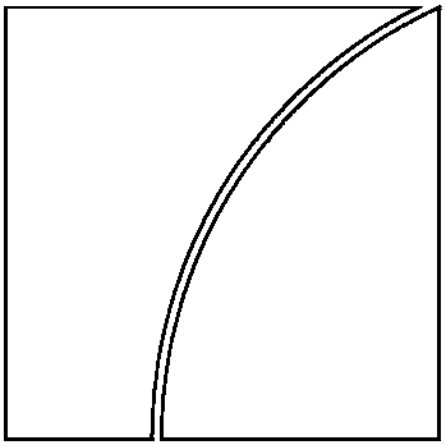
Basel Committee
on Banking Supervision

The Joint Forum



Report on asset securitisation incentives

July 2011

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THE JOINT FORUM

BASEL COMMITTEE ON BANKING SUPERVISION
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS
INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS
C/O BANK FOR INTERNATIONAL SETTLEMENTS
CH-4002 BASEL, SWITZERLAND

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Chapter 1 – Introduction

1.1 Background

Asset securitisation (referred to simply as "securitisation" in the remainder of this report) is the process by which securities are created by a special purpose entity (SPE) and issued to investors with a right to payments supported by the cash flows from a pool of financial assets held by the SPE.[1]

Securitisation increases the availability of credit by converting non-tradable financial assets into securities that can be issued to investors and traded on capital markets. The division of the payment rights into "tranches" paid in a specific order and supported by credit-enhancement mechanisms provides investors with exposure to diversified credit risks tailored to the investor's particular risk appetite.[2]

Securitisation has been an alternative funding source for consumer and mortgage lending in many mature market economies. According to the International Monetary Fund (IMF) (2009), before the collapse of the securitisation market in 2007 and 2008, asset-backed securities (ABS) and covered bonds provided between 20 and 60 per cent of the funding for new residential mortgage loans originated in the United States, Western Europe, and Australia. As of the end of June 2009, in the United States, nearly 19 per cent of the outstanding stock of the more than US$ 18 trillion worth of real estate related loans and consumer credit was funded by private label securitisation. Private label mortgage-backed securities (MBS) issued by primary lenders amounted to 26 and 16 per cent of all commercial and residential mortgage lending, respectively. Outside the United States, for the same period, more than US$ 1 trillion of assets were funded by securitisation. This included emerging markets, where securitisation technologies supported a stable supply of housing funding and consumer credit. Of the estimated US$ 4.5 trillion worth of securitised assets globally as of the end of June 2009, more than 85 per cent were linked to Amercian retail finance.

The global growth of securitised products peaked in most mature jurisdictions by 2007 before declining rapidly due to a lack of liquidity in secondary markets and a decline in primary issuance. For example, the issuance of securitisation products in the United States declined from about US$ 2 trillion in 2007 to around US$ 400 billion in 2008. The declines started earlier and were more prominent in the United States and Europe but Australia, Canada and Japan also suffered significant declines. The impact of the financial crisis on securitisation in emerging markets was more modest as initial growth had been more subdued.

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[1] Note that the focus of this report is on the securitisation of assets and does not address the transformation of liability risks into financial instruments through the use of SPEs. It also focuses on private label securitisation products – those not issued or backed by Governments and their agencies, that is excluding those of Government sponsored enterprises (Fannie Mae and Freddie Mac in the United States) and public sector entities (such as Canada Mortgage and Housing Corporation in Canada). Finally, the report does not specifically address issues raised by the use of derivatives to create "synthetic" securitised products.

[2] However, the inability of the capital markets to properly price the risks associated with the securitisation process led to unanticipated investor losses and a broader financial crisis as securitised products were embedded within the financial system. Refer to Financial Stability Oversight Council, Macroeconomic Effects (2011), p. 14.

1.2 Mandate

Re-establishing sustainable securitisation markets has been high on the agenda of the Group of Twenty (G20), the Financial Stability Board (FSB), and other international organisations and national governments since the onset of the crisis.

The FSB's November 2010 report to the G20 leaders noted, in particular, that –

> "Re-establishing securitisation on a sound basis remains a priority in order to support provision of credit to the real economy and improve banks' access to funding in many jurisdictions".[3]

The Joint Forum agreed to a mandate in mid-2010 to assist its parent committees - the Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO) and the International Association of Insurance Supervisors (IAIS) - and the FSB in developing a coordinated suite of policy responses to facilitate the regulation of sustainable securitisation markets.

The purpose of the mandate is to provide a better understanding of market expectations of how the securitisation markets are likely to evolve in response to the financial crisis and regulatory proposals directly or indirectly affecting the securitisation process. The focus has been on understanding the incentives of key participants involved in the process of securitisation, assessing how these incentives may have contributed to a loss of confidence in securitisation, and describing the range of regulatory and industry proposals that will directly or indirectly impact these incentives. The mandate builds on prior work of the Joint Forum that addresses issues relevant to the role of securitisation in the financial markets:

- *Report on Special Purpose Entities (September 2009)*

  The Joint Forum Report on Special Purpose Entities (SPE Report) is a comprehensive description and analysis of the use of SPEs in securitisation markets. The SPE Report discusses the motivations of market participants in setting up SPEs, the potential misalignment of incentives caused by the use of SPEs in the securitisation process, and policy recommendations for consideration in mitigating these misalignments.

- *Reports on Credit Risk Transfer (March 2005, updated July 2008)*

  The 2005 Joint Forum Report on Credit Risk Transfer and its follow-up review in July 2008 describe the rapid growth and innovative forms of credit risk transfer associated with credit derivatives and their role in the financial crisis. These reports are relevant to the securitisation process as credit risk transfer mechanisms were used in structuring securitisation transactions and to create “synthetic” assets.

The Joint Forum Risk Assessment and Capital Working Group (JFRAC) undertook the following steps to address the mandate:

- Conducted a literature review of cross-sectoral work on incentives and discussions with relevant academics and industry consultants. This review aimed to collect existing views and hypotheses about the role of incentives across the securitisation

[3] FSB, *Progress Since the Washington Summit in the Implementation of the G20 Recommendations for Strengthening Financial Stability – Report of the Financial Stability Board to G20 Leaders*, November 2010, p. 32.

value chain, how they have changed and the role regulation and regulatory changes may have played in influencing these incentives (see Appendix 1).

- Reviewed and analysed cross-sectoral regulatory reform proposals, including those intended to address misalignments in incentives in the securitisation value chain (see Appendix 2).
- Conducted interviews between September and December of 2010 with a representative sample of market participants in the United States, Europe and Australia – including investors, originators, sponsors, attorneys, trustees, accountants and credit rating providers – who had been active in the market in 2006 and 2007. The interviews included discussions about incentives driving participation before the crisis, how and why they have changed since the crisis, and how participants expect markets and their participation in them to change[4].
- Presented early research findings to the Joint Forum in November 2010.

This Paper summarises and analyses the outcomes of this work. In particular, it describes and sets out:

- the incentives which drove participation in the securitisation markets by originators, issuers, arrangers and investors before the crisis and how those incentives have changed; and
- regulatory responses and market perspectives on those responses including their influence on incentives in the securitisation markets.

An important feature of this work has been the effort to assess the views of participants in the securitisation markets across a number of continents.[5] Given the number of new and developing legislative and regulatory responses that affect securitisation that are being undertaken by multiple jurusdictions and the various sectors (banks, securities firms, insurance), the prevailing views of market participants should serve as valuable input for authorities. The insights from market participants, particularly investors, on the future shape and prospects for the securitisation markets was another important objective of the interviews. Chapter 3 discusses the feedback from market participants, including their concerns regarding regulatory responses to date and the future direction of regulation.

1.3 The macrofinancial context for the growth of securitisation

1.3.1 The macrofinancial environment

The significant growth of securitisation reflects to a large extent the rapid increase in the global pool of savings during the period leading up to the financial crisis. As seen in Figure 1, there were enormous volumes of financial capital flowing from emerging economies and oil exporters, which enjoyed high average GDP growth rates during the years preceding the crisis, to mature Western economies.

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[4] We recognise that the views of the interviewees must be considered with the caution that they reflect the personal and situational perspectives of the interviewees and cannot necessarily be taken to represent an industry consensus.

