads to credit warning announcements were studied. Statistically significant CDS spread widening after a downgrade below the investment grade threshold on the other hand is indicative of the existence of the certification services (see IMF, 2010b).

[56] See Arezki et al. (2011).

[57] See SEC (2003).

[58] This was e.g. observed for mortgage-backed securities, whose inaccurate ratings played an important role in the recent financial crisis. Evidence suggests that for AAA tranches investors only considered information published by rating agenciesratings, whereas for tranches below AAA proprietary information was seemingly also taken into account (see Adelino, 2009).

[59] The Joint Forum was established in 1996 and comprises an equal number of senior bank, insurance and securities supervisors representing each supervisory constituency.

ratings is for regulatory capital.[60] A decrease in rating-reliance will conceivably also have the positive side-effect of **creating higher incentives** for accurate ratings as reputation will become an increasingly important asset for CRAs. Instead of regulatory compulsion, credibility should become the primary reason for rating reliance. Utmost caution should however be taken when replacing references to ratings. Risk-sensitivity and robustness of all alternatives need to be considered. It should also be taken into account that smaller and less sophisticated investors may not have the resources and know-how to conduct internal credit quality assessments to a satisfactory extent. These concerns are, however, not shared by many respondents to the ZEW survey: A small majority (51%) think that the usage of internal risk models together with credit default assessments by CRAs could improve financial stability. 45% of respondents feel that such models would have no impact, while 1% and 3% believe it would lead to a decline or a large decline in stability respectively.

2.4.3. Rating quality and competition

Assessing the quality or accuracy of a rating is not an easy task.[61] Part of the problem is that a specific rating does not directly correspond to a definite default probability, nor is it intended that default rates for a given rating are maintained through time. Ratings rather strive for stability. This is achieved by rating “through-the-cycle” instead of at a “point-in-time”. Ratings are thus supposed to persist throughout the business cycle although average default probabilities surely increase during a downturn. The rationale behind the usage of the “through-the-cycle” method is to avoid frequent changes to ratings which could trigger recurrent and costly transactions by investors.[62] The smoothing[63] of ratings may, however, induce so-called 'cliff-effects', which are abrupt and big changes in ratings **evoking procyclical behaviour**. As painfully confirmed by recent crises, such behaviour can be harmful and its trigger should be regarded as a rating failure. In this context: while it may be difficult to assert the accuracy of a rating, rating failures can easily be identified by large downgrades (three or more notches).[64] In the recent financial crisis, rating failures for sovereign and corporate debt have increased sharply, with many of the ratings subjected to extensive downgrades being in investment-grade categories.[65] It seems that while ratings are smoothed to remain stable throughout a moderate business cycle, such smoothing is detrimental to stability in the wake of sizeable turbulences in financial markets.

Given the experience that rating failures rise in times of crises: do CRAs have incentives to provide accurate ratings in general? Theoretically, the right incentives are provided by reputational concerns. The dwindling reputation of a CRA is penalised by a loss of confidence of market participants. Lacking confidence in the ratings of a specific agency will, in theory, make them obsolete. Problems however arise when competition between CRAs is lacking and there exists, as indicated above, an institutionalised reliance on credit ratings. Although there are currently more than 70 credit rating agencies active worldwide[66], competition between them seems to be very limited. The 'big three' rating

[60] See Joint Forum (2009).

[61] See e.g. Sobehart et al. (2000), Engelmann et al. (2003) and S&P (2010) for some common but controversial methods for testing rating accuracy.

[62] See Cantor and Mann (2003).

[63] In addition to the smoothing effect induced by rating “through-the-cycle”, CRAs apply smoothing rules which further contribute to the persistence of ratings during the business cycle (see Cantor and Mann, 2007).

[64] See e.g. Bhatia (2002).

[65] See IMF (2010b).

[66] See IMF (2010b) for a list.

agencies, namely Standard and Poor's, Moody's and Fitch, account for a great majority of the industry's market share. Barriers to market entry are the high fixed costs of obtaining relevant information as well as reputation, which accrues over time. Thus, the proposal to support the build-up of CRAs on a national or European level could possibly overcome the fixed cost barrier, but would encounter difficulties with regard to reputational or credibility aspects. Indeed, a members-poll by the CFA Institute finds that 60% of respondents feel that credit ratings from national credit rating agencies are not valid and not useful for making investment decisions.[67] The respondents to the ZEW survey are not as pessimistic. Here 52% of responding experts feel that the creation of a European rating agency would improve or largely improve financial stability, while slightly less than half of respondents (47%) believe that a European CRA would have no impact on stability. In the context of the 'issuers-pay' model, which will be discussed below, it is furthermore questionable if more competition between CRAs would have a beneficial effect on rating quality. Because issuers of debt generally pay for their ratings, more competition can lead them to 'shop' for the rating most favourable to them, i.e. the highest rating. Empirical evidence suggests that more competition has previously led to overall higher ratings and lower rating quality.[68] Regulation encouraging competition in the rating industry should therefore be combined with efforts to prevent rating-shopping. Furthermore, to ensure fruitful competition between CRAs, the publication of predefined measures of rating accuracy as well as rating failures should be required. The most accurate, not the most favourable rating should be decisive for competition.

2.4.4. Remuneration models

The 'issuers-pay' remuneration scheme and the incentives such a scheme possibly conjures have been the subject of much unease in the recent past. From a theoretical perspective the business model of a rating agency is inextricably tied to its reputation of providing accurate ratings for issued corporate and sovereign debt.[69] Only if taken seriously by investors will there be any value attached to a rating. In theory this holds regardless of who factually pays for the rating. Historically, until the 1970s debt ratings were paid for by investors, who purchased reports from the CRAs containing these ratings. The free-riding problem brought about by the photocopier and a rising demand by issuers for a debt certification service were the principle reasons for the shift to the issuers-pay model now dominating the industry.[70] In the mid-1970s, however, increasing references to ratings appeared in rules and regulation.[71] The issuers-pay model in combination with the reference-induced reliance on credit ratings and limited competition created, to a certain extent, a guaranteed market for CRAs. This diluted the importance of reputation for the business model of rating agencies. In order to increase its market share, a CRA may be inclined to award higher ratings to paying issuers. They in turn may be inclined to "shop" for the most favourable rating. In the run-up to the recent financial crisis, ratings of mortgage-backed securities did become less conservative.[72] This can possibly be regarded as evidence that conflicts of interest of CRAs did contribute to the development of the financial crisis.[73] A simple and fast solution to the problem is not apparent. A return to an

[67] See CFA (2009).

[68] See e.g. Becker and Milbourn (2010) and Bongaerts et al. (2009).

[69] See e.g. Partnoy (1999).

[70] See White (2002) and Cantor and Packer (1995).

[71] See Partnoy (1999, 2009).

[72] See Ashcraft et al. (2009).

[73] Benmelech and Klugosz (2009) provide further evidence for ratings shopping by issuers.

investor-pays model is unfeasible without reliably suppressing free-riding. Keeping the issuers-pay model, reducing regulatory reliance and enhancing competition, seems to be the most promising path to reducing the conflicts of interest described above.

2.4.5. Accountability through liability

Although there seems to be little doubt that credit rating agencies were partially responsible for the recent financial crisis, legally they appear to be unaccountable. While their potential to impair financial stability vastly exceeds that of a standard publishing company, they are quite comparable with regard to liability.[74] In this context, a rating merely provides an opinion protected by the right to freedom of speech. Historically, the threat of liability has not been very effective for CRAs and most of the lawsuits trying to make CRAs accountable for defaults have been dismissed or were settled in favourable terms for the agencies. More accountability for credit ratings would positively impact CRAs' discipline and due diligence, since an erroneous rating would trigger legal consequences in addition to reputational penalties. Self-discipline by agencies fostered by a liability threat might even allow for laxer ex ante oversight. This could reduce surveillance expenditures. It is however unclear what the costs of a rigid civil liability regime for rating agencies would amount to. CRAs would probably factor in the expected costs of litigation. In the absence of a vibrant competition among agencies, these costs are likely to be passed on to customers rather than narrowing profit margins, which have been considerable in the past. Liability could furthermore increase investor reliance on ratings, as their investment risk is partially passed on to CRAs. Partnoy argues that investors who rely on unaccountable ratings are exposing only themselves to liability. Conceivably this has a positive effect on investors' due diligence. Moreover, decreasing the reliance on CRAs over time may make liability issues less pressing. From a practical perspective it may result to be difficult to assert the reason for a rating failure, which would be inevitably tied to any imposed penalty. While in the public opinion conflicts of interest are mostly deemed to be the reason for the CRAs' failure to accurately rate mortgage-backed securities prior to the financial crisis, academics are less certain. There is no consensus on whether poor ratings were due to conflicts of interest or imprecise modelling.[75]

[74] See Partnoy (2009).

[75] See Pagano and Volpin (2009).

2.5. Reform of Deposit Guarantee Schemes (DGS)

KEY FINDINGS

- Internalising (at least partially) the costs of bank failures through harmonised pre-funded DGS is likely to be beneficial to stability.
- Risk-based contributions potentially reduce moral hazard induced by deposit guarantee schemes. However, incentives to transfer risks to the shadow banking sector may be created.
- Costs for banks incurred by pre-funded DGS will vary (depending on membership in a pre-funded or ex-post funded scheme). They may be substantial for some banks in the short to medium run.
- Costs for depositors are likely to rise moderately.

The collapse of Lehman Brothers, the bank run on Northern Rock and the real threat of wide-ranging further bank defaults have highlighted the need for reform of DGS in Europe. To maintain depositors' confidence in the financial safety net, an *ad hoc* amendment (2009/14/EC) to the DGS Directive 94/19/EC was adopted in 2009. It mandated an increase of the minimum guarantee of deposits from EUR 20 000 to EUR 100 000 by 2011. This step seemed necessary to curtail distortions caused by different coverage levels of DGS across Member States. The currently proposed legislation is a recast of the DGS Directive[76] aimed at further promoting depositor confidence and financial stability.

2.5.1. General costs and benefits of DGS

DGS have been widely discussed in the academic literature ever since the creation of the Federal Deposit Insurance Corporation (FDIC) in the US in 1933 after the bank crisis of 1929. In 1959 Milton Friedman asserted that the FDIC was '*the most important structural change in our monetary system in the direction of greater stability since the post-Civil War tax on state bank notes*'.[77] Nevertheless, the academic debate does not solely concentrate on which configuration of DGS is likely to be the most preferable, but also on the question if deposit guarantees are sensible at all. The main reason for the provision of deposit guarantee is to avoid bank runs by **fostering depositor confidence** and thereby **increasing financial stability**.

The provision of deposit guarantees can, however, lead to **excessive risk taking** (moral hazard) by banks. The theoretical literature indicates that by protecting depositors from losses, their incentives to monitor the actions and management of their banks are significantly reduced.[78] Without a deposit guarantee scheme in place, higher risk taking by a bank is met by a demand for higher interest rates for deposits. This control mechanism fails in the face of guaranteed deposits. There is substantial empirical evidence and some practical experiments indicating the trade-off between deposit guarantee and risk taking.[79]

[76] See European Commission (2010d).

[77] See Friedman (1959).

[78] See e.g. Freixas and Rochet (1997).

[79] See e.g. Demirgüc-Kunt and Detragiache (2002), Honohan and Klingebiel (2003), Demirgüc-Kunt and Huizinga (2004), Laeven (2004) and Chernykh and Cole (2010).

In other words: empirical evidence shows that when countries implement or enhance deposit guarantee schemes, the average probability of a banking crisis increases. It should, however, be noted that this relationship is strongest for countries with a weak institutional environment, which is surely not the case for the European Union.[80] Furthermore, if banks have a large amount of unguaranteed debt on their balance sheets or are perceived as being 'too big to fail', it is unlikely that depositor protection will change their degree of risk taking.[81]

2.5.2. Impact of prefunding and risk based contributions on financial stability

As the recent financial crisis has demonstrated, the political pressure to resist protecting bank deposits in the wake of a widespread banking crisis becomes unbearable, even if no or very limited explicit guarantee schemes are in place. One of the more apparent advantages of an explicit guarantee scheme is the possibility of prefunding. Thereby the costs of a bank failure are, at least partially, internalised. For a DGS with a low explicit coverage level the existence of a partially implicit deposit guarantee beyond that level can be expected. Taking implicit deposit guarantee as a starting point, Gropp and Vesala find evidence that the introduction of explicit guarantees has strongly **reduced banks' risk taking** in Europe. It is argued that by changing from a vague but implicitly unlimited safety net to an explicit but limited guarantee scheme, private incentives to monitor banks have been increased. Note that while an implicit guarantee scheme can probably be operated without any extra supervisory entity, explicit guarantee schemes may need such an entity in order to protect the deposit guarantee funds. The Commission proposes that the newly established EBA should be entrusted with this task. The costs thereby incurred should not be neglected.

To increase incentives for prudential risk taking by banks, the Commission has proposed risk-based contributions. In the academic literature there seems to be a broad consensus that risk-based contributions to deposit guarantee schemes are, at least in theory, desirable. In practice, however, an appropriate risk-based premium structure is exceedingly difficult to design, as it requires correct evaluation of the risk contained in a bank's balance sheet. In the light of increasingly complex financial instruments, this may be difficult. Furthermore, it is conceivable that sophisticated banks find ways to circumvent paying risk premiums e.g. by transferring risks to the shadow banking sector. Possibly the benefits of risk based contributions do not offset the indirect costs on stability. Empirically there seems to be little evidence of the effectiveness of risk-based contributions to deposit guarantee schemes.[82] In the survey conducted by ZEW, however, respondents strongly support risk-based contributions to DGS. While only 33% believe that an explicit and prefunded scheme would improve or largely improve stability, 61% of respondents feel that way if contributions are risk-based. Furthermore, the perception that an explicit and prefunded DGS is detrimental to stability more than halves (from 17% to 7%) when contributions are linked to banks' exposure to risk.

2.5.3. Impact of a fixed coverage level on financial stability

The Directive 94/19/EC delivered a minimum harmonisation framework for DGS which resulted in vastly differing provisions in Member States. Now, a fully harmonised coverage level is fixed at EUR 100 000; and in the future, DGS should be prefunded via a harmonised

[80] For the US Wheelock and Wilson (1994) as well as Alston et al. (1994) fail to establish this relationship empirically.

[81] See Calomiris (1999) and Gropp and Vesala (2001).

[82] In Hovakimian et al. (2003) the favourable effect of risk-based contributions fails to achieve significance.

contribution scheme. When explicit deposit guarantee is provided, there seems to be consensus that the coverage level should provide full guarantee for a majority of depositors[83] as the probability of bank runs cannot be significantly reduced otherwise. However, some argue that the stabilising effect of a high coverage level is offset by moral hazard issues.[84] In this context it should be considered that irrespective of a DGS, certainly not all depositors will be able to exert much influence on a bank's risk taking behaviour and that a retail depositor has neither the information nor the competence to monitor banks.

2.5.4. Quantitative impact on banks and depositors

According to the Commission's Impact Assessment,[85] the proposed DGS legislation is expected to have an impact on stakeholders (depositors, banks and DGS) within five to 10 years. At the end of the building-up (of prefunding) period (10 years), the DGSs should have a total of EUR 150 billion at their disposal, with an additional EUR 50 billion potentially available through ex-post funds if they become necessary, e.g. in the wake of a bank failure. This is a significant increase of available funds in comparison to those accessible in 2008 (EUR 23 billion). The increase in available DGS funds will, of course, be reflected in increased costs for banks. Aggregate annual bank contributions to DGS will increase from the pre-crisis level of EUR 1.8 billion to EUR 9.4 billion. In addition to the contributions, the Commission expects banks to be confronted with non-recurring administrative costs of about EUR 1.2 billion per year over a period of five years. In terms of bank operating profits, the Commission approximates a 4% decrease for the first five years and a 2.5% decrease for the next five years.[86] The harmonisation of DGS across the European Union would increase the amount of eligible deposits from 61% to 72% and the amount of fully covered deposits from 89% to 95%. On the other hand, it is likely that higher and wider coverage of deposits will have an effect on depositors as banks pass on their costs. If costs incurred by the prefunding of DGS are fully passed on to depositors, the Commission estimates a consequential average decrease of the interest rate on saving accounts by 0.1% or an increase of bank fees on each current account by approximately EUR 7 per year. Note that regulatory harmonisation and large discrepancies between DGS funding in Member States will result in asymmetric burdens for banks and depositors of different DGSs.

The amendment 2009/14/EC included a call to submit a report on potential models for the introduction of risk-based contributions to DGS. The EC Joint Research Centre (JRC) has investigated the potential impact of a selection of such models.[87] The model deemed most feasible is a so called Multiple Indicators Model.[88] Numerical results indicate that the EU average maximum decrease in contributions (due to minimum risk exposure) for a bank amounts to -4.1%, while the average maximum increase in contributions (due to maximum risk exposure) amounts to 3.8%.

[83] See e.g. Cariboni et al. (2008).

[84] See e.g. McCoy (2006) and Kane (1989).

[85] See European Commission (2010e).

[86] The decrease in operating profits would be higher (approx. 7.5% and 6% for the first and following five years respectively) in times during which banks would have to provide additional ex-post funding.

[87] See JRC (2009).

[88] Chosen indicators of the model take into account the following risk classes: capital adequacy, asset quality, profitability and liquidity.

2.6. Reform of Investor Compensation Schemes (ICS)

KEY FINDINGS

- Due to infrequent compensation events overall impact of changes to the ICSD on investors is expected to be moderate.
- Prefunding and cross-border lending of ICS will increase the stability of schemes.
- *A priori* partial compensation can increase investor confidence.
- Harmonisation of ICS will increase investor confidence.

The Investor-Compensation Schemes Directive (ICSD) 97/9/EC of 1997 aimed at creating a single market for investment services, as well as increasing investor protection and confidence. However, Member States' implementation led to differences in the functioning of national ICS resulting in various investor complaints about coverage-, funding- and payment delay regulations. Hence the proposal strives to improve the ICSD's practical value and to create a level playing field by harmonisation.[89] Because academic literature concerned with ICS is very scarce, this sub-chapter will be brief.