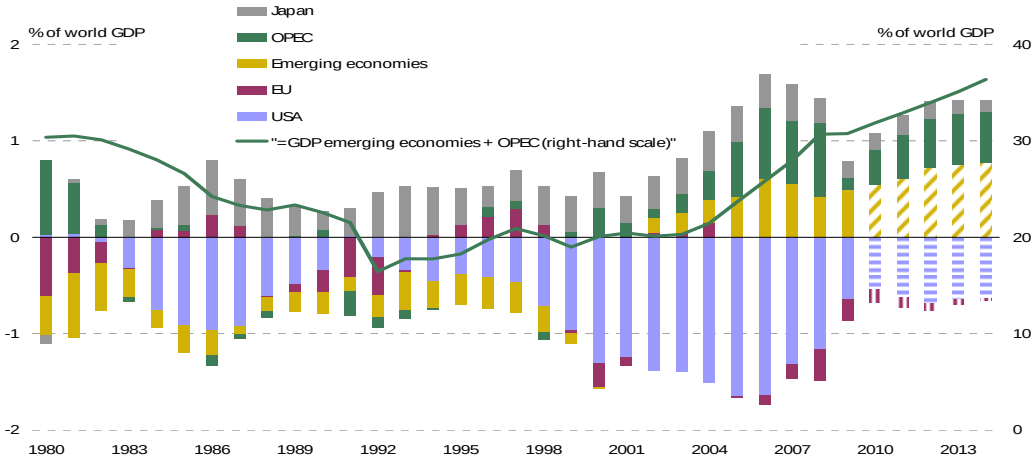
[5] Although JFRAC considered conducting interviews in other markets, such as Japan and Korea, the limited time available for preparing the report encouraged members to focus on Europe, North America and Australia, where most securitisations occurred prior to the crisis.

The comparative disadvantage of emerging economies in their ability to offer financial instruments has been especially intense in the area of savings products with low risk and high liquidity. As a result, these countries accumulated large volumes of assets issued by both private and public institutions in mature economies. Figure 2 shows the rapid growth in the world volume of international reserves over recent years, which is mainly explained by the huge stock of low-risk assets accumulated by the emerging economies and oil exporters.[5]

Still, the increase in the demand for low-risk assets has not been limited to emerging economies and oil exporters. In fact, some factors that are present in many industrialised economies, including the growth in funds managed by insurance companies and pension funds, together with the introduction of some prudential standards, have also led to an increase in the demand for safer assets.[6]

Figure 1

Growth of emerging economies and current account balance by geographical area



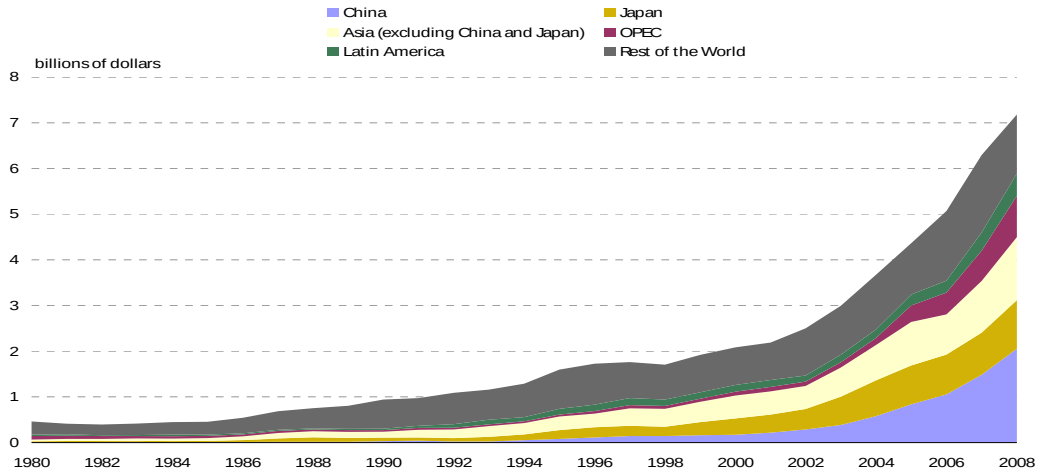
Source: IMF

[5] With regard to the composition of international reserves, according to estimates by Brender and Pisani (2010), for the middle of 2007, monetary bonds and assets accounted for 76% and 22% respectively of all reserves, compared with 2% corresponding to equity securities.

[6] For a detailed analysis of these changes in the composition of the demand for savings instruments, including additional evidence, see Caballero (2010). Shin (2009) also provides a recent analysis of the effects of securitisation at the aggregate level, including its consequences for financial stability.

Figure 2

International reserves



Source: Thomson Reuters Datastream

1.3.2 The growth in demand for securitised products

The set of factors outlined above help explain the rapid growth of securitisation markets. On the one hand, the high pressure on the supply of assets perceived as safe and liquid translated into higher prices for them, which fuelled a fall in the return rate of most traditional fixed-income assets.[7] This, in turn, resulted in a "flight to higher-returns" by investors from advanced economies seeking higher rates of return than were offered by traditional fixed-income assets. This demand for assets with (perceived) low credit risk but with higher yields had clear consequences on the incentives for the financial industry to produce such assets.

In the context just described, securitisation emerged as one of the alternative mechanisms to generate new assets with (perceived) low credit risk but with higher yields, thus helping to close the gap between the strong demand for such assets and their supply.[8] Specifically, through the pooling of a large number of loans into one single fund, securitisation allowed for the diversification of risks and hence for the mitigation of individual-loan idiosyncratic risk. In this way, securitisation was intended to dilute risks by segregating and prioritising cash flows and so create assets with various levels of credit risk.[9]

Figures 3 and 4 summarise the most salient features of these developments. Figure 3 shows the growth, both in absolute and relative terms, of assets with AAA ratings from the beginning of the 1990s up to 2009. Between 1990 and 2006, the year in which the series of ABS issues peaked, assets with the highest credit rating rose from a little over 20 per cent of total rated fixed-income issues to almost 55 per cent. In addition to this, the contribution of

7 "Traditional" refers to sovereign bonds and corporate debt.

8 Comisión Nacional de Mercado de Valores (CNMV) (2010b) explores the links between the accumulation of global imbalances and the rapid growth of securitisation markets in the decade preceding the crisis.

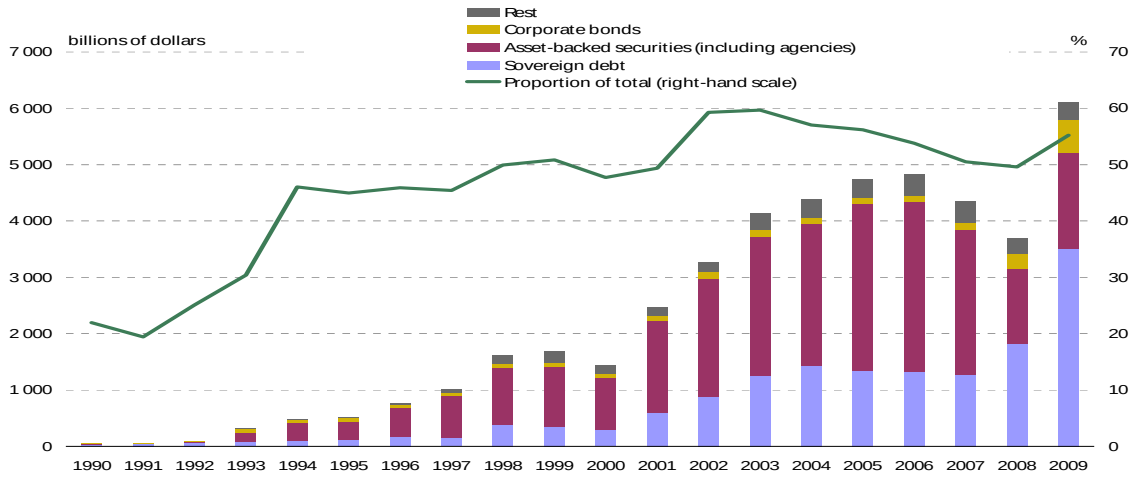
9 For some comprehensive surveys on securitisation development and mechanisms, see for example Coval et al. (2009a), Gorton and Souleles (2005), and Duffie (2008).

the different categories of fixed-income assets under consideration to the total growth of assets with AAA ratings between 1990 and 2006 clearly shows the paramount role of securitisation in producing assets considered “safe”. Specifically, during this period, ABS accounted for 64 per cent of the total growth of gross issues of long-term fixed-income AAA-rated assets, compared with 27 per cent attributable to the growth in public debt, 2 per cent to corporate debt and 8 per cent to other products.