2.6.1. General costs and benefits of investor compensation

ICS are activated when investment firms fail to return clients' assets. Two sources of risk may trigger a compensation event: financial risks and operational risks:[90] (1) Financial risks arise due to failures of investment companies or failures of third parties which act on behalf of investment companies. (2) Operational risks include theft, fraud, settlement failures, segregation errors,[91] accounting errors and poor management decisions. In principle bad investment advice belongs to operational failures but it is not covered. Only the scheme implemented in the UK offers compensation for bad advice. Between 1999 and 2004 the total number of events prompting investor compensation in the European Union, excluding the UK, amounted to 37. This stands in sharp contrast to the more than 1 600 events reported for the UK.[92] The largest losses from the most frequent operational faults ranged between EUR 0.3 to EUR 7.2 million and were fully covered by the investment companies' capital.[93] The five largest losses in terms of assets under the corresponding investment entity's management ranged between 0.7-17.3 basis points and eroded less than 10% of the company's capital.[94] Losses from financial risks are less frequent and have a comparatively limited impact due to segregation requirements for clients' assets. Overall, studies suggest that compensation events are rare and that losses, which tend to be small, can commonly be absorbed by the management firm. Nevertheless, the bankruptcy of the German Phoenix fund in 2005 resulted in compensation claims of EUR 674 million. ICS should therefore be able to handle quite substantial claims in exceptional situations.

[89] See European Commission (2010g).

[90] See Oxera (2005a).

[91] Errors caused by falsely differentiating between the investment entity's assets and client's assets.

[92] See Oxera (2005a).

[93] See Oxera(2001).

[94] Biais et al. (2003).

However, it should be noted, that due to the relative infrequency of eligible compensation events all proposed changes to ICSD are expected to have a moderate impact on investors.

Unlike Deposit Guarantee Schemes, ICS do not have a systemic component and are therefore not crucial for financial stability. However, compensation schemes have in common that they potentially reduce monitoring activities by investors/depositors as part of the risk is shifted. In turn, managers may feel encouraged to engage in activities which may harm shareholders and stakeholders (moral hazard) which would decrease financial stability.

2.6.2. Impact of ICSD

The proposal includes a minimum target funding ratio funded by ex-ante contributions from all members of ICSDs. Ex-ante funding has some advantages over ex-post funding (e.g. if small or poorly funded members are unable to meet their obligations, the burden for healthy members could rise;[95] or in extreme cases compensation with taxpayers' money may become necessary). But ex-ante funding curtails profits and increases opportunity costs of capital.[96] Until target fund levels are reached, investment firms could encounter significant costs depending on the maximum compensation limit. Higher compensation limits would increase compensation costs and therefore funding costs substantially, but would be beneficial to only a small proportion of investors.[97] Furthermore, the Commission's proposal includes cross border lending between national schemes which shall increase the stability of ICSs.

As demonstrated by the Phoenix fund bankruptcy, schemes facing large claims might suffer from underfunding and investors may experience unacceptable payment delays. Although the federal agency for financial supervision of Germany (BaFin) determined in 2005 that with the Phoenix fund bankruptcy a compensation event had occurred, payouts to investors were delayed until 2009 and still have to be concluded.[98] The revision of the ICSD entails rules to solve payment delay issues. Because determining compensation eligibility and the amount of compensation may take several years, the Commission has proposed *a priori* partial compensation. Such partial compensation can increase investor confidence.

[95] See Mladenov and Kazandjieva-Yordanova (2008).

[96] See EBF European Banking Federation (2010).

[97] Taking the Phoenix case in Germany and the W&R Morrogh case in Ireland as examples, compensation costs for a compensation limit of EUR 100 000 would rise 37% and 46%-73%, while the compensation would benefit an extra 6% and 4.4% of investors for the German and Irish case respectively (European Commission, 2010h).

[98] See European Commission (2010h), Annex VI of the Impact Assessment.

2.7. Review of the Markets in Financial Instruments Directive (MiFID)

KEY FINDINGS

- Overall market liquidity has increased and traditional trading venues have cut costs as a result of MiFID.
- Trading conducted without pre-trade transparency is increasing.
- Publication of consolidated post-trade data is deemed to be beneficial.
- Trading venues not regulated by MiFID circumvent surveillance costs, although some of their operating models are similar to MiFID venues.
- The inclusion of standardised OTC trades into MiFID regulation is likely to improve market quality.

The Markets in Financial Instruments Directive 2004/39/EC (MiFID) is a central part of EU efforts to integrate European financial markets. The directive is currently being reviewed; a concrete legislative proposal is pending (as of June 2011). The most important issues are contained in the Public Consultation Document[99] of the European Commission. Basic terminology and trading terms can be found in literature.[100] Because developments resulting from MiFID have not yet been concluded it is difficult to assess the impact of any further regulation. In the following we assess the impact of MiFID so far and infer, where possible, the impact of the MiFID review from arguments found in the literature.

2.7.1. Fragmentation and liquidity

One of the main goals of the Markets in Financial Instruments Directive has been to improve market quality through an increase in competition between trading venues. Thereby market quality can be mainly characterised by high liquidity[101] and low transaction costs. In the academic literature it has long been argued that trading naturally concentrates in the market that is most liquid.[102] There exists compelling evidence of a positive impact of the MiFID. The introduction of more competition led traditional trading venues to cut costs and innovate in order to keep up with newly established competitive trading venues with no widening of the bid-ask-spread of European stocks as a result of MiFID. On the contrary, it seems that market fragmentation has increased overall (global) liquidity.[103] Differences between Member States, however, prevail, with liquidity improvements being strongest in

[99] See European Commission (2010c).

[100] For a more detailed explanation, see Harris, L. (2003): *Trading and Exchanges: Market Microstructure for Practitioners,* Oxford University Press, New York.

[101] Liquidity in this context refers to the ability to sell or buy an asset without causing its price to move significantly. Liquidity is often measured by the bid-ask-spread (the difference between the quoted prices for buying and selling an asset immediately).

[102] See e.g. Pagano (1989).

[103] See e.g. Foucault and Menkveld (2008), CFA (2009), Degryse et al. (2011) and Riordan et al. (2011). Furthermore, there is extensive empirical evidence indicating a positive impact of competition on market quality for the US. See e.g. Hendershott and Meldelson (2000), Weston (2000) and Huang (2002).

countries with the most fragmented markets.[104] Note that the perception of market participants regarding changes in liquidity as a result of MiFID may contradict the results of empirical studies. In a survey conducted by the CFA Institute[105], 52% of respondents believed that MiFID had no impact on the bid-ask spread, while 29% felt a decrease in spread and 20% an increase.[106] This discrepancy may be attributed to the financial markets disruptions ensuing from the recent financial crisis.

2.7.2. Connectivity and pre-trade transparency

The key to narrower overall bid-ask spreads seems to have been the connectivity between trading venues. When orders submitted to different venues can interact with each other, it is possible to benefit from the network externality in spite of market fragmentation, but this requires extensive transparency rules. Only when orders of different platforms can be easily compared, best price execution is possible. Thus, pre-trade transparency as well as direct access to trading platforms is of vital importance. Access to trading platforms can be warranted e.g. by order routing technology. Empirical evidence admonishes that an increase in market liquidity is only achieved on a global level, i.e. when access to all trading venues is available.[107] Local liquidity, i.e. market liquidity available to traders with access to the regulated market only, has significantly deteriorated as a result of MiFID.

2.7.3. Dark pools

The mandatory publication of pre-trade data is not entirely unproblematic, in particular for traders seeking to place large orders, which would be met with adverse price movements if revealed prior to the execution of the order. In order to mitigate such adverse price movements, which should be considered as indirect costs of decentralised liquidity, MiFID introduced transparency waivers.[108] Thereby so-called “dark pools” have been created with limited or no pre-trade transparency.[109] Minimising the market impact of trades, limiting information leakages and improving the execution price[110] are advantages of trading in dark pools.[111] It should, however, be noted that for traders the positive effects may come at the price of substantially lower execution speeds. MiFID has thus provided traders with more choices reflecting the heterogeneity of preferences. But when too much trading is deferred to dark pools, an overall decrease in liquidity with detrimental effects on the quality of price discovery would be the consequence. Dark pools themselves would be negatively affected as they base their trades on prices displayed on venues with pre-trade transparency. The empirical literature analysing data from North American markets, paints an ambiguous picture. While some empirical studies identify a positive impact of greater pre-trade transparency on market quality, others suggest that the impact is adverse.[112]

[104] According to CFA (2009) these are the United Kingdom and France.

[105] Members of the CFA Institute were asked in order to obtain feedback on market fragmentation in Europe, focusing on issues such as transparency, costs, and execution quality. The poll was designed to gauge investors' experiences on how these issues have been affected since the introduction of MiFID (CFA, 2009).

[106] See CFA (2009).

[107] See Degryse et al. (2011).

[108] Waivers include a quantity waiver, price waiver (an order has to be executed at the midpoint price) and a negotiated waiver (for negotiated trades).

[109] Dark pools need to report their orders only after they have been executed (post-trade transparency).

[110] Whereas an order on a regulated market is executed at the cost of the bid-ask spread, in dark pools the execution price is built at the midpoint of the best bid-ask quotes of regulated markets.

[111] See Gomber and Pierron (2010).

[112] Boehmer et al. (2005) provide evidence of a positive impact for the New York Stock Exchange, while Madhavan et al. (2005) identify an inverse relation for the Toronto Stock Exchange.

Empirical studies for the European markets are not available. Recently, however, there has been a sharp increase in trading conducted through dark pools, with approximately 7% of trading currently executed on venues without pre-trade transparency.[113] Furthermore, 70% of respondents of the CFA survey believe that dark pools are problematic for price discovery and market volatility; 58% believe they are problematic for market liquidity.

2.7.4. Trade data and surveillance

The fragmentation of markets as a result of MiFID has impacted the availability and cost of post-trade data on prices and volumes. Whereas the originators of data were previously concentrated in just a few trading venues, they are now far more dispersed. This could generate higher costs for market data vendors and increase fees for data users. According to investigations by the European Securities Market Expert Group (ESME), however, there is no substantial evidence indicating such increases.[114] Self-regulating forces seem to be operating satisfactorily, hindering originators of market data to provide data at disproportionate fees. In this context, approximately half of the respondents of the CFA survey believe that there has been no change in pre- and post-trade transparency as a result of MiFID. A majority of respondents, however, find that a formally mandated consolidation of trade data, as e.g. available in the US, would be beneficial.

Moreover, fragmentation will possibly lead to surveillance problems. Multiple trading venues with different regulatory regimes will make it increasingly difficult to spot market manipulations. Furthermore, the costs for surveillance may be asymmetrically distributed amongst trading venues. While regulated markets and multilateral trading facilities are likely to shoulder the bulk of the costs incurred by surveillance requirements, trading venues not regulated by MiFID, but displaying a similar operating model (e.g. broker/dealer crossing networks), are likely to circumvent these costs.

2.7.5. OTC markets and broker/dealer crossing networks (BDCN)

After the implementation of MiFID so-called Broker/Dealer Crossing Networks have emerged. BDCNs are operated by investment firms providing order execution services for institutional customers. Thereby the investment firm collects typically large orders and executes them against each other, against retail order flow and their own trading book. Whereas the order execution service by investment firms was previously carried out on a traditional OTC basis[115], there has been a shift in this activity towards more automated electronic platforms (BDCNs). Trades conducted on these platforms do not have much in common with typical OTC trades. An increasing resemblance of operating models between BDCNs and MiFID venue classifications (regulated markets, multilateral trading facilities and systematic internalisers) can be observed. Nevertheless BDCNs are exempt from providing pre- and post-trade data. Advances in trading with computer programs has increased order flow and market share of BDCNs and may eventually lead to a deterioration of market quality.[116] Imposing regulatory requirements on broker/dealer crossing networks similar to those expressed for MiFID venues may be beneficial.

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[113] See Gomber and Pierron (2010). Note that the estimate does not include the OTC market, which is not defined as a trading venue according to MiFID. As stated by to Gomber and Pierron, the OTC market accounts for approximately 40% of European turnover market share of market venues in 2009.

[114] See ESME (2009).

[115] According to Recital 53 of MiFID, OTC executions are characterised inter alia as ad-hoc and irregular and carried out with wholesale counterparties and are part of a business relationship which is itself characterised by dealings larger than standard market size.

[116] See Gomber and Pierron (2010).

2.8. Financial transaction taxes and other bank levies

KEY FINDINGS

- The main effect of a financial transaction tax (FTT), a financial activity tax (FAT) or a financial stability contribution (FSC) is to generate revenues for the government.
- The incidence of a FAT should be similar to a value-added tax: It should be largely passed on to the consumers of financial services. Little is known about the incidence of FTTs and FSCs.
- Currently, there are different FSCs implemented in some European countries. The situation is very heterogeneous.

Taxes which are directed towards financial markets or market participants are currently in debate amongst academics and politicians. There is now a concrete proposal from the European Commission (2011). Financial transactions taxes (FTT, Tobin tax) aim to stabilise financial markets and to increase governments' tax revenues. Other taxes that will be levied on banks (e.g. the German bank levy) are expected to finance the guarantee schemes provided by governments in order to rescue banks in periods of financial crises.

There is a rich empirical and theoretical literature on financial transaction taxes, their effects on market volatility and tax revenues, as well as the feasibility of such taxes. The bulk of the literature analyses the so-called 'Tobin tax', referring to transactions on the foreign exchange markets. Only few publications deal with broader applications of such taxes, taking into account additional financial markets, as for example, equity and bond markets. There are also only few publications investigating other types of taxes related to the financial sector, such as a financial activity tax or additional bank levies.

The following review of the literature summarises the findings of empirical research on these taxes and levies with a particular focus on possible effects on the banking sector and the economy. The ultimate scope of the results presented is determined by the findings already made in the relevant publications on this topic.

2.8.1. Financial transaction taxes (FTT)

McCulloch and Pacillo[117] give a comprehensive literature review on the Tobin tax. They take into account the academic research publications of at least the last 25 years and evaluate their results regarding the effects on feasibility, market volatility, and tax revenues. First, papers with a focus on theoretical analysis using a wide range of different theoretical approaches are surveyed. The effects on market volatility are rather mixed. Either an increase or a decrease in volatility might occur after the introduction of a Tobin tax. The effect particularly depends on the tax rate, market size and the type of market organisation.

Quite a few empirical studies analyse the effects of existing financial market taxes, as for example the impact of the UK stamp tax on the British stock market. Those studies investigating the effects of transaction costs on capital markets are of particular importance, as a financial transaction tax might be considered economically as an increase

[117] McCulloch and Pacillo (2011).

in transaction costs. The authors calculate the tax revenues worldwide for equity markets as well as for foreign exchange, derivatives and OTC markets.[118] They assume that the tax rates are defined as a ratio of the market transactions costs. Tax rates therefore differ across markets in accordance with the respective transaction costs.[119] The main benefit of a Tobin tax seems to be the generation of a high amount of tax revenues which can be used by governments. But the results on the other intended benefit, a reduction in market volatility, is rather unclear; either an increase or a decrease might occur. The introduction of a Tobin tax could also deteriorate market liquidity. To avoid this effect the tax rate should be set rather low, not in a rate of 50% of transaction costs but rather only up to 10% of market transaction costs. This would of course also reduce tax revenues to about USD 482 billion (ca. 0.8% of worldwide GDP). Interestingly, the amount of the 10%-case is higher than just 1/5 of the 50%-case. This is because higher tax rates are expected to decrease the tax base, i.e. the market transaction volume.

The recent proposal of the EU Commission is to introduce a FTT with a 0.1% tax rate on trading in stocks and bonds and 0.01% on derivatives. The Commission estimates revenues of about EUR 30 billion.[120] The proposed tax rates are actually relatively low[121] and should therefore hardly have significant negative side effects. The tax revenues are benefits for the government but costs for market participants. The incidence of a Tobin tax is yet fairly unclear. It is only clear that short term investors and traders will cause the bulk of the tax revenues. But it is uncertain whether these taxes are passed through to private investors or whether substantial parts of the costs are borne by the market intermediaries (banks, hedge funds, brokers etc.). It is also not clear if and to what extent the short-term behaviour of (some) market participants will be changed to a more long-term behaviour. This would, as a consequence, reduce the tax revenues and the incidence. Thus, the main effect of a FTT is to generate revenues for governments.

2.8.2. Other bank levies (Financial Activity Tax - FAT, Financial Stability Contribution - FSC)

Besides financial transaction taxes there are also other bank levies which are currently being discussed, such as a financial activity tax (FAT, tax base = banks' profits and (parts of) wage bill) or a financial stability contribution (FSC, tax base = total balance sheet or parts of the balance sheet, as e.g. the total liabilities). In a study of the International Monetary Fund (2010) the costs and benefits of such types of bank levies are investigated theoretically. KPMG (2011b) gives an overview of bank levies which are currently implemented, planned or discussed.

A FAT is essentially like a specific value-added tax for the financial sector. As the financial sector is now VAT-exempt in most countries, a FAT would correct this under-taxation of financial services. To the best of our knowledge, there are currently no general FATs implemented internationally. But in some countries there are taxes on bonus payments.[122] A FSC, such as the German bank tax, is levied on the total balance sheet or selected parts

[118] Table 9 in McCulloch and Pacillo (2011) shows the central results regarding the expected tax revenues.

[119] The transaction costs are smallest for derivative markets (0.039%) and highest for equity markets (1.163%), see Table 9 in McCulloch and Pacillo. To give an example: If the tax rate amounts to 50% of the transaction costs of the different markets then the total worldwide revenues are estimated to be USD 1 631 billion. This is about 2.6% of worldwide GDP (2010, IMF estimates). In this 50%-transaction cost case the tax rates are between 0.012% for foreign exchange markets and 0.581% for equity markets.

[120] European Commission (2011).

[121] This is not only the opinion of European Commission (2011) but can also be derived from McCulloch and Pacillo.

[122] For an overview on taxes on bonus payments see Bundesfinanzministerium (2011).

of the balance sheet (e.g. the liabilities of a bank). In addition, in Austria, Germany and Portugal also (off-balance sheet) derivatives are included in the tax base. The main goal of both types of taxes is to generate tax revenues which can be used by governments.

In the following an overview is given of the potential taxes bases, depending on three different types of FAT.[123] The broadest tax base is the sum of profits (minus gross fixed capital formation) and the total wage bill of the financial sector. Defined as percentage of GDP, the potential tax base amounts to a minimum of 1.9% for Finland and 23.2% for Luxembourg. The median tax base is between 4.2% and 4.9%.

Assuming a FAT tax rate of 5% the tax revenues would be between 0.095% of GDP for Finland and 1.16% for Luxembourg, the median tax revenue being between 0.21% and 0.25% of GDP.[124] Again, as in the case of the Tobin tax, little is known empirically about the incidence of a FAT. But as a FAT is essentially a VAT on financial services the incidence of a FAT should be similar to the incidence of a VAT: The tax should be largely passed on to the consumers of financial services.[125] This effect is intended and helps to reduce short-term trades in all financial markets.

Regarding FSCs such as taxes based on the total balance sheet, little is known about the incidence. Looking at the international comparison of proposed FSCs in KPMG (2011b) there seems to be large variation in the details of FSCs in the different countries (Austria, Cyprus, France, Germany, Hungary, Iceland, Portugal, Sweden, the UK and the US).[126] These differences refer in particular to the tax base, exclusions from the tax base, and the tax rate. Thus, an analysis would have to evaluate the effects and incidence of FSCs country by country. As the characteristics of the proposed FSCs are heterogeneous, the impact of these taxes on the national banking sector should also be different. Below, estimations of the tax revenues for the above-mentioned bank taxes are presented:[127]

- For Germany the ministry of finance expects annual revenues from the bank tax of about EUR 1.3 billion. This is about 0.053% of German GDP.[128]
- For France the official estimate are tax revenues of EUR 0.5 billion for 2011.[129] This amounts to 0.026% of French GDP.
- The British bank levy shall lead to tax revenues of GBP 2.5 billion in 2011 and 2012 and to GBP 2.6 in 2013 and 2014.[130] Thus the annual amounts in euro are expected to be about EUR 2.2 billion (about 0.073% of British GDP).

[123] IMF (2010c).

[124] A FAT tax rate of 5% is also proposed in European Commission (2011).

[125] IMF (2010c).

[126] With the only exception of the United States the proposed bank levies are already legally in force (see KPMG (2011b)).

[127] For Austria, Cyprus and Portugal the tax base is non-linear; in the case of Austria and Portugal it also includes the turnover of banks in derivatives, which is not observable.. Therefore, estimating the tax revenues for the bank tax implemented in these three countries would make it necessary to analyse the balance sheets of the individual banks of the countries. This is far outside the scope of this study. As also no other external estimates have been found, no estimates of the bank tax revenues can be provided for these three countries.

Ratios of tax revenues to GDP are calculated using the 2010 figures for GDP in current prices from IMF (2011b). The transformation of the GDP figures from USD to euro has been conducted using the 2010 year-end value of the exchange rate (ca. USD 1.34 for EUR 1).

[128] See Sachverständigenrat (2010).

[129] See Legifrance.gouv.fr (2010)

[130] See HM Treasury (2011)

- In Sweden the so called stability fee amounts to 0.036% of the liabilities of regulated credit institutions.[131] Multiplied by the latest available liabilities of the Swedish monetary and financial institutions (SEK 10 356 530 million, March 2011) this gives annual tax revenues of about SEK 3.7 billion (ca. EUR 0.41 billion) or 0.12% of Swedish GDP.
- The bank tax in Hungary induces much higher tax revenues compared to other bank taxes in force internationally due to relatively high tax rates.[132] The tax revenues expected by the Hungarian government are about Forint 200 billion. This would amount to ca. 0.8% of GDP.

[131] See KPMG (2011b).

[132] See KPMG (2011) and Osvat and Osvat (2010).

2.9. Additional capital requirements for systemically important financial institutions

KEY FINDINGS

- Additional capital requirements for SIFIs help to reduce the probability and severeness of future financial crises.
- According to theoretical considerations and empirical studies the costs of additional capital requirements for SIFIs are expected to be relatively small. Thus, macroeconomic effects (on lending, on GDP etc.) should be very small either.
- As a consequence, recent proposals to surcharge SIFIs additional 1% to 3.5% of equity seem are well-founded from an economic point of view.

The financial crisis has demonstrated that a regulatory approach centred on the safety of individual banks does not warrant safety of the banking system as a whole: The impact of a regulatory measure on the behaviour of a single isolated bank can be very different from its effect on the joint behaviour of a system of banks. In the CRD IV directive new measures will be introduced that are aimed at directly reducing systemic risk:[133] The counter-cyclical capital buffer and the capital conservation buffer. These regulatory rules have to be met by all banks.

So called SIFIs, i.e. systemically important financial institutions, are banks that have a particularly strong influence on the systemic risk of the financial sector.[134] Currently there are discussions amongst politicians, regulators and academics about additional measures to limit and control the systemic risk stemming from SIFIs.[135] This aims at internalising the negative externalities stemming from the 'too big to fail'-characteristic of SIFIs.

In the focus of the discussion of suitable measures is an increase of the minimum capital requirement for SIFIs. Additional capital requirements for SIFIs and G-SIFIs would be a logical expansion of the regulatory rules of the CRD IV directive and each of the following measures are possible in order to limit the specific risk of SIFIs: An increase of the minimum capital requirement beyond 8%, an increase of the capital conservation buffer, as well as a higher counter-cyclical buffer. In addition the quality of the capital requirements could be hardened further (which means a higher ratio of core tier 1 capital for SIFIs). All these measures are able to significantly reduce the systemic risk contribution of SIFIs.

The most recent proposal comes from the Basel Committee on Banking Supervision: SIFIs shall be imposed a surcharge of 1% to 2.5%, depending on their systemic importance.[136] One percentage point could be added if the systemic importance of a bank grows significantly. This surcharge had to be held in common tier 1 capital and thus so called conditional convertible bonds (abbreviated: CoCos) would not be counted. A decision on this proposal shall be made in the next G-20 meeting in November 2011.

[133] Clerc-Renaud et al. (2011), gives a comprehensive description and assessment of the CRD IV directive and its economic impacts.

[134] If these banks even have a significant influence on the financial sector worldwide they are called 'global systemically important financial institutions', abbreviated G-SIFIs.

[135] At the G-20 meeting in Seoul in November 2010 it was decided to implement additional regulatory measures for SIFIs. See Financial Stability Board (2011).

[136] See the press release as of June 25, 2011: http://www.bis.org/press/p110625.htm.

Currently there is also still a discussion on allowing the use of CoCos in this context. CoCos are like plain vanilla bonds in 'normal' periods and are converted to equity capital in a crisis.[137] An interesting example is the new regulatory rule for SIFIs in Switzerland.[138]

2.9.1. Costs and benefits of additional equity for SIFIs

on one hand, the benefit of higher capital requirements for SIFIs is a reduction in the probability of future systemic crises and also a decrease in the potential costs of such crises for the economy. But only little can be said about the relationship between an increase in capital requirements for SIFIs and the resulting decrease in the probability of future systemic crises.[139]

On the other hand higher capital requirements are likely to increase the capital costs of banks with a possible consequence of higher prices for loans offered by these banks to companies and private households. In Clerc-Renaud et al. (2011), this topic is discussed in detail. Their results, which are derived for the new regulatory measures of the CRD IV directive, can be directly applied to additional capital requirements for SIFIs. They find that the additional capital requirements of Basel III might increase the capital costs of banks by only a few basis points.[140] These results are in line with other results of academic research.[141] Only very small increases in the capital costs of banks and loan rates due to higher capital requirements have been estimated for US banks: An additional 10 percentage points of capital requirements should increase loan rates only by about 25 to 45 basis points.[142] Very similar results have been found for British banks.[143] These empirical findings are close to the prediction of the Modigliani-Miller theorem which states that the capital structure (consisting of equity and debt) is irrelevant for the cost of capital.[144] The relatively small differences between this prediction and the results of empirical studies are to a large degree due to the different tax treatment of debt versus equity: The tax shield of debt leads to lower costs for debt compared to equity and thus causes the (relatively small)

[137] There are many different types of CoCos possible. They differ, for example, on the trigger criterion that converts debt to equity. For a discussion of these instruments and the (potential) market of CoCos see Zähres (2011). Zähres also discusses bail-in capital which is a debt-to-equity swap decided upon by a national regulator to restructure a bank.

[138] The proposal regarding the Swiss bank law claims a minimum capital of up to 19% for SIFIs. This minimum capital shall consist of 4.5% of core-tier-1 capital, a buffer capital of 8.5% (shall consist of 5.5% core-tier-1 capital and 3% CoCos), and a variable buffer capital of up to 6% (to be held as CoCos). See Abegglen et al. (2011).

[139] Demirguc-Kunt et al. (2010), find that for better capitalised banks the equity value declined less severely during the financial crisis. This effect was particularly strong for large banks. Miles et al. (2011), estimate for the UK that a permanent decrease of the probability of a systemic financial crisis by 1 percentage point in any year in the future will lead to a present value gain of 55% of current GDP.

[140] See Tables 5 and 6 in Clerc Renaud et al. (2011). Unfortunately, they do not give a clear estimation procedure for arriving at these results.

[141] For an excellent overview see Miles et al. (2011).

[142] See Kashyap et al. (2010). The authors argue that, however, due to high competition even small increases in capital costs could lead to shifts of business activities from banks to the shadow banking sector. As a consequence they also recommend implementing higher regulatory standards for shadow banks such as hedge funds, private equity funds, money market funds etc.

[143] See Miles et al. (2011). The authors estimate that a doubling of the tier 1 capital of British banks (i.e. leverage decreases from 30 to 15) increases banks' funding costs by about 18 basis points only.

[144] For a comprehensive discussion of the Modigliani-Miller theorem and its applications to the capital costs of banks see Admati et al. (2010). The weighted average costs of capital (WACC) are defined – in the simplest case - as the sum of the cost for equity and the cost for debt, weighted by their individual share in the total capital of a company. The total capital in this case consists only of equity and debt.

increase in weighted average costs of capital (WACC) of banks when capital requirements rise.

The Swiss proposal to use CoCos to fulfil additional capital requirements of SIFIs aims at limiting possible increases of the WACC. As CoCos are like bonds in non-crisis periods, they have the same tax shield as bonds. Issuing CoCos instead of new equity could therefore lead to an even smaller increase in the WACC.[145]

Another fact has to be borne in mind: Banks (and also SIFIs) usually hold equity buffers well beyond the regulatory minimum. These capital buffers seem to be the result of market forces and an optimising behaviour of banks regarding their capital structure.[146] How will banks adjust to higher new capital requirements? Those banks that already hold buffers at or beyond the new capital requirements could just hold the same level of equity in the future without further changes. In that case these banks would incur no increase of the WACC. But they could also, for example, add their "old" buffers on top of the new required minimum capital, holding again the same absolute or relative buffer as in the past.

As a consequence only relatively small increases in the capital costs of SIFIs have to be expected due to additional capital requirements. Given these small increases in bank capital costs, the impact on bank lending rates and GDP should be almost negligible.[147] Interestingly, a bank capital ratio that is optimal for the whole economy might be in the range that is now proposed for SIFIs.[148]

[145] But as Zähres (2011) discusses the market for CoCos is not yet developed and there are several factors that will influence their price, such as market liquidity and the definition of the trigger (which converts debt to equity).

[146] See Gropp and Heider (2009).

[147] For example, Slovik and Cournède (2011), estimate that a (permanent) increase in bank lending rates by 100 basis point should decrease annual GDP growth (permanently) by between 0.18 (US) and 0.42 (euro area) basis points. An additional capital requirement for SIFIs of, for example, 2.5 percentage points would, according to Kashyap et al. (2010), lead to an increase in loan rates between 0.08 and 0.11 basis points and, thus, to a permanent decrease in annual GDP growth of about 0.02 (US) and 0.04 (euro area) basis point. Even this estimate is biased upwards as the calculations of Slovik and Cournède assume that lending rates of *all* banks increase and not only those of SIFIs.

[148] Miles et al. (2011) estimate that the bank capital ratio should be about 16% to 20% in the welfare optimum for the UK.

2.10. Bank restructuring and resolution procedures

KEY FINDINGS

- Procedures for the restructuring and resolution of banks will help to internalise the social costs of bank failures, to increase incentives of shareholders and debt holders towards a better monitoring and governance of banks, and to limit the riskiness of the business strategy of banks.
- Only a few countries already introduced such procedures. The situation is very heterogeneous as the existing rules are different from each other.
- EU-wide rules are highly recommended as these would level the playing field.

Another important topic in the discussion on solving the 'too big to fail' problem are measures to restructure and resolve banks that are insolvent. During the second half of 2011 the Financial Stability Board (FSB) will conduct a public consultation on bank resolution procedures and before the G-20 November summit in Cannes recommendations will be published.[149] In the centre of the discussion are rules for the recovery and resolution of G-SIFIs which means that two or more countries are involved in this process of restructuring.

On the European and the national level only a few new procedures have been introduced so far or are planned for the near future.[150] The Germany bank resolution is part of the Restructuring Act[151], in the United States the respective rules are part of the Dodd-Frank Act (Title II, Orderly Liquidation Authority). For the United Kingdom the Independent Banking Commission recently published their recommendations for a future law on bank restructuring and resolution.[152] In Denmark new rules for winding-up banks have been implemented in the so-called 'Bank package III'.[153] On a European level the European Commission conducted several initiatives during the last 12 months: A consultation on technical details of a crisis management framework, communications on crisis management in the financial sector and on bank resolution funds.[154] A proposal of the international banking industry has also been published.[155]

A basic idea of the different proposals and rules is that banks that are still classified as 'too big to fail' can at least partly be restructured or even liquidated in future financial crises. This means that in future crises there shall not be a public guarantee to rescue complete banking companies without a significant contribution of the shareholders and debt holders to covering the costs of the rescue. This aims at internalising (at least parts of) the social

[149] See Financial Stability Board (2011).

[150] CliffordChance (2011) give an overview until May 2011.

[151] The Restructuring Act is part of a larger German bank restructuring framework that also includes the law on a bank restructuring fund which is financed by a bank levy.

[152] See Independent Commission on Banking (2011).

[153] See http://www.finansielstabilitet.dk/Images/PDFer/Engelsk/Finansiel%20Stabilitet/Tender%20appendix%201.pdf. According to the Danish rules not only shareholders but even bondholders and some forms of deposit may bear losses.

[154] See European Commission (2010 i,j,k).

[155] See Institute of International Finance (2011).

costs of bank failures. It also aims at reducing misaligned incentives of banks which are directed towards too risky business strategies if the bank owners and the management believe that their institution is 'too big to fail'.

In addition, the proposed restructuring processes include bail-in capital and the abovementioned CoCos[156], which shall increase the equity base of a bank by converting debt into equity. In the case of bail-in capital the national regulation authority decides in specific situations that (some part of) banks´ debt will be converted into equity. CoCos contain an automatic mechanism that converts the CoCos into equity.

Up to now it is unclear which of the abovementioned proposals will become law and whether there will be different national rules for bank resolution or a unified international or at least European framework. In this situation it is also not possible to make any estimates of the possible future benefits and costs of the existing or planned bank resolution procedures.[157]

[156] See chapter 2.9 of this study.
[157] To the best of our knowledge there are no publications on quantitative estimates of the benefits and/or costs of these bank resolution procedures.

2.11. Changes to accounting rules

KEY FINDINGS

- Replacement of IAS 9 by IFRS 39 aims to reduce complexity and align financial reporting with banks' risk management processes. IFRS 9 could affect regulatory capital and financial ratios.
- The proposals on hedge accounting should allow for a better link between an entity's risk management strategy, the rationale for hedging and the impact of hedging on financial statements.
- Loan-loss provisions according to expected loss models could help to recognise losses early in the economic cycle.
- Guidance on how to measure fair value may change the amounts recognised by entities, which in turn could have an impact on financial ratios.

International accounting standards are not developed by European institutions. Rather International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles (US GAAP) are set by non-profit private sector organisations - the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB), respectively. IFRS are transposed into EU law through comitology and have to be applied by listed European companies. Since this report focuses on the EU, mainly actions by the IASB will be analysed.

2.11.1. Impact of changes to financial instruments accounting standard

IASB is currently replacing IAS 39 with the new standard IFRS 9 on financial instruments to reduce the complexity, addressing their classification and measurement, impairment and hedge accounting. The new standard also incorporates the G-20's demand to consider the liquidity of financial instruments[158] and should in principle also make the only existing EU carve out in IAS 39 concerning the fair value option (resolved in 2005) and hedge accounting redundant. While the main objective of the replacement process is to improve financial statements' decision usefulness for users, some of the changes can have further effects: The amendments in classification and measurement of financial assets aim at reducing volatility in profit and loss,[159] which potentially has related effects on tax and regulatory requirements. The proposals on hedge accounting allow for a better link between an entity's risk management strategy, the rationale for hedging and the impact of hedging on financial statements, a goal the EU already aimed at when amending the standard in the endorsement process.[160] This is of particular importance because the G-20's commitment to require central counterparty clearing for OTC derivatives calls for higher standardisation in OTC contracts. Since the old standard on hedge accounting requires a high degree of hedge effectiveness, the use of standardised OTC derivatives can lead to the denial of the hedge

[158] The classification in IFRS 9 is based on an assessment of the way in which the instrument is managed (the entity's business model). Simple loans, for example, will be measured at amortised cost whereas more complex financial instruments will be measured at fair value.

[159] This reduction of volatility in profit and loss can be achieved by reporting changes in own credit risk in other comprehensive income instead of directly affecting profit and loss.

[160] See European Commission (2004).

accounting of the positions.[161] Therefore, banks and financial institutions will benefit from the new proposal, because hedge effectiveness testing will be much simpler and better linked to an entity's risk management strategy, the rationale for hedging and the impact.[162] The standard on impairment will be changed from an incurred losses approach, which has led to losses having been recognised late in the economic cycle, to an expected loss approach. The expected loss model has the potential to provide more forward-looking provisions. One of the main criticisms of the existing impairment model highlighted during the financial crisis is that losses were only recognised after an observable 'trigger' event had occurred. Expected loss models, on the contrary, could take into account historical experience and future expectations. According to the ZEW survey, the largest group of experts (44%) predict the new standard on impairment to improve the stability of the banking sector. On the opposite, 26% of experts expect impairments according to the expected loss model to destabilise the banking sector. Although this percentage is much smaller, it still indicates uncertainty on the outcome of the introduction of a new standard. A final impact assessment will only be possible after the new standard has been issued.[163]

Overall, standard setting in the area of financial instruments is expected to be welcomed by banks, since a consistent pattern of linking accounting to an entity's business model and risk management processes is emerging. This allows management to align internal risk management and financial reporting.[164] The amended standards may also have regulatory implications for banks, as they will impact on retained earnings, which is a key component of Tier 1 capital in Basel III. Furthermore, the amended fair value measurement may directly affect financial ratios, loan covenants, and analyst expectations.[165]

2.11.2. Impact of redefinition of off-balance sheet exposures

IASB undertook a review of the existing standards and found that the existing derecognition requirements work well and should not be modified, while the definition identifying which entities a company controls (consolidation) was tightened so that entities account for all other entities subject to them and disclosure requirements for entities that remain off balance sheet were improved.[166] The opinion of industry experts is rather cautious, expressing concerns that the definition of control is very broad and could lead to challenges in operability of the standard and its consistent application.[167] Concerns are also expressed about the increased volume of disclosure requirements.