Finally, Figure 4 highlights that many securitisation programs received a high credit rating. While during the period 1990 to 2006, the average percentage of corporate issues with a AAA rating, compared with total corporate issues, was 9 per cent, this proportion reached 48 per cent for sovereign issues, and 75 per cent in the case of securitisations. In other words, over the course of less than a decade, securitisation had created the most AAA-rated securities.

Figure 3

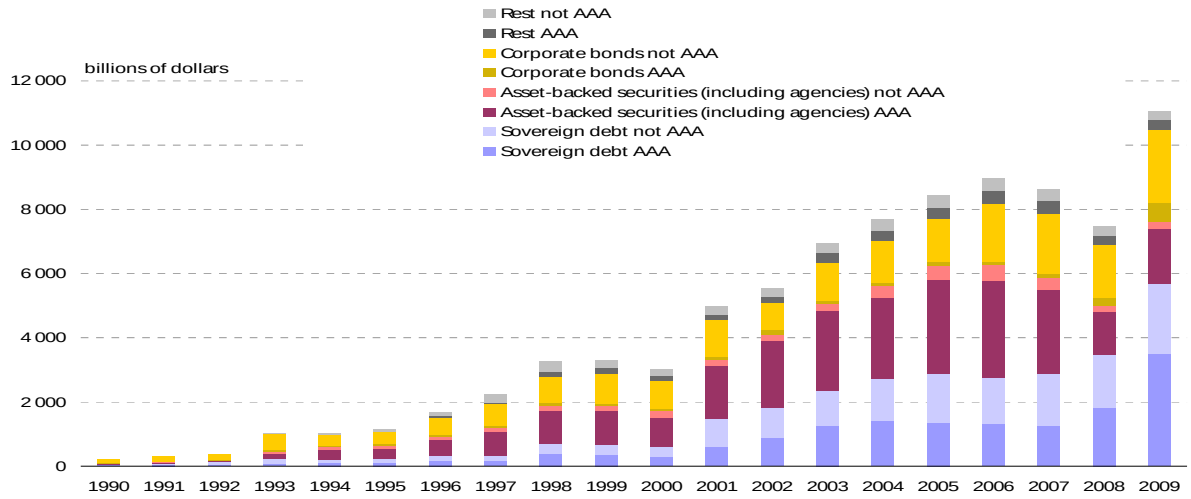
World issue of AAA fixed-income



Source: Dealogic and CNMV. (1) The category "others" includes mortgage bonds, preferred shares and other long-term fixed-income instruments.

Figure 4

World issue of fixed-income



Source: Dealogic and CNMV. (1) The category "others" includes mortgage bonds, preferred shares and other long-term fixed-income instruments.

1.4 Future prospects for securitisation

Interviewees expect that securitisation markets will recover in the medium term. Indeed, many noted that some recovery was already evident[10] although investor demand remained lacklustre and activities were confined to a limited number of active investors. In some regions, demand has been significantly supported by government and central bank intervention.[11]

Interviewees generally expect that markets will only recover to roughly half of their pre-crisis levels (similar to activity in 2004). This is mainly due to the disappearance of highly-leveraged vehicles such as structured investment vehicles. Many market participants viewed the loss of this segment of the market to be permanent. Interviewees also did not expect complex securitisation products to return in the foreseeable future and predicted that plain-vanilla ABS and MBS are likely to compose the bulk of the market.

While most recognised that complete standardisation of securitisation products was unlikely to be achieved, and in any case may not be desirable, there was an acknowledgement that standardisation to some extent will increase the attractiveness of the market and improve liquidity in the secondary market. Interviewees also pointed to recovery depending critically on the return of investor appetite, with originators and issuers only looking to develop markets where they are confident appetite will revive on a sustained basis. Interviewees made a number of observations about how investor appetite may return.

[10] In the United States for instance, the market for credit card and auto ABS and government guaranteed RMBS have strengthened, and there was an uptick in collateralised loan obligation activity in 2010.

[11] See also ECB (2011).

Improved macroeconomic conditions

Improved macroeconomic conditions are seen as a necessary precondition to any significant recovery in securitisation activity. There is a general view that investor confidence and demand will only return in a meaningful way when the underlying economies become more robust. Additionally, market participants interviewed also noted that the current abundance of alternative cheap funding sources allows originators/sponsors to be less reliant on securitisation as a funding vehicle.

Yields and pricing

The relative yields on securitisation products against other fixed income assets will have considerable influence on the timing and extent of the recovery. Many of those interviewed noted that the relative pricing of securitisation products is not competitive enough to entice investors, when compared with low valuations across other debt markets, including sovereign bonds. This issue is more pronounced in some regions than others. For instance, a number of industry participants noted that the valuations of securitised products in Australia were not competitive relative to other fixed income assets or relative to securitised products in offshore markets such as the United States and Europe.

The negative perception of securitisation

Some interviewees indicated that it was important to remove the negative perception attached to securitisation products. Some suggested that knowing that certain “qualified” ABS and MBS were automatically accepted as central bank collateral would be helpful in improving confidence and liquidity. In this regard, some interviewees reflected that the covered bond market, which does not carry the negative perception associated with securitisation, is likely to recover more rapidly. There are some concerns that the much less rigorous regulatory scrutiny received by covered bonds relative to securitisation may eventually lead to an under-appreciation of risk in the covered bond market. Also, the secured on-balance sheet nature of these transactions lock up assets so that it limits the ability of the institution to create liquidity and subordinates depositors and general creditors in the event of bankruptcy. In the United States, the majority of market participants doubted that covered bonds could replace securitisation due to balance sheet capacity constraints and the size of the domestic housing market. They noted that private label securitisation activity in the future will depend heavily on how the government-sponsored entities are reorganised.

Chapter 2 – Securitisation incentives: misalignments and conflicts of interest

This chapter describes the incentives of originators, issuers, arrangers, and investors which drove participation in securitisation markets before and since the crisis, and describes the conflicts and misalignments which contributed to distortions, contraction, and eventual loss of confidence in securitisation markets.[12] Understanding these incentives and misalignments – both as they were before the crisis and as they stand now – is relevant both to understanding how markets may recover and the role regulation may play in promoting a sustainable securitisation market and avoiding a repeat of the crisis.

In addition to the literature review, the Joint Forum conducted a series of interviews with market participants in order to gauge developments in the securitisation markets. The interviews were intended to:

- present insights into the incentives and misalignments which prevailed in securitisation markets before the crisis, and
- gauge developments in the securitisation markets, including the effects of misalignments and the post-crisis incentives that are influencing a meaningful restart of securitisation.

The interviews point to several drivers or incentives for originators and sponsors to issue securitised assets and for investors to purchase those assets.[13] The major incentives at play for originators/sponsors included funding diversification, funding cost, risk transfer, revenue generation, and regulatory and accounting benefits. Before the crisis, investors were driven to the market by an appetite for high risk-adjusted yields. Securitised products provided them with a means to diversify investments, meet yield thresholds, and maintain certain prudential standards and requirements by purchasing "investment grade" debt.

The interviews also confirm the adverse effects and unintended consequences created by conflicts and misalignments in incentives. The following discussion of the interplay and misalignments of incentives is not all encompassing, as there are many accounts of the role misaligned incentives played in exacerbating the crisis, including the 2009 Joint Forum SPE Report.[14]

2.1 Originator/sponsor incentives

For originators and sponsors, the reasons for securitising can be broken into four broad categories: funding diversification, risk transfer, revenue generation, and regulatory capital and accounting benefits.

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[12] Ancillary parties in the securitisation chain are not the focus of this work (eg, credit rating agencies, trustees), but may be considered to the extent they influence or interact with originator and/or investor incentives.

[13] The literature review identified similar incentives, although it highlighted that revenue generation and compensation related incentives had been under-researched.

[14] See Literature Review – Appendix 1, Section III.

2.1.1 Funding diversification

Originators interviewed emphasised diversification of funding sources and lower funding costs as the key incentives for them to securitise. These findings are largely in line with the available empirical evidence described in the literature review.[15]

While there were some boutique lenders that operated solely an originate-to-distribute model which relied entirely on volatile securitisation for funding, most originators had more varied funding models for which securitisation was a source of diversification.