[161] The current standard requires on-going quantitative effectiveness tests to attest hedging relationships. If the value of the hedged position moves out of a corridor of 80%-125% hedge effectiveness and therefore the hedging relationship is rejected.

[162] See Ernst & Young (2010).

[163] Annex 4 provides an overview of financial crisis related measures adopted by the IASB. The Basel Committee developed an approach which has the potential to reduce the complexity of the IASB's current approach. See: http://bis.org/bcbs/commentletters/iasb32.pdf and http://www.bis.org/bcbs/commentletters/iasb27.pdf.

[164] See KPMG (2011a).

[165] For an overview of an impact assessment of proposed accounting change on financial statements see PwC (2010), p. 37.

[166] While investment entities are currently required to consolidate entities that they control, under the new standards they would no longer consolidate investments in entities that they control but would instead measure investments at fair value, with changes in fair value recognised in profit or loss.

[167] See Ernst & Young (2010).

2.11.3. Impact of convergence between IFRS and US GAAP

IASB and FASB reinforced their efforts to increase convergence towards a single set of global accounting standards, which has been pursued since 2002.[168] One important example for the recent convergence process is the standard on offsetting of financial assets and liabilities where US GAAP will be tightened in order to achieve comparability to IFRS. Additionally, the US Securities and Exchange Commission (SEC) works towards a determination whether to incorporate IFRS into the financial reporting system for US issuers.[169] However, convergence potential is limited since the IASB confirmed a 'mixed measurement model'[170] during the replacement process of the standard on financial instruments, while the FASB is determined to move towards a full fair value measurement of all financial instruments.[171] By converging and improving their accounting standards the boards aim to satisfy the need for globally comparable financial information.[172] This is of particular importance since accounting standards affect the components of a company's regulatory capital, risk weighted assets and capital ratios.[173]

2.11.4. Impact of fair value accounting

Another project of the IASB concerns the use of fair value accounting. IASB is consolidating information on how to measure fair value in a single standard to reduce complexity. Although the conditions under which existing standards require or permit fair value are not altered, industry experts suspect that the guidance on how to measure fair value may change the amounts recognised by entities. This could have an impact on regulatory capital, financial ratios, and analyst expectations.[174] Concerning the impact of fair value reporting, the largest group (42%) of financial experts surveyed by ZEW do not expect any changes. However, the picture is not clear cut, since significant fractions of analysts also expect negative or positive effects with the corresponding percentages amounting to 24% and 34% respectively.[175] The results from academic literature[176] lead to a more unanimous appraisal: the studies fail to provide evidence that fair value accounting exacerbated the recent financial crisis. On the contrary, it seems that the effect of fair value accounting on banks' regulatory capital was rather small. More generally, it is stated that while weaknesses in fair value accounting methods could introduce procyclicality in bank balance sheets it is still the preferred accounting framework for financial institutions.[177]

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[168] In 2002 FASB and IASB issued the Norwalk Agreement committing to pursue compatibility of accounting frameworks and co-ordination in setting up new standards (ack acknowledged in a MoU 2006, updated 2008).

[169] See SEC (2011). While foreign private issuers in the US have already been allowed to apply IFRS for financial reporting for ten years, the SEC estimates that even after completion of the convergence process of IFRS and US GAAP there would be a four- to five-year transition period such that if the SEC determined in 2012 "to incorporate IFRS into the U.S. financial reporting system, the first time that U.S. companies would report under such a system would be no earlier than" 2016. See SEC (2010).

[170] Financial instruments can be measured at amortised cost and fair value depending on the business model.

[171] See Tumpel-Gugerell (2010). However, in the case of loans FASB standards were aligned to IFRS 9 since they include an amortised cost category for some financial assets.

[172] See FASB and IASB (2009).

[173] For a comprehensive overview for the interplay between the proposed changes to accounting standards and their impact on Basel III capital calculations please refer to Annex 9.

[174] See Ernst & Young (2010). The impact could, for example, arise from guidance determining how to measure fair value when a market becomes less active.

[175] For detailed results please refer to Annex 1.

[176] See e.g. Laux and Leuz (2010), Badertscher et al. (2011), Amel-Zadeh and Meeks (2011).

[177] See Novoa et al. (2009). In their paper the authors also provide options surrounding the application of fair value accounting to mitigate procyclicality.

3. JOINT IMPACT ASSESSMENT

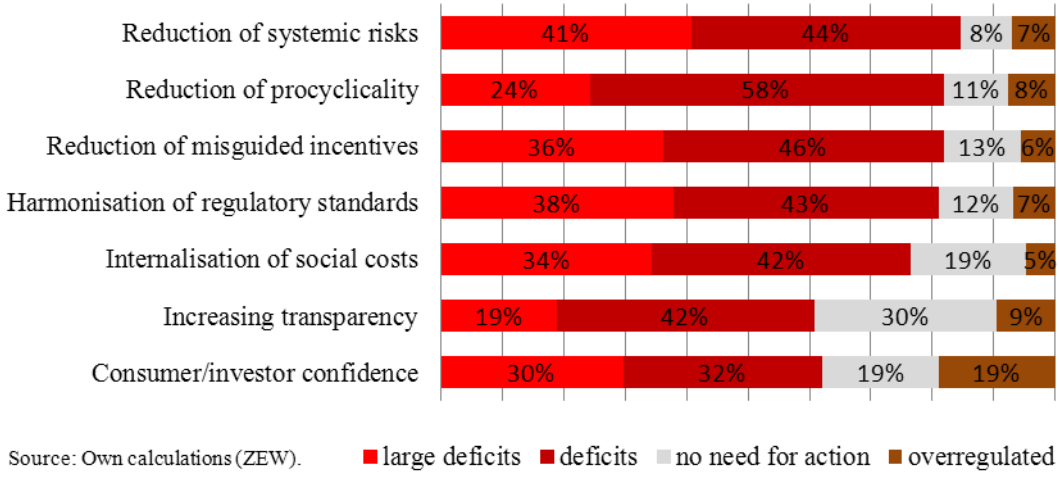
Taking into account the individual measures discussed in the preceding chapter, we will attempt to provide a joint impact assessment of the measures altogether. The heterogeneity of the included measures poses however a considerable challenge. Some measures have already been officially proposed, while others have so far only finished the consultation phase.[178] Bank taxation and bank resolution procedures are taken into account on a national level, whereas accounting standards are internationally valid, but are not initially proposed by national or European institutions. To allow for a joint assessment of all measures, objectives and potential benefits need to be determined. Then the appropriateness of the measures to collectively achieve these objectives can be evaluated.

We consolidate the objectives into six abstract categories. These are:

(1) reduction of procyclicality,
(2) reduction of misguided incentives,
(3) creation of a level playing field,
(4) internalisation of social costs,
(5) increasing transparency and
(6) increasing consumer/investor confidence.

Each of the listed objectives contributes to overall financial stability, i.e. reduces systemic risks. The necessity for regulation is supported by the survey conducted by the ZEW.[179] Figure 2 shows that when asked to evaluate the state of currently effective regulation, 85% of respondents feel that not enough is being done to reduce systemic risks. Furthermore, a majority of respondents perceives deficits in regulation for each of the six categories. Thus, there seems to be sufficient room for improving regulation. However, not all regulatory proposals are deemed to have a positive impact on each of the listed categories. Some proposed measures accept a trade-off between beneficial and detrimental impacts on distinct categories, while others may have unintended negative side effects.

Figure 2: ZEW Survey – Answers to the question: What is your assessment of the current state of implemented bank regulation with regard to the following stability objectives?



Source: Own calculations (ZEW).

[178] These include CRA and MiFID.

[179] See Annex 1 for a summary of the findings of the survey.

The joint impact assessment provided in this study is of a qualitative rather than a quantitative nature. This is due to several reasons. Firstly, quantitative assessments are only available for some of the considered measures. Additionally, it seems methodologically problematic to aggregate individual quantitative impacts into a joint impact assessment. Do costs and benefits simply add up or are nonlinear interrelations essential in order to quantitatively assess their joint impact? Furthermore, because the monetary impact of certain measures is likely to vary strongly between Member States and different banks, a meaningful quantitative impact assessment would probably need to be carried out on the level of Member States and/or banks. The most important reason for proceeding in a qualitative way is the practical difficulty of quantifying benefits, which could lead to an assessment focused too strongly on the cost-side of regulation. How could, for example, the monetary benefit of a reduction of procyclicality or the creation of a level playing field be measured? Indirect or unintended costs of regulation, which comprises the possible negative effects of the discussed measures on stability, are also difficult to quantify.

In order to provide a good overview of what the joint impact of all discussed regulatory measures is expected to be, we proceed as follows:

1. A comprehensive assessment of the measures' impact on the joint stability objectives will be given. This assessment is based on the findings from the individual impact assessments derived in Chapter 2.

2. An aggregation of individual impacts into impact-ranges will reveal where regulation is expected to be especially challenging.

3. In the third part of this chapter likely non-linear interactions between measures will be indicated. It will become clear where measures are expected to have an exacerbating or dampening effect on each other.

4. Finally, the impact of the regulatory initiatives on the real economy will be addressed. We will thereby focus on the measures' potential to lead to a reduction of banks' credit supply to companies.

3.1. Impact on joint stability objectives

To give a clearer qualitative impression of how a measure may impact a specific benefit/objective, an **evaluation scale ranging from -2 to +2** will be employed. All explanations and assessments are based on the analysis of the literature given in the respective parts of Chapter 2. A value of -2 (+2) indicates that a measure is expected to have a substantial negative (positive) impact on achieving the considered objective, while for -1 (+1) the negative (positive) impact is deemed to be moderate. The expected impact of a specific measure on a specific objective may also be evaluated in terms of a range (e.g. +1 to +2). A range is suggested when there are alternative measures with distinct expected impacts currently being discussed, a measure comprises several subcomponents whose respective impacts on stability is assessed differently, or the expected impact of a specific measure is highly uncertain. The matrix presented in Figure 3 provides an overview of the impact and its intenseness the measures considered for this study are expected to have. If an element is not shaded, it is expected that the corresponding measure does not affect the corresponding objective. In the following, all shaded elements contained in the matrix are briefly explained.

Figure 3: Contribution of different measures to regulatory objectives (impact-matrix)

	Measure/ Objective	CRD IV	OTC Derivatives	CRA	DGS	Short Sales	MiFiD	ICS	Taxes / Bank Levies	SIFIs Capital Requirements	Bank Resolution	Accounting Standards
Financial Stability / Reduction of Systemic Risks	Reduction of procyclicality	+1 to +2	+2	-2 to +2	0	-2 to +1	-1 to +1			+1 to +2		+1
	Reduction of misguided incentives	+1		-1 to +2	+1	-1		0		+1 to +2	+1 to +2	
	Creation of level playing fields	-1 to +1	0 to +1	0	-1 to +1	+1	+1	+1	-2	+1 to +2	-2 to +1	+1
	Internalisa-tion of social costs	+1	+1 to +2		+1 to +2				+1	+1 to +2	+1 to +2	
	Increasing transparency	+1	+2			+1	+1 to +2					+1
	Increasing consumer confidence				+2			0 to +1				

Source: Own calculations (ZEW). The evaluation scale ranges from -2 (substantial negative) to +2 (substantial positive impact on achieving the considered objective) based on literature analysis as described in chapter 2.

3.1.1. Reduction of procyclicality

The recent financial crisis has demonstrated the devastating effects of procyclicality. Institutions that had experienced losses due to the bursting of the housing bubble in the US were in need of liquidity. Stressed financing conditions, e.g. on the interbank market, made it difficult and costly to obtain the necessary liquidity. Some institutions had to sell illiquid assets at fire-sale prices. This led to a general decline of asset prices with a detrimental effect on balance sheets, which further limited financing opportunities. Whereas an increased use of leverage has the potential to inflate asset prices, deleveraging attempts in the wake of financial turmoil lead to adverse effects. The ensuing loss spirals amplify the downturn.[180]

In the following, procyclicality does not only refer to amplifications of the business cycle, but also to any mechanism amplifying regular price swings on financial markets. I.e. price movements due to changes in fundamentals will be considered as being procyclical.

- **CRD IV** will significantly reduce the procyclicality induced by the current banking regulation. This is mainly caused by the capital-conservation buffer and the counter-cyclical capital buffer. The increase of the core tier 1 ratio as well as the additional liquidity requirements will reduce the severity of potential future financial crises and will decrease the likelihood of negative spillover effects within the financial sector. **(impact = +1 to +2)**
- Requiring the clearing of **OTC derivatives** via central counterparties (CCPs) can decrease credit risk by multilateral netting of contracts and thereby reduce procyclicality. Although CCPs accumulate credit risks and will therefore become systemically important institutions their default is less likely compared to a single financial institution due to the risk management tools required by regulation: besides the margin requirements, CCPs can resort to regulatory savings in a default

[180] For a more detailed account of the amplification mechanisms working during the 2007/2009 financial crisis, see e.g. Brunnermeier (2009).

fund and the mutualisation of losses among clearing participants should one member default. Reporting of all derivative transactions to TRs (trade repositories) can circumvent mistrust between trading parties, which arose during the crisis due to the lack of knowledge about the distribution of critical credit exposures. This way a drying up of liquidity in the OTC market can be mitigated. **(impact=+2)**

- Considering **CRAs**, overreliance can be pinpointed as being the most prevalent driver of procyclicality, as many market participants react simultaneously in response to rating announcements. Reducing reliance by eliminating references to credit ratings from regulation is thus expected to have a considerable positive impact. However, replacing references with inferior default risk models can lead to even more pronounced procyclical behaviour. Furthermore the persistence of credit ratings induced by rating "through-the-cycle" and other smoothing techniques can induce "cliff-effects" during severe financial turbulences. This can painfully exacerbate downturns as market participants react to drastic downgrades by CRAs. On the other hand, less persistent indicators of credit default risks can lead to frequent and costly transactions. The overall impact of changes in CRA regulation may thus vary substantially, depending on the specifications of future CRA regulation. **(impact=-2 to +2)**
- **DGS** contribute to a reduction of procyclicality by increasing depositor confidence in times of financial stress and thereby avoiding bank runs. The amount of eligible deposits and the coverage level implied by the current legislative proposal will make bank runs less probable. However, since DGS had already been in place prior to the recent financial crisis, the additional effect on reducing procyclicality by a further containment of bank runs will most probably be minor. On the opposite, more pronounced deposit guarantee has the ability of increasing moral hazard. Higher risk exposure has a procyclical effect as it is likely to produce higher yields in upswings and larger losses in downturns. The increase of coverage from a minimum of EUR 20 000 to EUR 100 000 may have a negative effect on moral hazard. An existing strong institutional environment in the European Union as well as risk-based contributions to DGS, if sensibly designed, can conceivably offset this effect. Overall, it is expected that the impact of the currently proposed DGS legislation on procyclicality will be negligible. **(impact=0)**
- **Short selling and CDS** trading can have procyclical effects by exacerbating downturns through price spirals. A very short-term ban on short selling, a so-called circuit breaker, has the potential to interrupt such spirals. In some cases, however, the very short effectiveness of circuit breakers may only postpone on-going price spirals. Longer temporary bans on short selling are thus also considered by the Commission's regulatory proposal. Empirical evidence shows that such bans can have detrimental effects on liquidity, which can lead to larger abrupt price changes. Furthermore, the envisaged ban on naked short selling and naked CDS trades are considered to have a negative effect on liquidity and informational efficiency without providing much benefit. The overall impact of the proposed measures is thus viewed rather negative. **(impact=-2 to +1)**
- The impact of **MiFID** on procyclicality is difficult to assess. Fragmentation and pre-trade transparency issues have the potential of improving as well as deteriorating market quality. Empirical studies indicate, market fragmentation induced by MiFID has increased global liquidity, which makes price swings less pronounced. On the other hand, an increasing proportion of trading is shifting into so-called dark pools with no pre-trade transparency. It is questionable if this shift is large enough to have a detrimental effect on liquidity. Efforts to increase pre-trade transparency

could have a positive impact on liquidity; however, they could also lead to a larger market impact of trades, i.e. more pronounced price-swings. **(impact=-1 to +1)**

- Additional **capital requirements for SIFIs** will have a positive influence on the reduction of procyclical effects on the business cycle of the current bank regulation. This positive effect would be particularly strong if the additional capital had to be held in the form of an additional capital conservation buffer. But the mere increase of minimum capital requirements will also have an effect in this direction as this reduces the possible maximum leverage of the SIFIs. **(impact=+1 to +2)**
- **Accounting standards** for loan loss provisioning, while not set to address procyclicality, can have a first-order impact on it. The International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) have issued exposure drafts for expected loss provisioning approaches that will facilitate a more forward-looking recognition of credit losses and thus help to dampen procyclicality. Although fair value accounting has often been criticised for having aggravated procyclicality during the financial crisis this negative effect has not been confirmed in recent analyses. **(impact=+1)**

3.1.2. Reduction of misguided incentives

The economy is a complex adaptive system, where participants (agents) act and react within a regulatory framework. Their dynamic interaction thereby shapes new circumstances which cause agents to constantly readjust their behaviour. Incentives may arise within this system which may seem optimal from an individual's point of view, but are factually detrimental for the system as a whole. For example, managers' remuneration schemes have often been criticised for creating incentives to boost short-term profit through excessive risk taking at the cost of overall stability. Besides having a direct effect on agents' behaviour, e.g. by increasing equity in order to meet capital requirements, regulation can also have an impact on incentives. Regulation which creates socially optimal incentives or reduces misguided incentives can be very effective. In the following, the impact of the discussed regulatory measures on incentives will be assessed.

- The overall leverage that banks are allowed to have will be reduced due to the higher capital requirements and the introduction of a leverage ratio of the **CRD IV** directive. This will limit the potential risk that can be incurred by banks. **(impact=+1)**
- A reduction of the reliance on ratings induced by explicit references in regulation can create higher incentives to provide good quality ratings. This is the case because **CRAs** would no longer encounter a virtually guaranteed market for their ratings. Demand for a rating by a specific CRA would be more directly correlated to its credibility. Empirical evidence however indicates that competition between rating agencies may create incentives to reduce the rating quality. Issuers, who pay for ratings, have the incentive to shop for the rating most favourable to them, while CRAs may be inclined to increase their market share by offering laxer ratings. A liability regime for CRAs could possibly offset the competition-induced deterioration of rating accuracy; it may however also reduce investors' due diligence as their investment risk is partially passed on to CRAs. Besides challenging practical issues, the implementation of a liability regime could thus result in further reliance on CRAs. In summary: considered changes to CRA regulation can reduce and create misguided incentives. **(impact=-1 to +2)**
- The employment of risk-based contributions to **DGS** will create incentives for prudential risk-taking. However, given that a specific risk-based contribution

mechanism is implemented, sophisticated institutions may find ways to game the mechanism. Possibly, further incentives are created to transfer risks to the shadow banking sector. It is thus not clear what overall impact risk-based contributions will have on the banking sector. Moreover, the substantial ex-post contributions by banks due in the wake of a bank's insolvency as envisaged in the Commission's legislative proposal to DGS, may unfold incentives to increase pressure on peers to act prudentially. If one bank fails, all banks attached to the same DGS must provide funds. Such a mechanism may prove to be rather beneficial. **(impact=+1)**

- In the recent past many concerns about the incentives associated with **short selling and CDS** trades have been voiced. It is certainly true that short positions and naked CDS can be motivated by misguided incentives, e.g. an interest in unstable markets. However, any attempts to reduce these incentives through banning uncovered short sales and naked CDS can have grave consequences. Empirical evidence suggests that bans disrupt the process of price discovery and create disorderly markets. A ban is thus deemed to reduce correct incentives (e.g. the correction of mispricing through the exploitation of arbitrage opportunities) more strongly than misguided incentives. **(impact=-1)**
- As certain risks are virtually insured, **ICS** have the potential to reduce customer monitoring of investment firms. This may create incentives for investment firms to engage in moral hazard activities. The currently proposed amendment of the ICS Directive is, however, unlikely to significantly impact monitoring or moral hazard incentives. **(impact=0)**
- Additional **capital requirements for SIFIs** will reduce the possible leverage of these banks and therefore reduce the maximum risk of their business strategies. This will reduce the probability and severity of future financial crises. **(impact=+1 to +2)**
- **Bank resolution** rules and procedures will increase that part of future losses that has to be borne by shareholders and debt holders. Thus the incentives increase to limit or even reduce the business risk of financial institutions. **(impact=+1 to +2)**

3.1.3. Creation of level playing fields

The establishment of a harmonised regulation of financial markets in the EU and its conflict with the concept of mutual recognition of different supervisory authorities has been a long-lasting argument in the process of the creation of the EU Single Market. In recent years, legislation has shifted away from mutual recognition with minimal harmonisation[181] towards a more harmonised regulatory framework for financial institutions, as outlined in the Financial Services Action Plan[182] and confirmed in the Lisbon Agenda.[183] The reasons for this change were twofold. First, the ideological aim of creating a close political union implies a closer economic integration.[184] Second, the problems arising as a result of different and sometimes competing regulations rendered the shortcomings of national regulation more obvious than before. Moreover, a consistent regulatory environment limits regulatory arbitrage by creating a 'level playing field' with little or no difference between regulators in

[181] See European Commission (1985) white paper *Completing the Internal Market;* Single European Act (1986); Davies and Green (2008).

[182] See European Commission (1999), Financial Services Action Plan.

[183] See Lisbon Agenda (2000).

[184] See Davies and Green (2008).

different Member States, thus increasing efficiency and preventing a regulatory 'race to the bottom'.

In spite of this regulatory convergence, the European financial market is not fully harmonised.[185] In this context, many of the measures discussed in this study attempt to further harmonise financial regulation.

- The **CRD IV** directive will level the playing field regarding banking regulation within the European Union. The new Basel III accord is in principle a worldwide framework for banking regulation. Whether the global playing field will be levelled depends on the answers to two questions: (1) Will the regulatory rules be applied equally across all countries? (2) Will there be a significant shift of banking activity from banks to the shadow-banking sector? It is currently too early to answer these two questions and therefore our assessment of the impact of CRD IV on the objective 'Creation of level playing fields' is -1 in the worst case and +1 in the best case. **(impact=-1 to +1)**
- When introducing regulation on CCP clearing of eligible **OTC derivatives** and on reporting of all OTC derivative trades to TRs, it is important to avoid regulatory arbitrage. Since the G-20 committed to introducing these requirements by the end of 2012 and regulation proposals in the EU and the US are broadly comparable in their scope, the measure leads to improvements in the creation of level playing fields. However, countries that are not part of the G-20 could try to attract OTC derivatives business by applying laxer rules. This could have a negative impact on EU competitiveness and lead to regulatory arbitrage. **(impact = +0 to +1)**
- **CRAs** are already subjected to a European regulation, which leaves no room for diverging transpositions by Member States. For this reason it is not to be expected that the currently discussed prospective amendments to CRA regulation will have any significant additional impact on the creation of level playing fields. **(impact=0)**
- Providing a harmonised framework for **DGS** is an important objective of the Commission's current proposal for DGS regulation. Vastly differing provisions of deposit insurance across Member States currently observable will eventually disappear, limiting the opportunities to pursue regulatory arbitrage. The impact of such harmonisation is judged to be positive. Potentially, problems can occur during the transition phase. Depending on the guarantee scheme currently implemented in banks' host countries, impacts on individual banks are expected to differ substantially. Differing adaption costs can lead to distortions of competition in the transition phase. Thus, while in the short-run the impact of DGS harmonisation can be negative, in the long-run harmonisation of DGS will be beneficial. **(impact=-1 to +1)**
- Harmonisation of regulation on **short sales and CDS** is thought to exhibit a positive impact on the creation of level playing fields. The unilateral adoption of bans on short sales and CDS by some Member States in the wake of the financial crisis has created opportunities for regulatory arbitrage. The current regulatory proposal will reduce such opportunities. **(impact=+1)**
- Harmonisation of **MiFID** transposition has been considered by the European Commission in its consultation paper. However, the greatest deficit with regard to the creation of level playing fields in a MiFID context concerns reporting standards. Trading venues displaying a similar operating model should be subjected to equal

[185] See Davies and Green (2008).

reporting standards. Incorporating OTC trades into the MiFID framework will help create level playing fields. **(impact=+1)**

- The Commission's aim to harmonise **ICS** in the European Union will have a positive impact on the creation of level playing fields. Whereas present compensation schemes differ largely between Member States, much less room for discretion is granted by the current regulatory proposal. **(impact=+1)**
- Currently **bank taxes** exist in Austria, Cyprus, France, Germany, Hungary, Iceland, Portugal, Sweden, and the UK. In the US a bank levy is still under discussion. These bank taxes are different regarding, for example, the tax base, the tax rate, the definition of exclusions, caps or floors, as well as the use of the tax revenues. In addition, there are currently no international initiatives to harmonise these bank levies. Therefore, at present, these bank levies are clearly an obstacle to a level playing field. A level playing field could instead be created by introducing a global bank tax, e.g. a global financial activity tax, but this is not a realistic expectation for the time being. **(impact=-2)**
- As the additional **capital requirements for SIFIs** which are currently discussed shall be applied globally, they will create a level playing field for SIFIs regarding their equal treatment in a cross-country perspective. But there still are potential national solutions which would lead to cross-country differences and, consequently, to biases in international competition in the banking sector. In contrast, the differences between the treatment of SIFIs and the other banks are part of the solution and will reduce existing incentives towards creating still larger banks. **(impact=+1 to +2)**
- Until today only few countries have introduced specific rules and procedures for bank restructuring and **bank resolution** (i.e. Germany, USA). In the UK a new bank resolution law is under discussion. Thus, there exists no level playing field regarding this topic. However, on the European and the global level proposals for new frameworks of bank resolution are in preparation. These will (hopefully) lead to a level playing field. **(impact=-2 to +1)**
- Improvements in converging **accounting standards** are being made in four main areas: Both standard setters recently decided to restrict the use of fair value in relation to the lending activities of financial intermediaries. Both IFRS 9 and FASB standards include an amortised cost category for financial assets such as loans. Concerning the impairment of financial assets the IASB and FASB jointly issued an exposure draft proposing a converged expected loss approach. Convergence is also on its way for the standards on offsetting/netting of financial assets and liabilities. This is of particular importance since differences in these standards can result in significant differences in the total assets of large financial institutions. Further enhancements to IASB and FASB fair value measurement standards will align requirements about how to measure fair value, including when markets become less active. **(impact=+1)**

3.1.4. Internalisation of social costs

The risk of failure and the opportunity to succeed are two elementary principles of any market-based economy. Investors and entrepreneurs who seek opportunities will typically also bear the costs when their ventures fail. This mechanism is essential to the evolutionary nature of the economy, where unsuccessful entities disappear and more successful ones survive. However, different standards seem to apply for banks as well as other big financial institutions. In recent years, extensive efforts by public authorities worldwide have been

undertaken to keep ailing financial institutions up and running. The necessity of these efforts is reflected in the dire consequences of the Lehman Brothers collapse in September 2008. The reason for bailing out financial institutions, i.e. for a collective bearing of failure costs, is that they usually depend on each other. In the worst case, the failure of one bank can lead to the collapse of the entire system. Some of the regulatory measures discussed in this study contribute to the internalisation of social costs. By mandating ex-ante payments from financial institutions it is aspired to shift the cost of failure from society (the taxpayer) back to the financial sector.

- The **CRD IV** directive will lead to an increased internalisation of social costs due to the higher capital requirements and the new rules regarding minimum liquidity. This will lead to a higher capability of banks to absorb private costs in the case of a bank failure. **(impact=+1)**
- Forcing eligible **OTC derivatives** contracts to be cleared via CCPs allows installing different risk management tools. In particular establishing a default fund enables the mutualisation of losses among clearing participants should one member default. Furthermore, CCPs can require their participants to post additional contributions to the guarantee fund should one member default. **(impact = +1 to +2)**
- The establishment of explicit and prefunded **DGS** will help to internalise the costs of bank failures. Whereas in implicit insurance regimes the taxpayer exclusively bears the burden of depositor payouts, the banks themselves provide the funding for explicit deposit insurance. However, when a large bank or a group of smaller banks becomes insolvent, the means of the explicit DGS will not suffice and the taxpayer will have to intervene. DGS can therefore only provide a partial internalisation of social costs. A risk-based contribution mechanism can furthermore help to distribute potential bankruptcy costs more appropriately throughout the banking sector. Those institutions willing to assume greater risks must compensate their behaviour through greater DGS contributions. As indicated in Chapter 2.4.1, designing a sensible risk-based contribution mechanism, however, is likely to be challenging. **(impact=+1 to +2)**
- The primary purpose of **bank taxes** is to increase tax revenues with the aim of financing partly public rescue packages for use in future financial crises. Currently, with the exception of Hungary, the (expected) tax revenues are small in absolute terms and relative to GDP. The contribution to the internalisation of possible future social costs of financial crises is thus still rather limited. A major contribution in this respect could be made by introducing a global bank tax (financial transaction tax, financial activity tax). **(impact=+1)**
- Additional **capital requirements for SIFIs** will internalise (part of) the social costs of future public rescue packages for helping banks in financial crises. Shareholders and debt holders will have to bear a larger part of possible losses. Therefore they have additional incentives to reduce the risk of the business strategy of the bank. **(impact=+1 to +2)**
- The **resolution or restructuring of failed banks** instead of a public guarantee to rescue (almost) all banks will lead to the internalisation of a large part of the social costs of future financial crises. This should lead to an adjustment of the incentives of shareholders and debt holders towards a reduction of the riskiness of banks' strategies. **(impact=+1 to +2)**

3.1.5. Increasing transparency

The opaque nature of the financial system has contributed to the severity of the recent financial crisis. Mistrust between financial institutions was nurtured by a non-transparent entanglement of counterparty risk exposures, which dried up liquidity and led to the collapse of the interbank market in 2008. It is furthermore questionable if the US government would have permitted the bankruptcy of Lehman Brothers with complete knowledge of its network of liabilities. Undeniably, transparency is an important cornerstone to achieving greater financial stability. Financial oversight, stress testing and the identification of market abuse are just a few issues unfeasible without an advanced degree of transparency. Some measures discussed in this study aspire to increase transparency for the sake of more stability. Their impact will be discussed in the following.

- The **CRD IV** directive will to some extent increase transparency of the risk of financial institutions. One important step is the tightening of the capital requirements as, due to the higher ratio of core tier 1 capital, the whole capital structure will become much more homogeneous. Also additional disclosure requirements regarding, for instance, securitisation risks will improve transparency. **(impact = +1)**
- Requiring the reporting of all **OTC derivative** transactions to TRs will significantly improve transparency. Currently reporting is not mandatory and regulators are unable to gain a complete picture of risk on the balance sheet of a single institution nor is it possible to determine the interdependencies between the parties in the market. An obligatory report of all OTC transactions to TRs allows a central collection, storage and dissemination of information in a consistent fashion. Based on this information regulators will be able to accurately gauge the consequences of a default of a market participant and to take appropriate actions if a default occurs. **(impact = +2)**
- The proposed regulation on **short selling and CDS** envisages disclosure requirements for traders and venues. These should generally be viewed as being positive, as they can help to identify market abuse. Concerns about ensuing herding behaviour and decreasing liquidity are unlikely to offset the benefits of more transparency. **(impact = +1)**
- There are two types of transparency central to the **MiFID** framework: post- and pre-trade transparency. Current considerations include the publication of consolidated post-trade data, taking into account all trading venues. The provision of such consolidated data will surely not be free of cost; however, experience from the US, where such data is provided, suggests that benefits outweigh the costs. A positive impact on pre- and post-trade transparency and thus on market quality is also expected to emerge from incorporating further categories of trading venues (e.g. broker/dealer crossing networks) into the MiFID framework. Bringing some light into the OTC market, which accounts for approximately 40% of European turnover market share on market venues, is expected to have an overall positive impact. **(impact = +1 to +2)**
- Improving the decision-usefulness of financial statements for users is an explicit objective of many recent projects changing the **accounting standards** of the IASB: The Board aims to improve the amortised cost measurement, in particular the transparency of provisions for losses on loans and for the credit quality of financial assets. Furthermore, decision-usefulness of financial statements shall be improved for hedge accounting requirements. The project on derecognition of financial

instruments provides users with more information about an entity's exposure to the risks of transferred financial assets. **(impact=+1)**

3.1.6. Increasing consumer/investor confidence

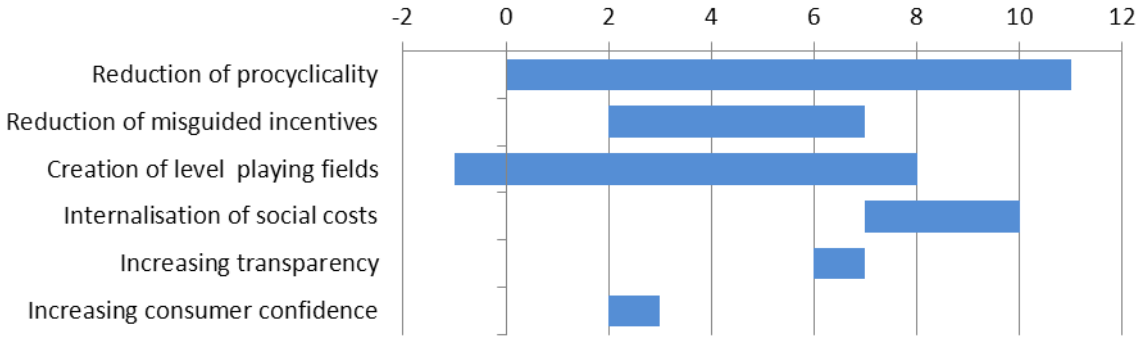
Consumer and investor confidence have an important effect on the state of the economy. If consumers are not confident they will be inclined to hoard their savings for potentially difficult times ahead; investors may refrain from investing in worthwhile projects. It is therefore no coincidence that consumer and investor confidence indexes, which provide a measure for confidence, are published on a regular basis in many countries. They are deemed to provide an early indication of an upcoming economic trend. Two of the regulatory measures discussed in this study will have a direct impact on consumer/investor confidence.

- Increasing the confidence of depositors is one of the central aims of the **DGS** legislative proposal. Taking the status quo as the point of origin, the proposed measures will predominantly have an impact on depositors previously not eligible for insurance, i.e. non-financial companies as well as deposits in non-EU currencies. Furthermore, it is expected that more clarity regarding cross-border payouts will have a positive effect on consumer confidence. **(impact=+2)**
- The amendment to the **ICS** Directive proposed by the European Commission is likely to have a positive impact on investor confidence. As compensation events are rare and losses tend to be small, the positive impact is expected to be small or negligible. **(impact=0 to +1)**

3.2. Joint impact ranges

The diagram in Figure 4 displays the impact ranges for the different stability objectives. The range is derived by summing the minimum and maximum expected impacts of each objective.[186] However, a specific range should not be automatically interpreted as the expected impact on the corresponding objective when jointly implementing all relevant measures. As mentioned in the introduction to this chapter, the impact of distinct measures cannot simply be added; their interrelation may be nonlinear. Chapter 3.3 will detail where these nonlinearities are to be expected.

Figure 4: Impact ranges when aggregating all measures by stability-objective



Source: ZEW.

[186] For example: the sum of minimum expected impacts for increasing consumer/investor confidence is 2+0=2, while the added maximum impacts equals 2+1=3 (see the impact matrix in Figure 3). The impact range for increasing consumer/investor confidence thus ranges from two to three.