Securitisation for a time provided a relatively stable and low cost source of financing and facilitated greater access to the credit markets. Securitisation was also seen as a way of reducing lenders' reliance on retail deposits and issuance of unsecured commercial and term paper. Another common observation from the interviews was that the ability to tailor securities to meet investor needs (for example, tranching structures for investor-desired maturities) enabled originators/sponsors to broaden their investor base, which further diversified funding sources. While not a funding advantage, asset-backed commercial paper (ABCP) issuers were able to maintain their customer relationships without exceeding internal exposure or lending limit thresholds.

Yet another observation on the funding benefits of securitisation was the extent of credit rating enhancement benefits. The process of securitisation leads to a separation of the assets from the credit quality of the originator. It allows smaller institutions, unrated corporations, or those with a non-investment grade credit rating, to access the capital markets based solely on the credit quality of the collateral they originate. Through securitisation, these entities may be able to access financing rates appropriate for 'AAA' credits.

2.1.2 Risk transfer

Risk transfer was another important motivator for securitisation and was cited by those originators interviewed as an important reason for engaging in securitisation. Securitisation transforms illiquid assets (eg, mortgages, auto loans) that otherwise would be held in a bank's portfolio, into marketable securities. Issuance of the securities backed by the underlying collateral is one means of transferring credit, liquidity, interest rate, prepayment and market risk associated with that collateral to investors and limiting the legal obligation of the originator/sponsor. The ability to transfer assets off-balance sheet varies by jurisdiction; for example, off-balance sheet treatment was easier to achieve under US Generally Accepted Accounting Principles (GAAP) than under International Financial Reporting Standards (IFRS). However, changes to US accounting rules governing securitisation special purpose entities that occurred in 2010 have reduced the ability for certain transactions to qualify for off-balance sheet treatment.[16]

Other important considerations related to risk management and risk transfer involve the potential for structural or performance triggers (such as early amortisation triggers in revolving securitisations or market value triggers), which during the crisis proved they could be highly interrelated, correlated and procyclical. Lastly, the potential for non-contractual

[15] See Literature Review – Appendix 1, Section I.

[16] September 2009 SPE Report, page 2.

support of securitisation securities by sponsors, often referred to as reputational risk, may influence the ultimate level of risk transfer to securitisation investors.[17]

In addition, insurance companies effectively used securitisation as a risk management tool by transferring unpredictable risk to investors through the issuance of catastrophe bonds.[18]

2.1.3 Revenue generation

Revenue generation was not an incentive explored in the 2009 SPE Report. However, it is recognised as having been a motivating factor for originators and sponsors and is recognised by supervisors and international bodies as an area where reforms are warranted. Interviewees observed that before the crisis, securitisation had been an effective means for generating revenues in a number of ways. This included fees for originating the underlying assets, underwriting and structuring the transaction, and providing credit and liquidity enhancements for certain structures. Issuers also created revenue streams through credit arbitrage vehicles that took advantage of the spread differential between longer-term assets and shorter dated liabilities issued to finance their purchase. Accounting rules which allowed the recognition of 'gain on sale' at initiation of a securitisation also encouraged issuance.

Some interviewees noted that peak-of-the-cycle securitisation activity was facilitated by the originate-to-distribute[19] model, which was motivated primarily by the fees generated from the different activities listed above. In this model, many issuers and arrangers relied on third-party originators/brokers for the production of the underlying assets, and many of these firms were thinly capitalised and not tightly regulated. The up-front fee generation and volume-based compensation schemes did not tie the long-term performance of the originated assets or the structured credit products. As a result, many of these issuers failed in the crisis, resulting in significant losses to the financial system as a whole.

2.1.4 Regulatory capital and financial reporting benefits

A number of firms interviewed noted that a reduction in regulatory capital requirements was indeed a direct motivator for various securitisation structures leading up to the crisis. Moreover, one interviewee said that the greater the divergence between the required amount of regulatory capital for an asset and the estimate of necessary economic capital, the greater the incentive to securitise the asset.

Accounting sales treatment was seen by some as providing originators/sponsors with additional incentives to securitise. For instance, if an originator was able to achieve off-balance sheet accounting treatment, the removal of balance sheet assets improved certain financial ratios, such as the leverage capital ratio or return on assets. In addition, sales treatment could increase non-interest income, which combined with the capital requirements improved the originator's return on equity. Securitisation also allowed banks which were efficient in originating certain asset types, for instance credit card receivables, to improve market share without creating balance sheet concentration.

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[17] September 2009 SPE Report, page 3.

[18] A form of insurance-linked securitisation instrument which specifies that the issuer's obligation to make repayments is deferred or excused if certain catastrophic events occur (IAIS, 2009).

[19] The process of financing assets through a securitisation, using the issuance proceeds to originate new assets and repeating the process. In addition, fees are earned by providing administrative and other management-related services to the SPE.

Despite these observations, many of the issuers interviewed rejected regulatory arbitrage as a significant incentive to securitise, instead pointing to the benefits of funding diversification and lower funding costs as having been far greater in importance in the decision to securitise. This observation appears to be more consistent with the findings reported in the literature review, which shows little empirical support for the popular perception that regulatory arbitrage was a key driver of securitisation during the period preceding the crisis.[20] However, supervisors are not necessarily convinced that capital relief was or is only a minor, ancillary consideration for originators and sponsors. For example, some of the securitisation activity that occurred in the residential MBS (RMBS) market post-crisis in the United States was the re-securitisation of US private label mortgage-backed securities, or Re-REMICS. The driving incentive behind this activity was regulatory relief to achieve capital relief and/or to reduce adverse classification totals. Going forward, changes in regulatory capital rules as well as accounting rule changes may influence originators' and sponsors' decisions to use securitisation.

2.2 Investor incentives

Recent research outlined in the literature review emphasises the perspectives of originators and issuer/sponsors, with minimal investigation of the incentives driving investors.[21] To address this apparent imbalance, interviews with a number of investors in securitised products were conducted to gain a better understanding of their perspectives. This was particularly important, as the interviews pointed to the return of investor appetite as an important factor to revitalising the securitisation markets.

From the investor's perspective, securitisation offered a number of tangible benefits, namely high credit quality (for senior tranches), portfolio diversification, and attractive yields relative to instruments of comparable credit quality. These benefits and drivers were particularly prominent in the pre-crisis environment with a surfeit of cash available for investment and insufficient alternative investment options yielding attractive returns. However, these same factors also often resulted in highly concentrated rather than diversified portfolios.

2.2.1 High credit quality

Investors sought securitised products because they met certain prudential standards such as restrictions to purchase only investment grade debt. Investors could meet relative 'safety requirements' since securitisation is essentially a form of bankruptcy-remote secured lending (as assets are legally isolated in a SPE) with credit enhancement (or government guarantees for RMBS in some jurisdictions) that often resulted in the securities being highly rated (eg, AAA, AA, or A). However, as noted below, the reliance on credit ratings sowed the seeds of later difficulties, as many investors relied too heavily on credit ratings and effectively "outsourced" their due diligence to the credit rating agencies.

It is also worth noting that investor requirements for high-quality (highly-rated) assets created liquidity concerns during the crisis when policies or requirements forced investors to sell assets after ratings downgrades. This tested the liquidity assumptions about securitised products when many investors were simultaneously forced to sell, driving prices ever lower in a down market.

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[20] See Literature Review - Appendix 1, Section 1.

[21] See Literature Review - Appendix 1, Section 1.

2.2.2 Portfolio diversification

Investors could avoid exceeding concentration limits, both regulatory restrictions and internal limits on exposures to a single name, by purchasing securitised products. Further, investors could manage risk in the entire portfolio by holding securitised assets that had a low correlation with other components of the investors' portfolios, such as equities and corporate bonds. Also, investors could meet their internal portfolio diversification requirements by increasing the types of assets as well as the geographical location of the assets' origination. Synthetic securitisations also allowed investors to increase the variety and volume of instruments they could acquire without funding the credit exposure. However, as the crisis unfolded, investors learned that their expected diversification benefits were partially false and that in some cases the underlying assets were highly correlated. For instance, investors and many market participants wrongly assumed that geographic dispersion provided diversification in US residential mortgages.

2.2.3 Attractive yields

Securitised products helped investors achieve higher yield thresholds since the risk-adjusted return on ABS was typically higher relative to a similarly rated non-securitisation investment. In the period before the crisis, investors were seeking higher yields at the same time spreads in the broader fixed income markets were narrowing.