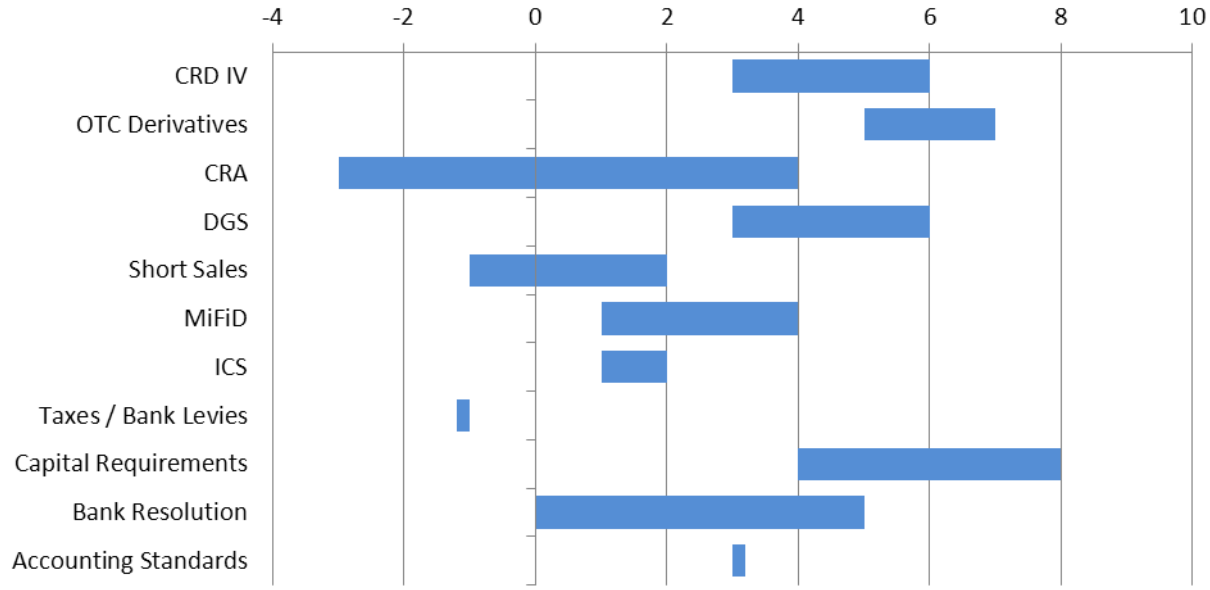
Nevertheless, Figure 4 allows for some important conclusions. To begin with, it is indicative of the inherent difficulty to effectively regulate the banking sector. For the first three objectives, namely reducing procyclicality, reducing misguided incentives and creating level playing fields, the range is quite large, which points out the uncertainty concerning the impact of regulation. For these three stability-objectives, the envisaged regulation even has the potential to produce a negative impact. Interestingly, most respondents to the ZEW survey, i.e. over 80%, see a deficit or large deficits in currently effective regulation with respect to the first three stability objectives (see Figure 2). It seems that the perceived deficits coincide with the impact ranges and therefore the difficulties of implementing efficient regulation for stability objectives. More specifically:

- The regulation of CRAs, short sales and CDS, as well as the suggested revision of MiFID can have both a beneficial and detrimental impact on procyclicality. According to the assessment above, it is unclear which impact will eventually prevail.
- A ban on naked short sales and CDS is deemed to reduce correct incentives (e.g. the correction of mispricing through the exploitation of arbitrage opportunities) more strongly than misguided incentives, while the impact of suggested CRA regulation on incentives is ambiguous.
- The most evident problem for the creation of level playing fields is unilateral action taken by Member States, especially in the fields of bank taxation and bank resolution procedures. Furthermore, the impact of CRD IV on levelling playing fields is unclear, whereas harmonised DGS legislation will have differing impacts on Member States in the short- and medium-term.

Furthermore, Figure 4 indicates that it might be easier to achieve the last three objectives, namely internalising social costs as well as increasing transparency and consumer/investor confidence. Here the impact ranges are considerably narrower. This points out that the relevant measures have a more direct impact on the last three objectives. Also relatively fewer measures have an effect on the last three objectives in comparison to the first three. This also reflects the view of ZEW survey respondents, who see significantly less need for regulatory action for the bottom three objectives (see Figure 2). In this regard, a further distinction can be made: while a relatively large share of the considered measures are likely to have an impact on transparency (five measures) and the internalisation of social costs (six measures), only two measures attempt to impact consumer/investor confidence. It can be seen in Figure 2 that almost 20% of the respondents to the ZEW survey find that the currently effective regulation is overly involved with the consumer/investor confidence objective and that there is not much need for additional regulation in this field. Less than 10% of respondents feel this way about any of the other objectives. Here it seems that the perception of survey respondents aligns with the envisaged goals of regulators.

It needs to be noted that some of the same measures that produce direct impacts on the last three objectives are responsible for ambiguous impacts on the first three objectives. In order to give an impression of which measures may be more challenging than others, the diagram in Figure 5 illustrates the impact range for each measure. Again, individual impact evaluations are simply added and thus Figure 5 should not be taken as an indication of a measure's overall expected impact.

Figure 5: Impact ranges of different regulatory measures



Source: ZEW.

It can be seen, however, that for the suggested regulation on CRAs, short sales and CDS as well as bank taxes and levies the minimum added impact is negative. This does not necessarily mean that the corresponding areas should not be subject to further regulation. The potentially negative impact should rather be regarded as an indication of possible challenges regarding the design of effective regulation. Here, it seems especially important to take into account potential negative impacts. Note also that the impact ranges are calculated without setting any priorities. Hence, the detrimental effect of a lacking European approach with respect to bank taxes and levies on the objective to harmonise European regulation, for example, offsets the positive impact such taxes and levies can have with regard to the internalisation of social costs. A different weighting of objectives would certainly lead to different results. Clearly defining priorities and taking into account possible areas of negative impact should thus be key considerations in the course of designing effective regulation. In this context, we recommend to be particularly diligent when considering the measures depicted in Figure 5, which either have a large impact-range and/or display a negative minimum impact. Both signs indicate a measure's potential to have detrimental effects on stability. In detail, those measures include: CRA, short sales and CDS, MiFID, bank resolution as well as bank taxes and levies.

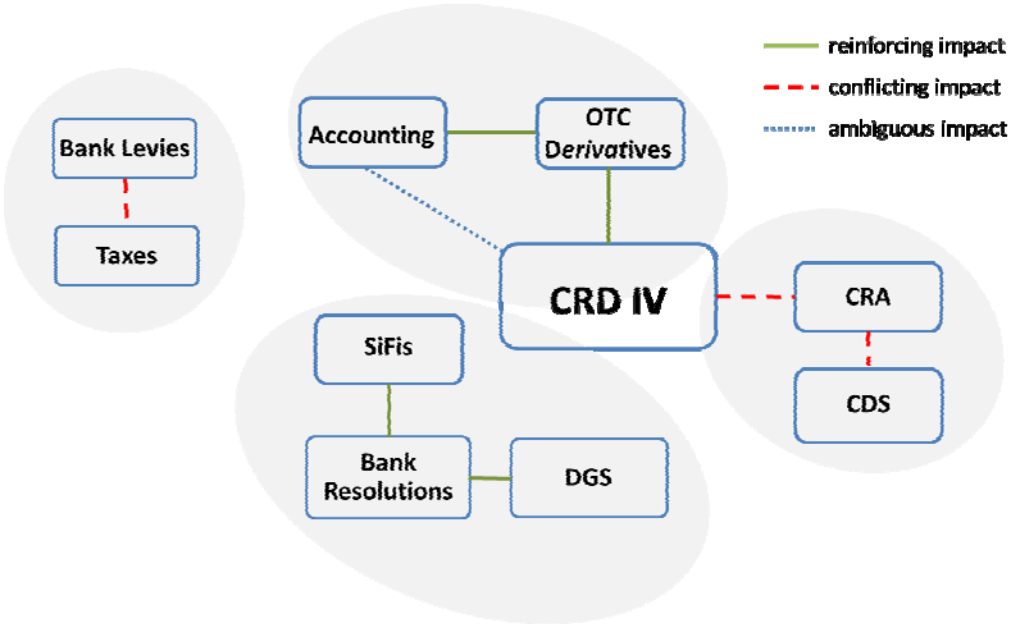
3.3. Impact interactions between measures

The following we will show how some measures could interact with each other. The combined implementation of certain measures is expected to have an effect which significantly differs from the effect implied by a mere addition of their individual impacts. Figure 6 illustrates the most relevant expected interactions. Every direct link between two measures indicates an interrelation between impacts: a green (red dashed) line between two measures implies a reinforcing (conflicting) interrelation; a blue dotted line suggests that while a significant non-additive relation is expected, it is still unclear whether it will be reinforcing or conflicting. A brief description of the interrelation represented by each link will be given below.

As stated before, the literature available for most of the measures discussed in this study does not allow for a quantification of the direct costs of regulation, i.e. the costs that will be incurred on banks. For this reason the descriptions of impact interactions between

measures given below focus on either the intended benefits (reinforcing interrelation) or unintended costs (conflicting interrelation) with regard to stability.[187] It should, however, be noted that costs on banks resulting from the combined implementation of proposed measures may also be a source of interaction between measures. Possibly, costs incurred on banks by taxes/levies, the creation of DGS and ICS, as well as regulation regarding OTC derivatives, short sales and CDS diminish the ability of institutions to increase equity in order to fulfil the new capital requirements.

Figure 6: Impact interactions between measures



Source: ZEW.

3.3.1. Accounting – CRD IV

The application of the new and amended standards may have regulatory implications for banks as their adoption will impact regulatory capital in the Basel requirements. Furthermore, the amended fair value measurement may directly affect financial ratios, loan covenants, and analyst expectations. Due to these complex and multiple interrelations between accounting standards and the Basel III framework, the benefits of the two measures can most probably not simply be added. The interplay between the measures should rather be observed closely. For an overview of how changes in different standards presumably impact measures covered by Basel III please refer to Annex 4, Table 6.

3.3.2. Accounting – Central clearing of OTC derivatives

The proposals on hedge accounting allow for a better link between an entity's risk management strategy, the rationale for hedging and the impact of hedging on financial statements. This is of particular importance since central counterparty clearing for OTC derivatives calls for higher standardisation in OTC contracts. Because the old standard on hedge accounting requires a high degree of hedge effectiveness, the use of standardised OTC derivatives can lead to the denial of the hedge accounting of the positions. The new proposal on hedge accounting will mitigate this potential drawback of centrally clearing standardised contracts because hedge effectiveness testing will be much simpler and better linked to an entity's risk management strategy, the rationale for hedging and the impact.

[187] The dimensions through which regulation can have an impact are illustrated in Figure 1.

3.3.3. CRD IV – Central clearing of OTC derivatives

The benefits from multilateral netting and counterparty credit risk management depend on a critical mass of contracts trading via CCPs. To induce this critical mass there will be stricter collateral requirements for derivatives still traded OTC according to the proposed regulation on derivatives as well as stricter capital requirements according to the Basel III framework. These proposals encourage banks to resort to CCPs for trading OTC derivatives contracts. The new capital requirements therefore increase the probability that central counterparty clearing will effectively mitigate credit risk.

3.3.4. CRD IV – CRA

It has been stated in Chapter 2.4.2 that the most common use for credit ratings by CRAs is for regulatory capital. In order to effectively reduce the reliance on CRAs it is crucial to lessen references to credit ratings for the purpose of determining capital requirements. A reduction of references to ratings in regulation is necessary in order to avoid providing a guaranteed market for credit ratings in which incentives to rate accurately suffer.

3.3.5. CRA – CDS

Reducing the reliance on the assessments of credit quality by CRAs in order to dampen procyclical behaviour, especially in times of financial distress, is consensually considered beneficial. The difficulty, however, lies in finding an appropriate replacement or supplementary indicator of credit quality which is both risk-sensitive and robust. In the Commission's public consultation paper on potential future regulation of credit rating agencies, credit default swap spreads are suggested as a possible regulatory indicator of credit risk. Banks and other institutions (including CRAs) already extensively use CDS spreads as indicators of credit risk. Their purported advantage over bond spreads or ratings is that they represent the market's assessment of credit quality more precisely and timely. The proposed ban on naked CDS transactions could, however, impair the liquidity of the CDS market by prohibiting CDS trading without possession of the underlying. A deterioration of the information value of spreads could make a reduction on CRA reliance more difficult.

3.3.6. Bank restructuring and resolution - additional capital requirements for SIFIs

The two measures aim at reducing the potential future social costs stemming from banks that are "too big to fail". On the one hand, additional capital requirements reduce the riskiness of the business strategy and increase the ability of SIFIs to bear losses. On the other hand, the possibility to restructure and close banks will increase the incentives of shareholders and debt holders to control and to limit banks' overall risk. Thus, the combined effects of both measures on the internalisation of social costs should be larger than just the sum of the single measures.

3.3.7. Bank restructuring and resolution – DGS

Both measures overlap and complement each other: bank restructuring and resolution deals with the loss absorption of shareholders, debt holders and depositors, whereas a DGS covers the guarantees of depositors. DGS should thus be part of a bank restructuring and resolution scheme. This improves the functioning of both measures and avoids potential conflicts. When a financial stabilisation contribution is part of the bank restructuring and resolution scheme and shall build up a restructuring fund, as is the case in Germany, the aims of this restructuring fund vis-a-vis the DGS should be clearly defined.

3.3.8. Financial transaction taxes - other bank levies

The taxes and levies related to the financial sector that are currently being discussed (Financial Transaction Tax (FTT), Financial Activity Tax (FAT), Financial Stability Contributions (FSCs)) are unlikely to be introduced together. This is because they altogether increase the tax burden for financial institutions as well as (private) investors. Although the incidence of these taxes is not yet clear a combination would certainly lead to a relatively large additional burden for these groups of market participants. Thus, we do not expect a combined introduction on an international level.

3.4. Impact of financial regulation on the credit supply to companies and the real economy

For most measures, regulators face a trade-off between economic growth and the stability of the financial sector. Most approaches to regulating the financial sector are likely to have an impact not only on banks but also on the real economy. This is because banks pass higher costs through to firms and clients in the form of higher borrowing costs as a result of more expensive regulatory requirements and compliance costs, thus impeding the performance of the economy as a whole. However, there are benefits arising from efficient regulation as well because of the reduced probability and cost of financial crises.

Quantifying the impact of regulation on the real economy is difficult, and attempts seem to restrict themselves to exploring the effects of changes in capital requirements. Clerc-Renaud et al.[188] come to the conclusion that the changes of the CRD IV will have a small negative impact on economic growth, estimating a 0.18% decrease in GDP growth per 1 percentage point increase in capital requirements in the short run and a negligible impact in the long run. Similarly, a recent study published by the OECD[189] estimates the cost of the Basel III accord to be a reduction in GDP growth between 0.05 and 0.15 percentage points for the US, Japan and the euro area. A study by the Financial Services Authority[190] investigates the effect of higher capital ratio requirements in the UK from 1996 to 2007 and their impact on the banks' balance sheets and lending behaviour to firms. The study finds that a 1 percentage point increase in capital requirements reduces lending by 1.2%. It argues that higher capital requirements lower the banks' optimal loan growth.

The results of our survey among financial experts[191], summarised in the bar diagram of Figure 7, are consistent with these studies, as higher expected costs correlate with fewer expected loans to companies. The diagram displays the average expected impact for selected measures on the costs for banks and compares them to the average expected negative impact on the credit supply to companies. The average expected impact is a relative measure. It is calculated by weighting the answers of respondents to the question of how the selected regulatory measures influence the costs for banks and their credit supply to companies. Thereby much lower, lower, neutral, higher and much higher is weighted with -2, -1, 0, 1 and 2, respectively. To calculate the average expected negative impact, each weight is multiplied by -1. The factor[192] shown on the right-hand side of the diagram implies the relation between increased costs for banks and the reduction of credit supply as perceived by ZEW survey respondents. For example, a factor of 0.5 implies that

[188] See Clerc-Renaud et al. (2011).

[189] See Slovik and Cournède (2011).

[190] See Francis and Osborne (2009).

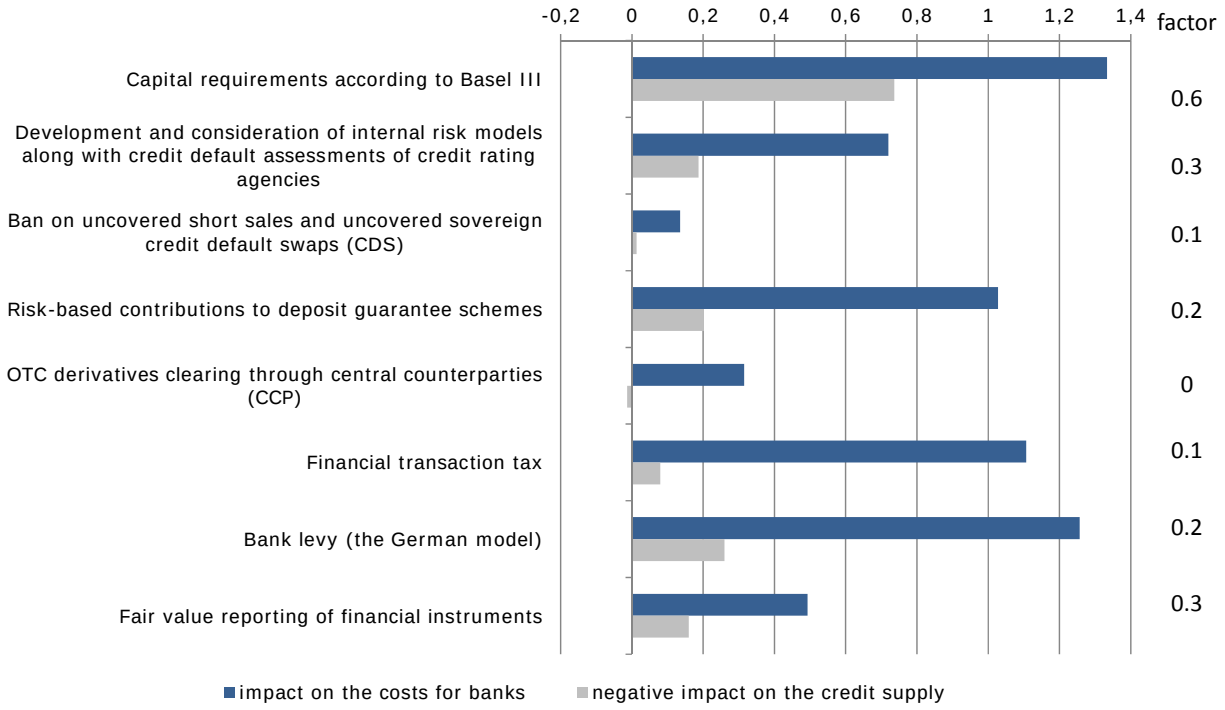
[191] See Annex 1.

[192] It is defined as the quotient of average expected impact on costs and average expected negative impact on credit supply.

an expected increase of bank costs by one unit results in an expected reduction of credit supply by half a unit.[193]

Figure 27 seems to suggest that the impact of higher costs for banks on the credit supply strongly depends on the specific measure generating these costs. The highest absolute and relative impact on credit supply is expected to result from higher capital requirements. On the other extreme, although respondents to the ZEW survey on average expect OTC clearing through CCPs to generate higher costs for banks, they also expect the supply of credit to rise slightly. This assessment may reflect the reduction of counterparty risk associated with OTC clearing through CCPs.

Figure 7: Impact of regulatory measures on the costs of banks and credit supply



Source: ZEW.

In conclusion, we expect the joint negative impact of the considered regulatory measures on growth to be acceptably low. We come to this conclusion by taking into account the academic literature cited above, which attributes a rather small impact on growth to higher capital requirements, and the answers of ZEW survey respondents, who regard this impact to be by far the highest in absolute and relative terms.

[193] This only represents a rough estimate conditional on the scaling applied in the survey.

4. CONCLUSION

In this study we have assessed the joint impact of a series of current regulatory initiatives. Due to the lack of quantitative assessments in the literature, the results of this study are of a predominantly qualitative nature. Keeping in mind the dimensions of costs and benefits illustrated in Figure 1, the study focuses on intended benefits of regulatory initiatives and indirect costs incurred by them, or in other words: their positive and negative impact on stability. Where feasible we have also taken into account the direct costs for banks arising from the regulatory measures under consideration.