2.3 Misalignment of incentives and conflicts of interest

Securitisation markets before the crisis were also affected by what are termed 'misaligned incentives' or 'conflicts of interest'. These refer to situations where certain participants in the securitisation chain have incentives to engage in behaviour which, while furthering their own interests, is not in the interests of (and maybe detrimental to) others in the securitisation chain or the broader market. An example – discussed below – is where participants are incentivised to transact quickly and in high volumes without assessing or understanding the risks they (and others along the chain) face. These misalignments and conflicts are generally thought to have contributed to the loss of investor confidence in securitisation. They are also seen as a barrier to recovery of the market.

The literature review identified developments during the last decade which created the conditions for incentives and interests to be misaligned or in conflict.[22] These include the evolution of the originate-to-distribute model, the involvement of a relatively large number of parties in securitisation transactions, and the increasing distance between a loan's originator and the ultimate bearer of the loan's default risk.[23] The interviews confirmed the sources and conditions which led to these misalignments and conflicts.

The primary consequence of these misalignments and conflicts – identified in the literature review[24] and confirmed in the interviews - was a weakening of due diligence along the securitisation chain. This resulted in poorly-underwritten assets being securitised by originators and those securities being bought by many investors who did not understand the extent of the risks they were taking on.

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[22] See Literature Review – Appendix 1, Section III.

[23] See Appendix 1 – Literature Review, Section III.

[24] See Appendix 1 – Literature Review, Section III.

Originators/sponsors, in particular, weakened their asset screening and monitoring practices. This was particularly evident in the US private label MBS market where quality control incentives were minimal, and where many quality control reviews were not requested by arrangers or the results of such reviews were ignored. At the same time, strong investor demand for higher-yielding products encouraged issuers to move further down the credit spectrum since the prime mortgage market had been tapped out during the refinancing boom of 2003 to 2004. Additionally, many originators already had in place significant operational capacity that they wanted to continue to utilise.

This section sets out the sources of these misalignments and conflicts for issuers and originators, as well as investors.

2.3.1 Issuers and originators

The interviews confirmed that issuers were incentivised to focus on volume and speed to market at the expense of their asset screening and monitoring practices. The following were seen as contributing to this outcome.

Compensation programs

Compensation programs, which typically emphasised volume and growth, overshadowed concerns about the quality of underlying assets. Volume-based compensation at origination for the broker or loan officer and income booked at securitisation execution for the sponsor did not tie long-term performance or quality of underwriting to compensation. The emphasis on volumes and short-term gains extended throughout originator/sponsor organisations, from trading desks up to executive leadership. As a result, an increasing amount of poorly underwritten loans came to be securitised. The non-prime US residential mortgage securitisation market reflected this misalignment.[25]

The ability of financial institutions to transfer risk off the balance sheet and recognise upfront fees also encouraged the short-term focus of originators/sponsors. This played a role in further exacerbating the decline in underwriting and monitoring standards.

Many of the market participants interviewed agreed that compensation for employees in financial institutions and the model for revenue generation led to systematic misalignments. However, originators/sponsors tended to disagree with this assessment. Nonetheless, many financial regulators feel strongly that the alignment of such incentives is important to the future of securitisation. Incentive compensation programs and measures to better align parties' compensation with the long-term performance of assets is an area recognised by many supervisors and international oversight bodies as requiring reforms.

Reliance on representations and warranties

Other participants in the securitisation chain came to rely heavily on the representations and warranties made by originators, rather than on their own due diligence efforts. While representations and warranties allowed investors to return loans that failed contractual standards regarding collateral quality and compliance with legal requirements, they were not necessarily effective screening mechanisms. This was because arrangers and other participants who played multiple roles in the securitisation process were reluctant to trigger

[25] By contrast, this was generally not the case in regions such as Australia and certain European and other countries. Lenders there generally did not grow volumes by lending to subprime borrowers, though some subprime lenders did emerge in the year leading up to the crisis.

such loan putbacks. Furthermore, representations and warranties depended on originators having enough capital and liquidity to make good on their warranties, which may not always be the case (eg, many subprime residential mortgage origination firms in the United States that flourished at the market peak no longer exist). In effect, many representations and warranties were unfunded guarantees on the part of originators.

Adverse selection

Another undesirable incentive which may have contributed to weakened underlying asset quality was adverse selection – that is, incentives to choose riskier assets in constructing asset pools.

In cases where the assets were fixed term (eg, loans) rather than revolving (eg, credit card receivables), the originator could choose to select the lowest qualifying assets for securitisation because these would typically be the highest yielding. The literature review discusses the empirical evidence, which suggests that originators may have chosen riskier assets for securitisation.[26]

2.3.2 Investors

Conditions also existed before the crisis which together encouraged investors to exercise less discipline in the investment decisions they made.

Compensation programs

On the investor side, compensation programs for portfolio managers and hedge funds also often favoured short-term portfolio performance and with it a search for quick yield. They too were incentivised to maximise short-term gains and yields without considering long-term risk. Investors interviewed confirmed that these factors encouraged a short-term focus.

Reliance on credit ratings

The interviews confirmed that many investors chose to respond to growing product complexity in the market by relying heavily on credit ratings rather than conducting appropriate due diligence.

High demand for securitised assets, together with incentives on the supply side to grow volume, led to increasing complexity as originators/sponsors looked for more underlying assets to securitise. The literature review specifically references this increasing complexity, pointing to multiple senior tranche structures and highly-leveraged structures as examples.[27]

The complexities involved both the risks in the underlying assets (eg, subprime and pick-a-payment US residential mortgage loans) and increasingly leveraged and opaque securitisation structures (eg, resecuritisations). This was accompanied by limited available information about the risks and performance of underlying assets.

The interviewees stated that investors failed to adequately assess risk. This was in part due to the information asymmetry which existed and which tended to favour the supply side. A further factor was that many investors lacked the capability to properly assess the

[26] See Appendix 1 – Literature Review, Section III.

[27] See Appendix 1 - Literature Review, Section II.

information they had, particularly as product complexity grew. Participants in the United States observed that prior to the crisis many investors believed the cost-benefit of significant additional in-depth review beyond credit ratings was not justified. The literature review also suggests that investor over-reliance on credit ratings that were prone to cliff effects, coupled with credit rating inflation, contributed to the turmoil in the securitisation markets.[28]

'Tranche warfare'

The intricacies of the priorities of claims within the increasingly complex securitisation structures created conflicts between various classes of investors, and between investors, servicers and trustees. The tension between investor classes is often referred to as "tranche warfare". It is illustrated by the example of the senior investors who prefer a servicer to pursue foreclosure over loan modifications of underlying seriously delinquent mortgages (because the senior tranches get paid first), and the equity investors who prefer the servicer to modify the mortgage in order to keep receiving waterfall payments to avoid losses on their investment.

This issue of tranche warfare played out despite the existence of pooling and servicing agreements, which typically stated that the servicer should pursue the path that led to the highest net present value and that the servicer should service the loans for the interest of investors.

These types of conflicts can be amplified when securitisation parties share multiple roles, when certain technical provisions give certain investor classes the ability to overrule others in decisions which affect the waterfall, and when parties are not adequately directed or authorised to perform certain important functions. The latter point can be illustrated by the lack of substantive due diligence on underlying assets. There was no party explicitly authorised, or if authorised, not satisfactorily incentivised (eg, through adequate fees), to conduct due diligence on securitisations deal-by-deal. Ideally, this party would be independent and would conduct due diligence on a meaningful level (to an established standard) not only at inception but on an ongoing basis. This particular concept is not new as it was put forth by Moody's Investor Service after the crisis in a request for comment,[29] with the rating agency suggesting that perhaps the third party could be the trustee.

2.3.3 Regional differences

The degree of conflicts of interest and incentive misalignments varied depending on jurisdiction and the nature of the securitisation market. For example, many securitisers in the private-label mortgage loan market were poorly incentivised to conduct appropriate origination and monitoring due diligence. These securitisers transferred virtually all the risk to capital markets and received their compensation at the front-end, giving them little incentive to screen and monitor loans. In other regions where the securitisation market had typically been a bank-driven process, where the issuing financial institution typically originated and serviced the underlying loans, incentive misalignments may have been less pronounced.

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[28] See Literature Review – Appendix 1, Section II.

[29] Moody's Proposed Enhancements to US Residential Mortgage Securitizations: Call for Comments (March 2008).

2.4 Post-crisis environment – incentives in play and other fallout

The impact of the crisis on securitisation markets has been well-documented in earlier Joint Forum reports, as well as publications from various regulatory bodies/groups.[30] Our discussions with interviewees confirmed that, in simple terms, the securitisation market came to an abrupt halt in mid-2007 because investor confidence in securitisation as an asset class had evaporated. More importantly, our research further focussed on the incentives and disincentives at play in the aftermath of the crisis, shedding light on the prevailing barriers to a meaningful recovery in securitisation markets. These are discussed below from the perspective of originators/sponsors and of investors.

2.4.1 Originators/sponsors

The interviews highlighted that for originators/sponsors, a number of the incentives to securitise assets prior to the crisis remain today. The incentives to use securitisation as a source of funding and revenue generation have generally emerged from the crisis unscathed. However, as noted earlier, there has not been a meaningful return to private label securitisation.

The crisis also highlighted the potential legal risks for originator/sponsors, which may be influencing their thinking about returning to securitisation markets. This is illustrated by a number of lawsuits that have been brought for misrepresentation to investors of information about securitisation transactions. Some of these lawsuits include investors and bond insurers exercising "putback" clauses, which would require originating institutions to repurchase billions of dollars of non-performing mortgages that failed to meet representations and warranties standards set in contractual documents. As discussed earlier, representations and warranties were poor quality control tools, but they became more problematic when conditions weakened. For instance, putbacks were exercised by securitising firms when severe early-payment defaults struck in the subprime market, forcing many third-party subprime mortgage originators out of business. One firm interviewed stated that the current mortgage putback disputes could take years to settle and would involve protracted legal proceedings. The putback issue as well as recent problems with legal servicing and the processing of foreclosures could have significant implications, particularly in the US private-label mortgage market.

Other parties in the securitisation chain reacting to heightened legal risk sensitivities include the credit rating agencies, with some jurisdictions moving to remove existing liability protections and others creating rules that could impose the potential for fines for negligence.

2.4.2 Investors

The interviews indicated little change in the incentives driving investor return to the securitisation markets, however investors interviewed cited little immediate appetite to in fact return. While the desire for a higher yield on low risk investments still exists, securitisation markets are not currently meeting that demand.

More importantly, the general aversion to securitisation continues, particularly in the RMBS space. Serious questions about the quality of the assets underlying these products and the risks in the structures continue to make investment in securitisation products less attractive to investment managers. The crisis has created a renewed desire for more information

[30] September 2009 Joint Forum *Report on Special Purpose Entities*.

regarding the performance of the underlying assets and the structures; however, some investors, particularly less sophisticated ones, do not have the tools or skills to properly analyse the securities. These were typically the investors that relied heavily on others (eg, issuers, brokers, credit rating agencies, etc) when making their investment decisions.

Interviewees also noted that investors in the more complex, levered products (for example, highly-leveraged ABCP conduits and structured investment vehicles often cited as part of the "shadow banking system") were eliminated. These structures have unwound and disappeared, and have not been replaced.

It was also evident from a number of the interviews that some investors who were left holding an excess of undesirable securities following the crisis are hesitant to invest in any new issuances until that overhang is addressed. Furthermore, several interviewees noted that the pricing was unattractive in securitisation markets relative to certain other fixed income assets, and this contributed to a reluctance to invest in securitisation products. The lack of liquidity in secondary markets, as demonstrated during the crisis, is a further factor deterring some investors from re-entering the securitisation space.

Chapter 3 – Post-crisis regulatory initiatives

In response to the concerns raised by the crisis, governments, regulators and industry standard-setters have implemented and are considering a number of initiatives intended to re-establish securitisation on a sustainable basis. In addition, in some jurisdictions governments intervened to provide direct support for securitisation markets by acquiring ABS that met specified criteria.[31]

Regulatory initiatives to date have focused on measures to remove incentive misalignments and conflicts which distorted markets before the crisis and measures intended to support accurate pricing of credit risk. They have included the following:

(i) measures that directly address the conflicts of interest created by misaligned incentives within the securitisation chain,

(ii) measures that address information asymmetry within the securitisation process by increasing transparency of the securitisation structure,

(iii) measures that address inappropriate incentives created by accounting revenue recognition principles and compensation systems for securitisers or originators, and

(iv) reforms designed to enhance oversight of credit rating agencies governance and reduce regulatory reliance on ratings.

In addition, as reported by interviewees, recent proposals by the Basel Committee on Banking Supervision relating to capital, liquidity and leverage requirements, while not designed for the purpose of alleviating the problems of misaligned incentives discussed, may affect incentives within the securitisation process for both investors and originators or reduce the attractiveness of using securitisation as a vehicle for transferring credit risk.

This Chapter discusses initiatives that interviewees regarded as potentially having the most significant impact on the future viability of sustainable securitisation markets. In addition to a brief discussion of the specific initiatives, we also set out the views of the interviewees on these initiatives.

A more detailed discussion of regulatory initiatives is set out in Appendix 2 to this Report.

3.1 Regulatory initiatives relating to the securitisation process

3.1.1 Measures to promote risk retention

The G20 Leaders' statement from the Pittsburgh Summit (September 2009) recommended that securitisation sponsors or originators retain part of the credit risk of the underlying assets in order to induce a stronger alignment of the interests of the issuers of securitisations and the final investors.

IOSCO in its September 2009 report *Unregulated Financial Markets and Products* also recommended that consideration be given to requiring originators and/or sponsors to retain a long-term economic exposure to securitisations to appropriately align interests in the

[31] See government initiatives in Appendix 3.

securitisation value chain.[32] IOSCO recommended that the introduction of any retention requirement needed to be carefully tailored to appropriately align interests and suggested a number of principles to assist regulators in considering retention requirement approaches for their jurisdictions.[33]

The risk retention concept is intended to better align interests of the suppliers of securitisation (eg, originators/sponsors etc) and investors. While some degree of risk retention has already been in practice, formalising the requirement for 'skin-in-the-game' has the potential to incentivise originators, issuers and investors to properly conduct quality screenings, improve underwriting standards and adequately monitor for credit risk.[34] Although there are a number of alternative mechanisms for promoting the alignment of interests between securitisers and investors such as contractual representations and warranties, credit risk retention has emerged as a significant reform initiative in the European Union and the United States.

IOSCO's Task Force on Unregulated Financial Markets and Products Implementation Report, published in March 2011, found that 11 out of 12 jurisdictions surveyed had implemented, were implementing or were considering implementing some sort of long-term risk retention requirement in accordance with IOSCO recommendations.[35]

In the European Union, the new article 122(a) of the Capital Requirements Directive (CRD II) includes a minimum risk retention rate, according to which a credit institution shall be exposed to the credit risk of a securitisation position only if the originator, sponsor or original lender has explicitly disclosed to the credit institution that it will retain, on an ongoing basis, a material net economic interest which, in any event, shall not be less than 5 per cent of the total issuance of securitisation products. This new requirement came into force on 31 December 2010. On the same date, the Committee of European Banking Supervisors (CEBS)[36] issued guidelines on the application of these new requirements in the European Union.[37]

Also in the European Union, similar risk retention requirements will be included in the forthcoming regulation applicable to investment funds and insurance companies, as stated in the Directive 2009/138/EC of 25 November 2009, on the taking-up and pursuit of the business of Insurance and Reinsurance (known as Solvency II) and the recent proposal for a Directive on Alternative Investment Fund Managers.

In the United States, section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) requires a securitiser to retain at least 5 per cent of the credit risk of any asset that the securitiser, through the issuance of an ABS, transfers, sells, or conveys to a third party. The "safe harbour" provisions of the Federal Deposit Insurance Corporation's (FDIC) Securitisation Rule currently impose, among other requirements, a 5

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[32] IOSCO Technical Committee *Unregulated Financial Markets and Products: Final Report,* September 2009 Recommendation 1.1.

[33] Id, pp 18-19, paras 58-62.

[34] For the potential macroeconomic benefits of risk retention, see Financial Stability Oversight Council (2011).

[35] The IOSCO Report also found, among other things, that all member jurisdictions surveyed were expected to implement IOSCO recommendations in relation to increasing transparency through disclosure, requiring independence of service providers, and reviewing investor suitability requirements.

[36] Transformed to the European Banking Authority on January 1, 2011.

[37] http://www.eba.europa.eu/News--Communications/Year/2010/CEBS-has-today-published-its-final-guidelines-on-t.aspx#

per cent credit risk retention requirement for bank-sponsored RMBS and will be adjusted to match the inter-agency rules on risk retention required by the Dodd-Frank Act. It should be noted that the law provides for less than five per cent risk retention for certain asset classes where the underlying loans meet robust underwriting standards.