The literature only provides limited qualitative and quantitative assessments of the impact of specific issues contained in the proposed and discussed measures. In Chapter 2 it has therefore often been necessary to infer the impact of discussed measures from relevant issues contained in the literature. Chapter 3 provided a joint impact assessment based on the literature and the inferences from it. In order to assess the heterogeneous mix of regulatory initiatives contained in this study, we have divided the overall goal of financial stability into the following six objectives: (1) reduction of procyclicality, (2) reduction of misguided incentives, (3) creation of a level playing field, (4) internalisation of social costs, (5) increasing transparency and (6) increasing consumer/investor confidence. Each measure's impact is evaluated along the lines of these objectives. The ZEW survey conducted for this study suggests that the current state of implemented regulation is deemed to be exceptionally insufficient with regard to the first three stability objectives. Over 80% of respondents perceive a deficit or large deficits in currently effective regulation with respect to the abovementioned stability objectives.

In accordance with this perceived deficit, our assessment shows that the impact of the entirety of regulatory efforts on the first three objectives is likely to be the most salient. However, the impact is also likely to be the most ambiguous. In this context we have indicated where the design of effective regulation may be particularly challenging: initiatives concerned with CRAs, short sales and CDS, MiFID, bank resolution as well as bank taxes and levies should be treated with particular care. We have also identified those combined implementations of regulatory measures that could lead to an effect which significantly differs from the effect implied by a mere addition of their respective impacts. Four pairs of measures are expected to have a reinforcing interrelation[194], three pairs a conflicting interrelation.[195] For one pair of measures the kind of interrelation[196] is still unclear.

Another important issue has been the joint impact of discussed regulatory measures on the real economy, in particular the impact on credit supply to companies. Since quantitative evidence does not suffice to fully enumerate the costs regulation incurs on banks, we have resorted to the findings of the ZEW survey and quantitative impact assessments of the CRD IV measure. Based on these findings we expect the joint negative impact of the considered regulatory measures on growth to be acceptably low.

In conclusion it can be said that the overall joint impact of the discussed measures will lead to an increase in financial stability.

[194] Accounting and OTC derivatives; OTC derivatives and CRD IV; capital requirements for SIFIs and bank resolutions; bank resolutions and DGS.

[195] CDS and CRA; CRA and CRD IV; bank levies and bank taxes.

[196] Accounting and CRD IV.

ANNEX 1: RESULTS OF THE SURVEY AMONG FINANCIAL EXPERTS

We have conducted a survey among financial experts in order to assess the impact of the policy proposals on financial regulation that are currently discussed in the European Parliament. The survey was carried out between 30 May and 20 June 2011 with 77 German financial experts completing the survey. Please refer to Annex 2 for the complete questionnaire.

Participants

The survey was distributed as a supplement to our monthly ZEW Financial Market Survey[197], which has been carried out on a monthly basis since December 1991. It reveals the German financial market's expectations on the development of six important international financial markets. 350 analysts from banks, insurance companies and large industrial corporations regularly take part in the survey. These analysts work in the respective companies' departments of finance, research, and macroeconomics, as well as in the departments of investment and securities. The survey consists of two parts: one fixed survey part[198] and special surveys on current issues. The experts' expectations on the future economic development in Germany serve as a basis to calculate the ZEW Indicator of Economic Sentiment. This leading indicator for the economic trend (ZEW Index) is followed closely by the public.

Questions on Financial Market Regulation

Given our aim of representing the opinions of experts in the financial sector, we have selected these particular questions in order to be able to capture the opinions of a rather diverse group of professionals who may not all be familiar with the minutiae of EU regulation. Therefore, we have picked the most important issues and simplified the questions to make it accessible and encourage responses[199]. Additionally, we have limited the size of the questionnaire to two pages to conform to the size of the ZEW Financial Market survey of which it was part.

We have divided the questionnaire into three parts. This allows us to focus on one aspect of changes in regulation at a time. First, we address the question of the necessity of additional regulation with respect to several aspects relevant to the stability of the financial market. Second, we assess the effects of the proposed regulatory measures on the aspects most relevant to the performance of the economy as a whole, i.e. the costs for banks and the credit supply to companies. Third, we ask the participants whether or not these measures achieve the aim of increasing the stability of the banking sector. The following section gives a short overview of the results for each question. Most of the results have also been described and interpreted in Chapter 2 of the main text.

[197] ZEW communicates the survey's results in the monthly "ZEW Financial Market Report".

[198] The analysts are asked about their expectations on a six-month horizon in specific areas: trend in economic activity, inflation rate, short-term and long-term interest rates, share prices and exchange rates. The financial markets concerned are those of Germany, the United States, Japan, the United Kingdom, France, Italy, and the euro area. Furthermore, financial market experts are to assess the profit situation of 13 German industry branches.

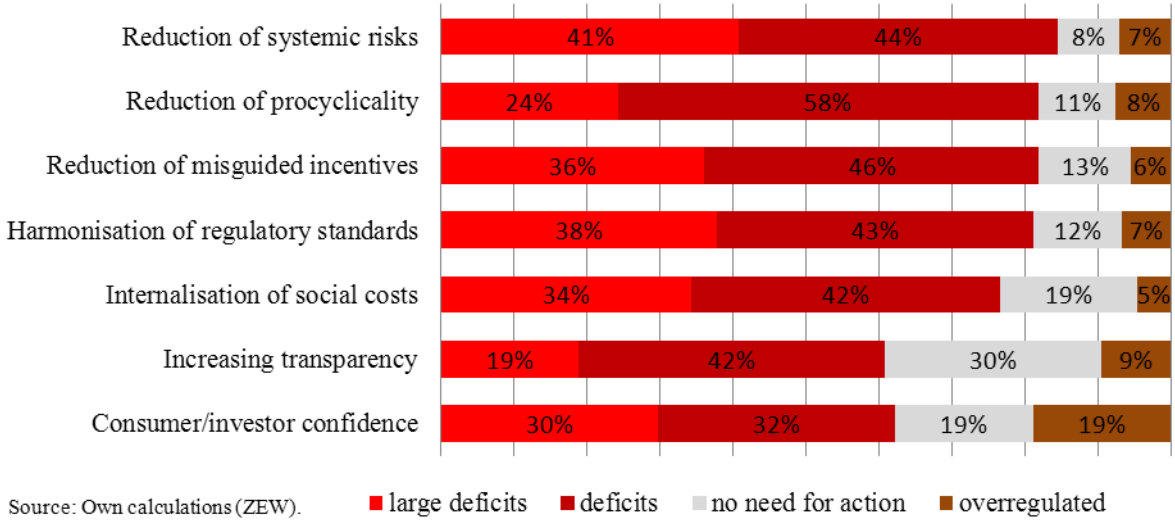
[199] The number of answers to each question ranges from 62 to 76 with an average of 72 answers.

Results

What is your assessment of the current state of implemented bank regulation with regard to the following stability objectives?

Generally, one can say that the majority believe the regulation to be insufficient with regard to all given stability objectives as (see Figure 8). This view is most obvious when it comes to the reduction of systemic risks with 85% complaining about deficits and large deficits. 41% for the latter option suggests strong discontent with the current regulation. The other questions display a similar pattern, albeit to a slightly lesser extent. However, there are two noteworthy exceptions, namely the objectives of increasing transparency and consumer/investor confidence, which both show a greater degree of disagreement with the prevailing view of deficient regulation with 39% and 38%, respectively, against stricter regulation. Yet, the majority still argue for more regulation. Furthermore, 19% consider consumer/investor confidence to be overregulated, considerably more than for any other objective.

Figure 8: Assessment of the current state of implemented bank regulation with regard to certain stability objectives



Source: Own calculations (ZEW).

How do the following regulatory measures influence the costs for banks and their credit supply to companies?

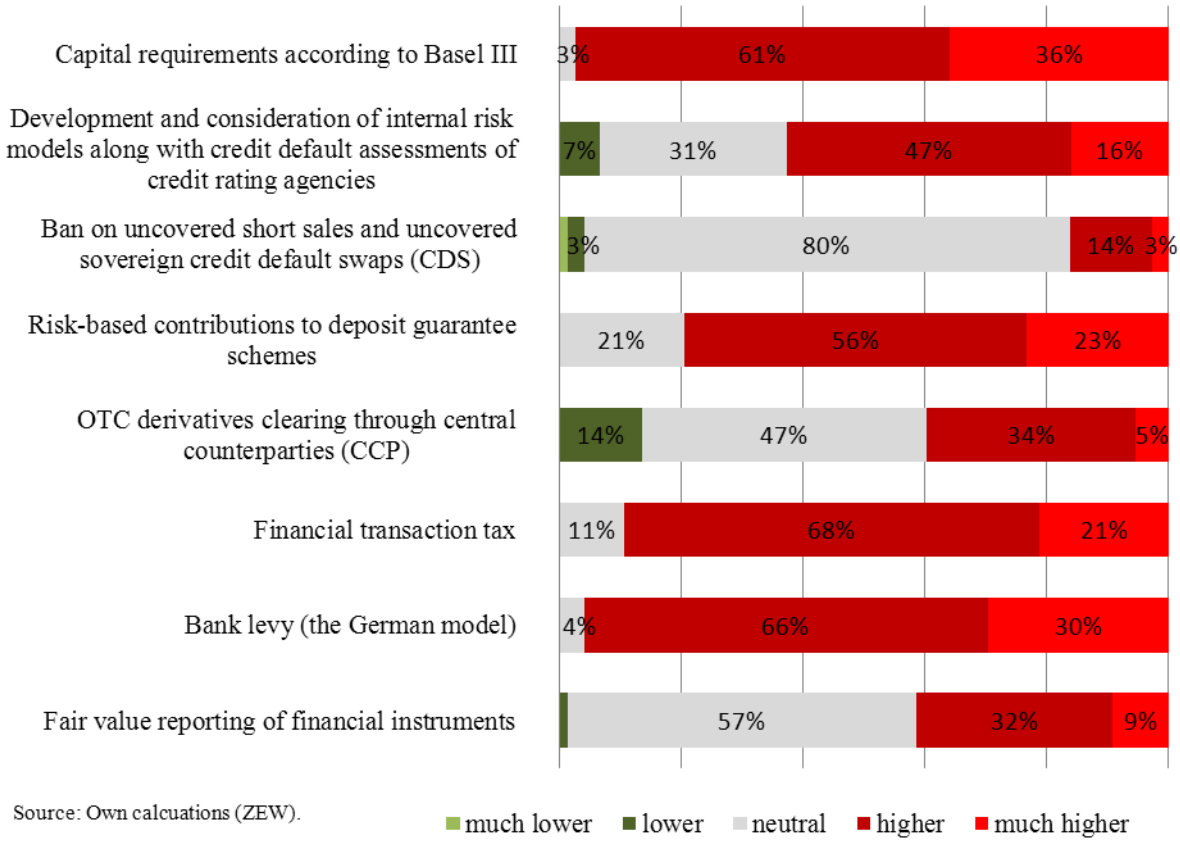
There is a clear majority in most of the questions in Figure 9. The predominant opinion was that the proposed regulation would increase costs for the banks, with the exceptions of the ban on uncovered short sales and CDS, central counterparties for OTC derivatives and fair value reporting with 80%, 47%, and 57%, respectively, expecting no change. Nevertheless, the expectations of higher costs resulting from these measures still exceed expectations of lower costs by a sizable amount, in line with the overall trend. The percentage of experts expecting higher or much higher costs in the remaining questions range from 97% (Basel III) to 63% (internal risk models), all including large proportions of votes for much higher costs (36% to 16% of all votes).

As expected, higher costs in Figure 9 are matched by a lower credit supply to firms as evidenced by the answers in Figure 10.

Interestingly, the distribution at the extremes changes between the two parts, the answers shift towards more moderate and in particular neutral views. Hence, the effect on the credit

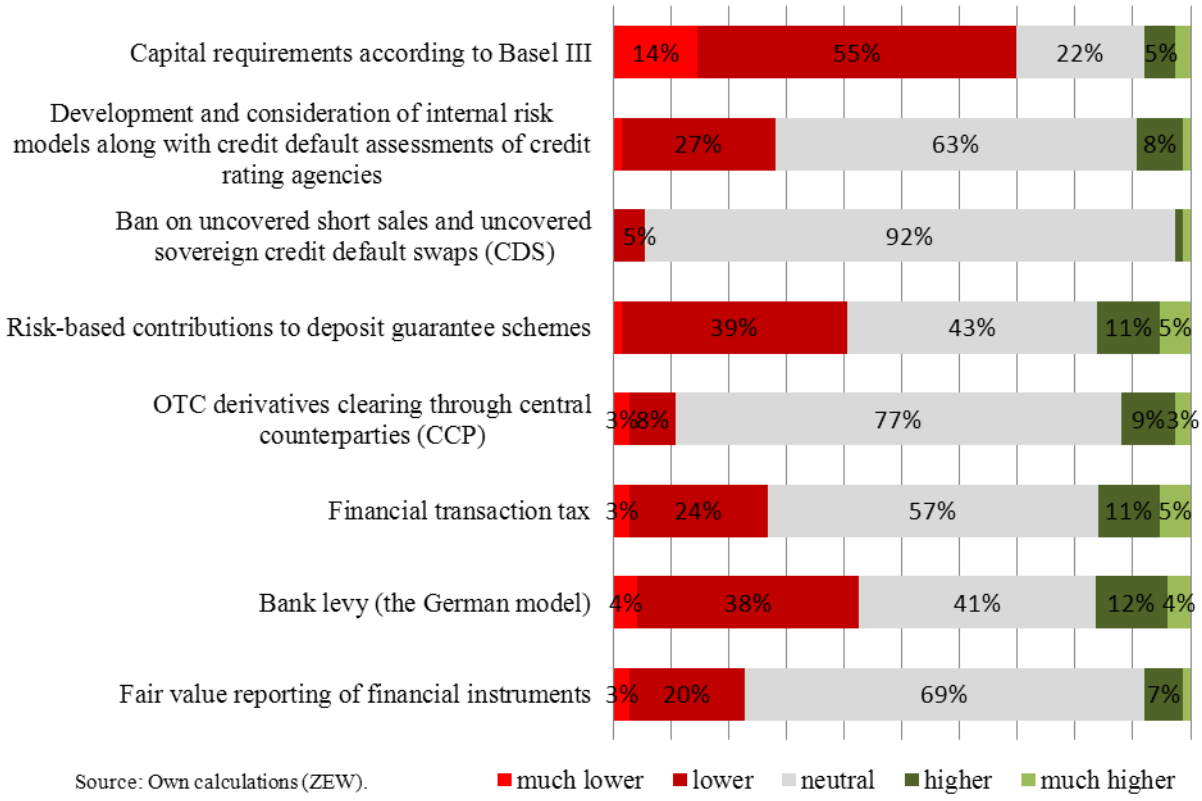
supply is considered to be lower than the effect on the banks' costs. In particular, Basel III, a financial transaction tax and a bank levy are almost unanimously expected to increase costs (at least to some extent), yet the credit supply changes by a considerably smaller extent. Notably, about half of the participants (57% and 41%) don't expect a change in credit supply after the introduction of a transaction tax or a bank levy. Still, 27% and 42%, respectively, expect a lower credit supply, but only 3% and 4% expect a much lower supply, compared to 21% and 30% who expect much higher costs in Figure 9. Surprisingly, 16% expect higher credit supply for both measures even though no one expects lower costs (see Figure 10).

Figure 9: Influence of certain regulatory measures on the costs for banks



Source: Own calcuations (ZEW).

Figure 10: Influence of certain regulatory measures on the credit supply to companies

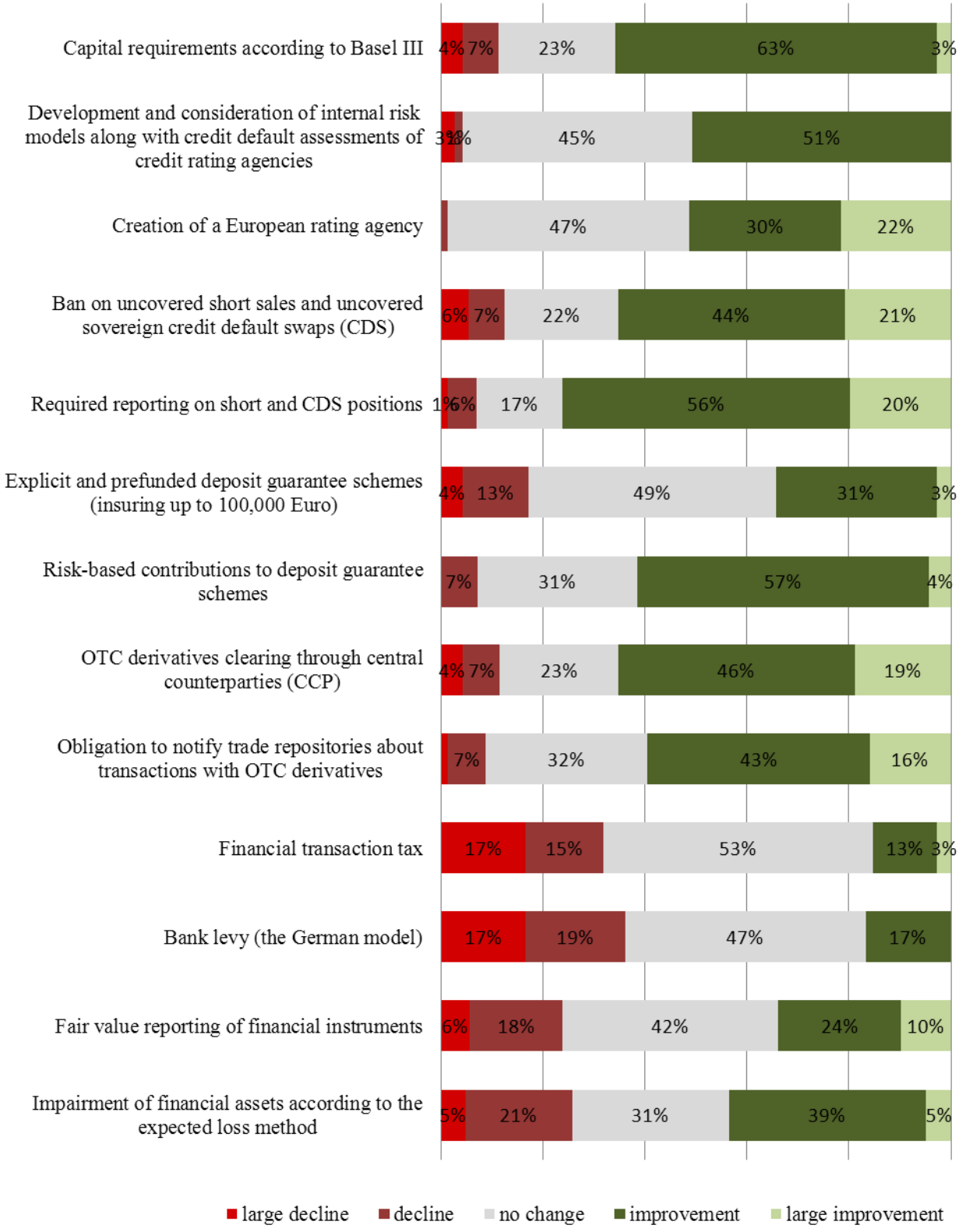


Source: Own calculations (ZEW).