In Australia, the form of risk retention requirements is still under discussion. There is currently no proposal for mandatory risk retention in Canada but disclosure reforms will require disclosure of both representations and warranties (including putback clauses) and the extent of unhedged voluntary risk retention. Canadian securities regulatory authorities are monitoring the implementation of risk retention in the European Union and United States but are only requesting public comment on whether risk retention is necessary and appropriate in the Canadian securitisation market.

3.1.2 Measures to increase disclosure and transparency

Regulatory and supervisory authorities in most jurisdictions are taking steps towards providing securitisation products and markets with higher standards of transparency and more stringent disclosure requirements. This pro-transparency tendency is being or about to be adopted by a number of central banks and some securities regulators, while industry bodies are also promoting it. A number of jurisdictions are imposing disclosure requirements in the private or exempt market for ABS in addition to the public markets.

These measures reflect guidance provided by IOSCO in its September 2009 report on *Unregulated Financial Markets and Products* about increasing transparency about risk verification and risk assurance practices performed along the value chain and improving information available to investors on an initial and ongoing basis about asset pool performance.[38]

Making more and better information about the underlying assets as well as the waterfall and performance of securitisation structures available to investors will help to inform investors, and re-build investor confidence in the securitisation market. The greater availability of information would also help reduce the reliance on credit ratings agencies. The challenge is to find the right balance between more and better information. For instance, there had been a significant presence of raw data disclosure in the US subprime MBS market which did not prove to be particularly informative or user-friendly.

In the European Union, the amendments to the CRD from September 2009, which became effective on 31 December 2010, included new disclosure requirements in which sponsoring and originating credit institutions must ensure that prospective investors have readily available access to all materially relevant data on securitisation structures from the date of the issuance onwards.[39]

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[38] IOSCO Technical Committee, *Unregulated Financial Markets and Products: Final Report, September 2009,* Recommendations 1.2 and 2.1.

[39] Parallel to the EU regulation, several national authorities have recently pursued new rules to increase transparency in this field. The Spanish securities markets supervisor (CNMV) has recently implemented a pioneering specific regulation aimed at increasing the periodic public reporting requirements for securitisation funds that oblige all securitisation funds managers operating in Spain to file public and reserve statements that in some cases contain information at the individual-loan level. Prudential regulation issued in 2011 in Italy includes disclosure requirements both for intermediaries holding securitisation positions and for those exposed to the credit risk associated with a securitisation.

Besides securities markets regulatory authorities, the European Central Bank (ECB) and the Bank of England have recently launched initiatives to implement new disclosure requirements as a factor to be taken into account in the eligibility criteria within their respective collateral frameworks. The first loan-by-loan template requirement regarding RMBS was published by the ECB on 16 December 2010.[40]

In the United States, the Dodd-Frank Act has various provisions relating to disclosure for ABS issuers. One provision states that all issuers of registered ABS will be subject to the ongoing Exchange Act reporting requirements, without regard to the number of investors in any asset class. The Act also authorises the Securities and Exchange Commission (SEC) to suspend or terminate schemes for different classes of registered ABS under some terms and conditions, whenever such action is deemed necessary to protect investors or preserve the public interest. Prior to the Dodd-Frank Act, in April 2010 the SEC proposed certain revisions to the existing "Regulation AB" rules applicable to ABS transactions, which included some new requirements to increase the transparency in the private ABS market and its level of standardisation.

In Japan, the supervisory guidelines for securities companies were revised in order to ensure the traceability of underlying assets of securitised products in April 2008.

In Canada, securities regulators are also contemplating reforms to the existing securities regulatory framework for the issuance of ABS, including enhanced requirements for disclosure in prospectuses along the lines of the IOSCO Disclosure Principles for Public Offerings and Listings of ABS. Disclosure requirements are being considered for both the public markets and the private market. The latter is an important consideration as most ABS and ABCP is issued in the exempt market.

The Bank of Canada has also imposed minimum disclosure requirements on ABCP eligible as collateral under its Standing Liquid Facility. The proposed securities law disclosure requirements for ABCP are based on the Bank of Canada disclosure standards.[41]

There are a number of industry initiatives to encourage standardisation of documents and structures. In December 2009, the American Securitisation Forum (ASF) released "model" representations and warranties documentation designed to: (i) better align the incentives of mortgage originators with those of investors in mortgage loans, and (ii) significantly increase the transparency of representations and warranties by making them more easily comparable from transaction to transaction.[42] The Association of Financial Markets in Europe (AFME) has also worked actively with the ECB and the Bank of England on enhanced reporting standards for their respecitve repo programmes, which will become mandatory in late 2011. The Japan Securities Dealers Association (JSDA) enforced its self-regulation on communication related to the nature and risks of underlying assets, and also developed a standardised information reporting package to enhance the transparency of securitised product transactions in 2009.

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[40] This was followed by the introduction of loan-by-loan information requirements for CMBS and small and medium-sized enterprise transactions in April 2011.

[41] See http://www.bankofcanada.ca/en/financial/securities.pdf

[42] The model representations are part of the ASF's Project RESTART, an industry-developed initiative launched in February 2008 to help rebuild investor confidence in mortgage and ABS, restore capital flows to the securitisation markets and, ultimately, increase the availability of affordable credit to all American consumers and small businesses.

The ASF is currently working on a model pooling and servicing agreement.

IOSCO published a report in July 2010 on Transparency of Structured Finance Products (SFPs) concluding that there are overall benefits from enhancing post-trade transparency for SFPs, such as ABS, and jurisdictions should seek to enhance post-trade transparency of SFPs. The report sets out the factors that market authorities should use in determining which SFPs should be made transparent, and how this could best be implemented.

The transparency and pricing of ABS would also be assisted by the creation of a trading platform similar to the US Financial Industry Regulatory Authority (FINRA) Trade Reporting and Compliance Engine (TRACE) for corporate bonds. [43] Indeed FINRA Regulatory Notice 10-55 requires ABS transactions to be reported to TRACE effective 16 May 2011.

3.1.3 Addressing compensation misalignments

Compensation systems based on immediate, rather than on longer-term, financial results contributed to the misalignment of securitiser–investor interests. The compensation of those involved at the inception of the securitisation, and who would otherwise no longer be engaged after creation, could be disbursed over time in accordance with product performance. This would better align securitiser income to the longer-term performance of the securitisation.

There are efforts in the United States to tie the long-term performance of the underlying assets to compensation for the parties originating underlying loans, specifically in the residential mortgage space. More widely, there are further efforts to address incentive compensation programs across financial organisations in many member jurisdictions.[44]

3.1.4 New regulations on credit rating agencies

Not only did the crisis lead to a loss of confidence by investors and institutions in credit ratings used for securitisation, but more broadly revealed significant concerns regarding the potential conflicts of interest arising from the business model of credit rating agencies in the context of securitisation.

In Japan, in order to enhance transparency and disclosure related to credit ratings used for securitisation, rating agencies are required to publish information that may be deemed valuable in an assessment by a third party of the appropriateness of the credit rating; and stakeholders are encouraged to implement measures to enable a third party to verify the appropriateness of the credit rating in line with IOSCO's revised code of conduct (2008).

In both the United States and Europe, rating agencies will be subject to increased disclosure requirements going forward, designed to increase transparency in connection with structured finance ratings. The rating agencies themselves note that they have restructured their ratings processes to allow for more oversight and examination of decisions, and to improve the comparability of ratings across different investments. At the same time, while market participants have expressed skepticism of ratings, there are still instances of rating reliance and shopping, as in the case of US Re-REMICs, which are transactions that involve repackaging downgraded tranches of securitisations into new portfolios for securitisation.

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[43] TRACE facilitates the mandatory reporting of over-the-counter secondary market transactions in eligible fixed income securities. All broker/dealers who are FINRA member firms have an obligation to report transactions in corporate bonds to TRACE under an SEC approved set of rules.

[44] See Financial Stability Board (2009), *FSB Principles for Sound Compensation Practices* (Basel, FSB, April), available on the FSB's website.

Credit ratings are likely to continue to serve an important role in the market given the substantial existing information and analytical capacity asymmetries, in particular for smaller investors and illiquid instruments. Therefore, enhanced oversight of the rating agencies is essential, in line with the IOSCO Objectives and Principles of Securities Regulation (2010).