How do the following regulatory measures affect the stability of the banking sector?

The proposed regulatory measures are viewed in a predominantly positive light when it comes to their impact on the stability of the banking sector (see Figure 11). However, there is also a large proportion of experts expecting no change in this respect in most questions. Notably, internal risk models, a European rating agency, deposit guarantee schemes, a financial transaction tax, and a bank levy are all considered to be without effect by around 50% of the professionals. However, internal risk models and a European rating agency attract about 50% positive votes as well. This indicates an ambivalent attitude by the professionals towards the potential benefits of the proposals, regardless of equally strong support in favour of enhanced regulation. Nevertheless, fears of deterioration are not confirmed as only a few measures attract negative expectations. The negative views only exceed the positive ones for two proposals, the financial transaction tax and the bank levy, but even then they remain relatively small (32% and 36%, respectively) and appear small in comparison to the neutral view with 53% and 47%. With respect to short sales and CDS, required reporting of all such positions is seen in a more favourable light than an outright ban of uncovered short sales and uncovered CDS.

Figure 11: Influence of certain regulatory measures on the stability of the banking sector?



Source: Own calculations (ZEW).

Conclusion

This survey shows the opinion of financial experts towards several important regulation proposals. In most questions, the survey yields a clear position of the experts, indicating a general consensus on many of the issues in question. In conclusion, one can point out the main findings. First, the majority of participants consider the current regulation to be inadequate in respect of its aim of financial stability. Second, most regulatory proposals lead to higher costs for banks, which in turn tend to reduce the credit supply to firms, albeit to a lesser extent. Finally, the majority in favour of more regulation becomes weaker when it comes to the specific proposals which many expect not to change the situation in either direction. This suggests that there are a number of professionals who are not convinced that the proposals are capable of solving the current problems. Yet, there are still a majority in favour of most measures.

ANNEX 2: QUESTIONNAIRE

1. What is your assessment of the current state of implemented bank regulation with regard to the following **stability objectives**?

Objective	no answer	large deficits	deficits	no need for action	over-regulated
1. Reduction of procyclicality	[ ]	[ ]	[ ]	[ ]	[ ]
2. Harmonisation of regulatory standards	[ ]	[ ]	[ ]	[ ]	[ ]
3. Reduction of misguided incentives	[ ]	[ ]	[ ]	[ ]	[ ]
4. Internalisation of social costs	[ ]	[ ]	[ ]	[ ]	[ ]
5. Increasing transparency	[ ]	[ ]	[ ]	[ ]	[ ]
6. Consumer/ investor confidence	[ ]	[ ]	[ ]	[ ]	[ ]
7. Reduction of systemic risks	[ ]	[ ]	[ ]	[ ]	[ ]

2. How do the following regulatory measures influence the **costs for banks and their credit supply to companies**?

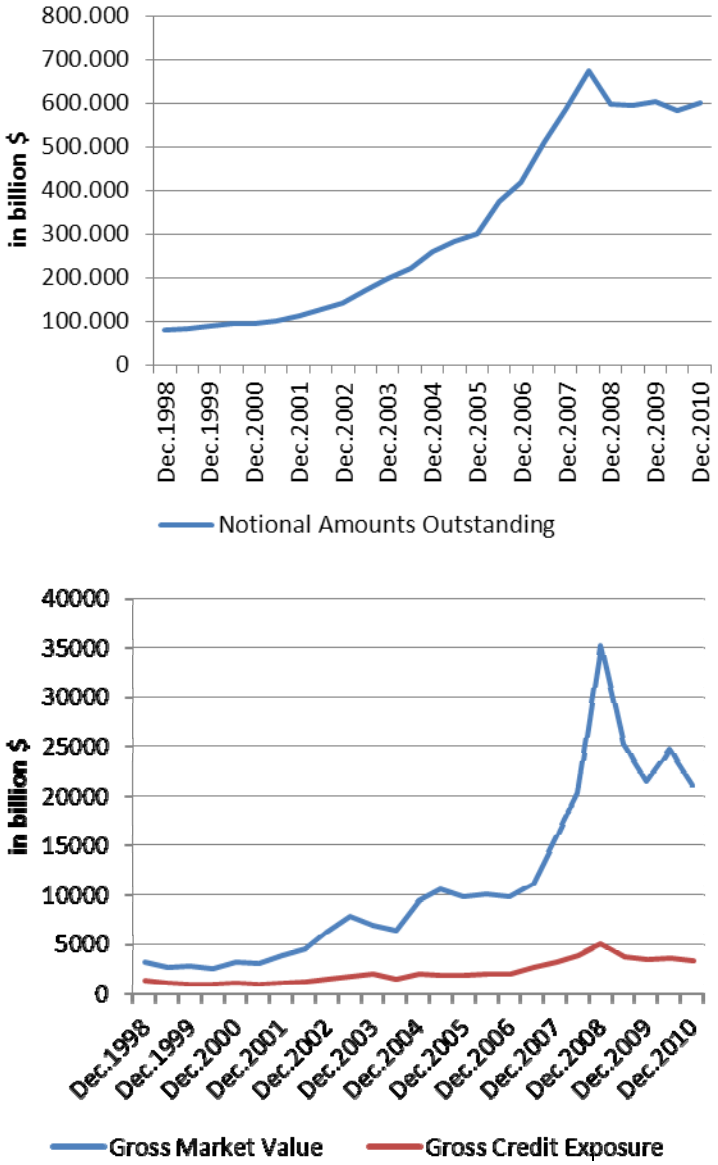
Measure	a) Costs for banks					b) Credit supply to companies				
	much lower -2	lower -1	neutral 0	higher 1	much higher 2	much lower -2	lower -1	neutral 0	higher 1	much higher 2
1. Capital requirements according to Basel III	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
2. Development and consideration of internal risk models along with credit default assessments of credit rating agencies	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
3. Ban on uncovered short sales and uncovered sovereign credit default swaps (CDS)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
4. Risk-based contributions to deposit guarantee schemes	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
5. OTC derivatives clearing through central counterparties (CCP)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
6. Financial transaction tax	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
7. Bank levy (the German model)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
8. Higher capital requirements for trades on the interbank market	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
9. Fair value reporting of financial instruments	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

3. How do the following regulatory measures affect the **stability of the banking sector**?

Measure	no answer	large decline		no change		large improvement
		-2	-1	0	1	2
1. Capital requirements according to Basel III	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
2. Development and consideration of internal risk models along with credit default assessments of credit rating agencies	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
3. Creation of a European rating agency	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
4. Ban on uncovered short sales and uncovered sovereign credit default swaps (CDS)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
5. Required reporting on short and CDS positions	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
6. Explicit and prefunded deposit guarantee schemes (insuring up to 100,000 Euro)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
7. Risk-based contributions to deposit guarantee schemes	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
8. OTC derivatives clearing through central counterparties (CCP)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
9. Obligation to notify trade repositories about transactions with OTC derivatives	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
10. Financial transaction tax	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
11. Bank levy (the German model)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
12. Higher capital requirements for trades on the interbank market	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
13. Fair value reporting of financial instruments	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
14. Impairment of financial assets according to the expected loss method	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

ANNEX 3: OVERVIEW OF THE OTC DERIVATIVES MARKET

Figure 12: Size of the market for OTC derivatives



Source: Own calculations based on data from the BIS, see http://www.bis.org/statistics/derstats.htm.

This graph plots the development of the market for over-the-counter (OTC) derivatives from 1998 to 2010. As one can see in the upper panel of Figure 12, the market underwent a rapid expansion since the late 1990s, reaching a peak of USD 672 trillion by notional amounts[200] in 2008. Since then, this figure has decreased to around USD 600 trillion. In contrast to this, gross market value[201] and gross market exposure[202], which provide a better overview of the financial risks involved, have grown much less rapidly than the

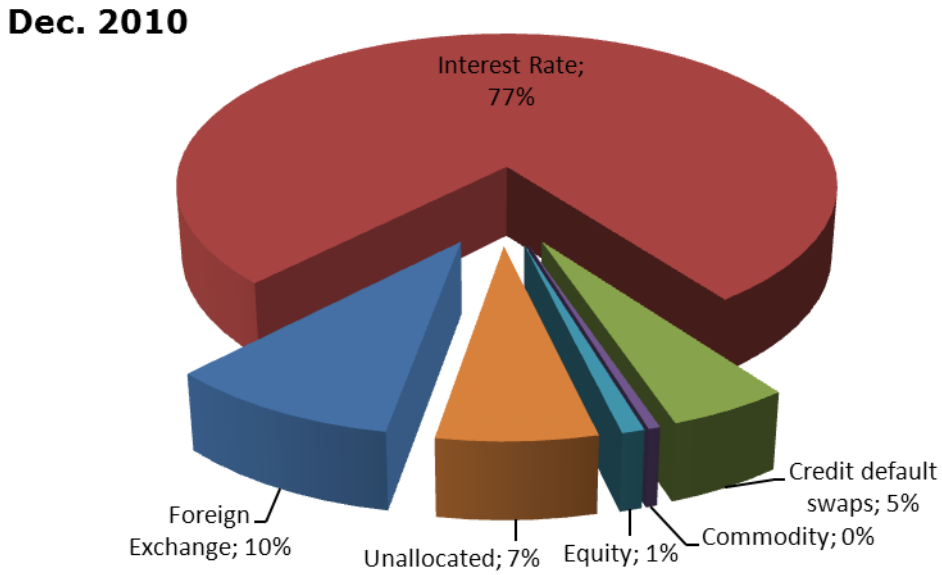
[200] The notional amount is used as the basis for calculations for payments, e.g. for interest rate derivatives. Note that this is not the value of the derivative.

[201] The gross market value is the cost to fulfil all open contracts at the current market prices.

[202] The gross value of all contracts excluding bilaterally netting contracts.

notational value before 2008 but experienced a similar decline from 2008 to 2010 (as displayed in the lower panel of Figure 12).

Figure 13: Market share based on notional amounts outstanding



Source: Own calculation based on data from the Bank for International Settlements.Figure 13 shows the market shares of different types of OTC derivatives, broken down by the underlying asset class. Interest rate derivatives are by far the most important segment representing more than three quarters of the OTC derivatives market. Foreign exchange derivatives account for 10% while credit default swaps only make up 5% of the market. Equity and commodity derivatives account for a minor proportion of the market.

Table 4: Market share of OTC and exchange traded derivatives based on notional amount outstanding

Type	market share	OTC	exchange
Foreign Exchange	8.7%	99.5%	0.5%
Interest	78.8%	88.3%	11.7%
Equity	1.7%	49.8%	50.2%
Commodity	0.4%	100.0%	0.0%
CDS	4.5%	100.0%	0.0%

Source: Own calculations based on data from the BIS, see http://www.bis.org/statistics/extderiv.htm.

Table 4 gives an overview of the relative importance of over-the-counter transactions compared to trading on organised exchanges. The figures show considerable differences in the way derivatives are traded depending on the underlying asset class. Only interest and equity derivatives are traded on exchanges to a significant proportion (11.7% and 50.2%, respectively), whereas the remaining types of derivatives are traded almost exclusively over-the-counter. This is because standardised derivatives such as futures and options, which play a more important role for interest and equity derivatives, tend to be traded on exchanges. Customised derivatives like swaps and forwards, however, are traded over-the-counter. These derivatives are more prevalent in the market for CDS, foreign exchange and commodity derivatives.

ANNEX 4: ACCOUNTING

In the light of the financial crisis and on-going efforts to converge IFRS and US GAAP, different stakeholders, including governments, the G-20 and regulators, are paying increased attention to accounting standards. The International Accounting Standards Board (IASB) seeks to provide a framework for more accurate information about the internal situation of financial institutions. Therefore it has already issued stronger disclosure requirements concerning risks associated with financial instruments, some of which are still under discussion, while stronger disclosure requirements concerning off-balance sheet exposures are being finalised.

The IASB has adopted several activities in response to the crisis, which will be the focus of our further analysis:

- Replacement of IAS 39, a standard on the recognition and measurement of financial instruments.
- Accounting for off-balance sheet vehicles through an improvement of the standards on consolidation and de-recognition.
- Creation of a single standard clarifying how to measure fair value where existing standards require or permit fair value measurements.

The amendments to the standards concerning leases and insurance contracts are not examined within the scope of our study since they are not related to the financial crisis.

The table below gives a brief overview of the crisis related actions of the IASB and its self-imposed work plan for the development or amendment of IFRSs.

Table 5: Actions of the IASB related to the financial crisis

Financial Crisis related projects	Supplementary Document / Staff Draft	Exposure Draft	Comment Period End	IFRS	
				#	Publication date
IFRS 9 Financial Instruments (replacement of IAS 39)				9	
1) Classification & Measurement		May 2010	16.07.2010		October 2010
2) Impairment	January 2011		01.04.2011		Q2 2011
3) Hedge Accounting					
- general		December 2010	09.03.2011		Q3 2011
- portfolio hedge		Q3/Q4 2011			
Offsetting		January 2011	28.04.2011		Q2 2011
Consolidation					
Replacement of IAS 27	September 2010 (staff draft)		n.n.	10	Q2 2011
Disclosure				12	Q2 2011
Investment Companies		Q2 2011			
Derecognition		March 2009	31.07.2009	7	October 2010
Fair Value Measurement		June 2010	07.09.2010	13	Q2 2011

Source: IASB, ZEW

Replacement of IAS 39

The standard IAS 39 on recognition and measurement of financial instruments is complex and does not always produce the most useful information. The IASB therefore aims to replace IAS 39 with the objective of improving financial statements' decision usefulness for users. Its replacement should also result in a simplification of the requirements for the accounting for financial instruments. During the three replacement phases (classification and measurement, impairment, hedge accounting) these and further aims are pursued: The amendments in classification and measurement of financial assets are to reduce volatility in profit and loss, which potentially has related effects on tax and regulatory requirements. The standard on impairment will be changed from an incurred losses approach, which has led to losses having been recognised late in the economic cycle, to an expected loss approach. The proposals on hedge accounting have the objective of simplifying and reducing complexity. They also allow for a better link between an entity's risk management strategy, the rationale for hedging and the impact of hedging on the financial statements.

The purpose of the project on offsetting financial assets and liabilities is to converge one of the more significant financial instrument presentation differences between IFRS and US GAAP.

Accounting for off balance sheet vehicles

Since some entities may not have accounted for all other entities they control, especially some special purpose entities (SPEs) used for securitisation transactions, the IASB has accelerated the project dealing with consolidation as a result of the financial crisis. The project is looking to tighten up the definition of control so that entities account for all other entities subject to them, review how the control notion applies to structured entities (such as SPEs) and improve disclosure requirements for entities that rightly remain off balance sheet.

The IASB has also prioritised its work on derecognition of assets. The project is looking to review and clarify when entities should stop accounting for assets transferred to other entities. Since some entities may have ceased accounting for assets they still control, interested parties are given an incomplete picture. Users also require more information on an entity's risk exposure related to assets that are rightly off balance sheet.

Fair Value Measurement

Guidance on how to measure fair value has been dispersed across standards and in some cases is inconsistent. The IASB is creating a single standard clarifying how to measure fair value where existing standards require or permit fair value. The project furthermore aims to increase consistency between IFRS and US GAAP.

Table 6: Basel III–Accounting Considerations

Area	Impact of Proposed Accounting Change on Financial Statements	Impact of Proposed Accounting Change on Basel III capital calculations	Date
Offsetting and netting of financial assets and liabilities	▪ Formerly, US GAAP allowed netting derivative assets and liabilities under master agreements ▪ US GAAP will narrow allowance for offsetting positions ▪ Closer convergence	▪ **Leverage Ratio** – Potentially significant impact on financial ratios but similar due to convergence between US GAAP and IFRS. Calculation of leverage ratio depends on balance sheet definitions.	Q3 2011 (FASB)
Financial Instruments: Recognition and Measurement	▪ IFRS model finalised, requiring financial instruments at fair value or amortised cost ▪ FASB model differs significantly from IFRS; requires more instruments measured at fair value, with changes reflected in net income or OCI ▪ Common standard aspired	▪ **Tier I capital** – Amounts held in OCI could change significantly and vary based on whether entity applies US GAAP or IFRS. ▪ **Leverage Ratio** – Carrying amount of financial instruments will change depending on application of US GAAP (fair value) versus IFRS (amortised cost)	Q4 2011 (FASB)
Financial Instruments: Impairment	▪ Convergence to an expected loss model emerges	▪ **Tier I capital** – Losses could be recognised earlier, resulting in lower Tier I capital prior to occurrence of loss ▪ **Leverage Ratio** – Earlier recognition of losses will result in lower ratios ▪ **RWA** – Could affect carrying value of assets included in RWA calculation	Q4 2011
Consolidation	▪ Consolidation guidance becoming closer converged, resulting in less off-balance sheet arrangements	▪ **Tier I capital** – May result in more Minority Interest; Retained Earnings from consolidated entities may not be available to absorb losses ▪ **Leverage Ratio/RWA** – Consolidation could result in more assets and liabilities recorded impacting ratios and being included in the RWA calculation	Q4 2011
Transfers of Financial Assets	▪ Under IFRS, more transferred assets (or portions of assets) could be taken off the books ▪ US GAAP model not yet proposed (currently a research project following IASB developments)	▪ **Leverage Ratio/RWA** – Derecognition results in less assets impacting ratios and being included in the RWA calculation ▪ **Tier I capital** – More transferred assets will potentially result in more MSRs; Increased MSRs will result in decreased in Tier I capital	No date
Financial Instruments with characteristics of equity	▪ May result in closer convergence; proposal not yet finalised ▪ May impact equity classification of callable, convertible instruments, among others	▪ **Tier I capital** – Adjustment for preferred stock may become N/A; Certain derivatives or other instruments that are currently classified as equity might be no longer part of Tier I capital	No date

Source: PWC (2010), ZEW

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