3.2 Basel III and securitisation

The revision of the Basel International Capital Framework (known as Basel III), will include some new elements that will potentially affect, to a significant extent, the incentives for banks to securitise loans and hold securitisation assets. Among the reforms introduced by Basel III, the following seem the most relevant for securitisation activity.

Capital requirements

There are several Basel III provisions that address areas of concern that were highlighted during the financial crisis and which supervisors determined were not adequately addressed under the previous framework. More specifically, in July 2009, the Basel Committee (the Committee) published *Enhancements to the Basel II Framework*.

These enhancements are intended to strengthen the framework and respond to lessons learned from the financial crisis. Because of the higher degree of inherent risk in resecuritisation exposures, the Committee significantly increased the risk weights applicable to such exposures under both the standardised and internal ratings based approaches relative to the risk weights for other securitisation exposures. As a result, the capital requirements for resecuritisations have risen dramatically. In addition, to address the lack of appropriate due diligence on the part of investing institutions and deter them from relying solely on external credit ratings, the Basel framework now requires banks to meet specific operational criteria in order to use the risk weights specified in the Basel II securitisation framework. Failure to meet these criteria for a given securitisation exposure will result in the exposure being risk weighted at 1,250 per cent, which is equivalent to a deduction from capital. The Committee also increased the capital requirements for short-term liquidity facilities under the Standardised Approach by increasing the credit conversion factor (CCF) for all eligible liquidity facilities to 50 per cent, regardless of the maturity of the liquidity facility. Prior to this revision, eligible LFs under one year were converted to an on-balance sheet equivalent amount by applying a 20 per cent CCF.

The Committee also has revised the market risk rules to increase the level of capital that must be maintained against securitisation exposures held in the trading book. In addition, the Committee is currently in the process of reviewing whether the risk weights for all securitisation exposures should be recalibrated, which could lead to higher capital requirements.

Liquidity ratios

The new Basel III framework includes provisions for new liquidity metrics.[45] Specifically, there are two liquidity ratios: (i) the *liquidity coverage ratio*, aimed at ensuring that a bank maintains an adequate level of unencumbered high quality assets that can be converted into cash to meet its liquidity needs (for a 30-day period) under an acute liquidity stress scenario; and (ii) the *net stable funding ratio*, which seeks to promote a stable medium and long-term funding of the assets and activities of banks. Although these ratios are subject to possible changes in

[45] Basel III: International framework for liquidity risk measurement, standards and monitoring, December 2010.

their calibration and both will undergo extended observation periods before they are fully phased-in, securitisations are considered as illiquid assets and as such are not included in the liquidity coverage ratio buffer of high-quality liquid assets.

3.3 Insurance sector capital rules

In the European Union, the implementation of Solvency II will also establish a new set of capital requirements for the insurance sector with increased risk-sensitivity. This is expected to impact capital requirements for investment exposures including securitisation exposures. In the United States, the NAIC has changed the process by which state-regulated insurance companies determine risk-based capital (RBC) charges, first on residential mortgage-backed securities (RMBS) in 2009 and then commercial mortgage-backed securities (CMBS) in 2010. The new approach requires modelling of each individual holding based on a common set of economic scenarios and is intended to reduce reliance on nationally recognised statistical ratings organisations (NRSROs).

3.4 Views on recent regulatory initiatives

The interviews revealed an overarching sentiment that regulatory changes, while important, will need to be complemented by improved macroeconomic conditions in order to take full effect. Furthermore, interviewees expressed the desire for regulatory changes to be made in a clear, timely and coordinated manner. Indeed, many expressed a belief that uncertainty about the direction, timing and implementation of regulatory proposals is currently a significant impediment to reviving the securitisation market.

3.4.1 Concerns about the ongoing regulatory process

A widely shared view among interviewees was that more coordination across different regulatory authorities is required to avoid a scenario of rules being adopted in different contexts, resulting in a form of over-regulation that impedes a responsible recovery of the securitisation markets. Several US market participants referenced the potential for "regulatory friction" and recommended a concerted approach to avoid such friction. For example, as prudential supervisors develop regulations on risk retention, the interaction of those risk retention regulations with regulatory capital requirements (taking into account consolidation treatment for securitisation transactions under Financial Accounting Standards Board 166 and 167 rules) may deserve consideration.

A few US interviewees stated that the close link between the accounting treatment for securitisations and how risk-based capital is calculated in the United States has been highlighted by recent accounting changes. The implementation of FASB 166 and 167 led to the consolidation of much of the securitised assets in the United States. Under the US risk-based capital rules, if assets are included on a bank's balance sheet, then it is presumed that significant risk transfer has not taken place and the bank is unable to apply the Basel securitisation rules. In other jurisdictions, there is a separation between the accounting consolidation treatment of securitised transactions and the applicable risk-based capital treatment. As a result, there is now a wide distinction between the capital requirements for similar securitisations in the US and non-US jurisdictions. At least one US market participant called for de-linking the accounting treatment from the risk-based capital treatment for securitisations.

3.4.2 Risk retention rules

Most European interviewees stated that retention requirements would have an impact in the context of the originate-to-distribute model (a model whose prevalence in Europe was only marginal), but not elsewhere as most originators typically retained more than 5 per cent of the net economic interest before the crisis. Nevertheless, some interviewees expressed their concern regarding the enforcement of CRD II Article 122(a) risk retention requirements.

In the United States, some interviewees (primarily issuers) expressed concern that the risk retention requirement under the Dodd-Frank Act is too complicated to implement and has significant accounting and regulatory implications that will harm the securitisation market and concentrate excessive risk in banks. On the other hand, some expressed that risk retention rules have minimal impact on underlying incentives. This is so, according to some interviewees, because originators already have substantial risk retention as well as reputational incentives that induce some "skin-the-game". Furthermore, some interviewees took the view that strong representations and warranties could be a more efficient way to ensure incentives alignment.

3.4.3 Transparency and disclosure rules

Most interviewees see recent initiatives from central banks and other national authorities to increase transparency and reinforce disclosure requirements as a positive step. However, many asked for a balanced approach that (i) takes into account both costs and benefits of providing disaggregated information; (ii) distinguishes between simple and complex products and sophisticated and unsophisticated investors (as information needs may vary considerably); and (iii) avoids biases across alternative financial products (eg in favour of covered bonds and against securitisations). Some interviewees doubted whether granular, loan level data on credit cards and auto loan ABS would be helpful to investors.[46] At the same time, certain important inputs, like the pre-payment rates on residential mortgages, would still remain unavailable for most investors.

Some interviewees were sceptical about the benefits of more transparency, pointing out that disclosure standards in the United States were already high before the subprime crisis and yet were not sufficient to prevent it. These interviewees believe that investors either ignored the disclosure because of the prevailing assumption about ever-increasing housing prices or relied too heavily on external credit ratings.

Meanwhile, some consensus among the interviewees emerged around the necessity of pursuing higher levels of standardisation in the design of securitisations and practices around it. In addition, some mentioned the usefulness of exploring ways to increase transparency in the secondary markets. With respect to the recent initiatives pursued by some central banks, some interviewees agreed that similar disclosure requirements should be imposed on covered bonds (as in the proposal by the Bank of England) in order to avoid regulation-driven biases across different financial products.

[46] See comments from issuers received by the SEC in response to its May 2010 proposals for reforming the disclosure requirements for the issuance of ABS in the private and public markets.

3.4.4 Spillovers from the new prudential regulation

Most interviewees in Europe were not opposed to more stringent capital charges for the riskier and more complex structures (such as re-securitisations), such as those recently proposed by the Basel Committee.

By contrast, most interviewees pointed to the potentially adverse effects of the new Basel III liquidity ratios on the demand for securitisation products by the banking sector. While recognising that secondary markets for securitisations froze during the crisis, many participants stated that the collection of other measures (such as increasing transparency, stronger incentives alignment, etc) directed towards improving the resilience and efficiency of these markets[47] should help to increase the liquidity of securitisation products. A common criticism was that the proposed calibration for liquidity ratios, which consider securitisation products as illiquid assets, would reduce the real liquidity of these assets, thus making them even less appropriate for consideration as liquid assets.

Some European interviewees pointed out that the superior performance of covered bonds in Europe since the beginning of the crisis can be partially attributed to the support of the ECB (through a €60 billion special liquidity facility) and the implicit and explicit support from a number of European countries which have put in place special measures to support banks' solvency and capacity to issue senior debt (through public capital injections and guarantees). Absent such special measures of support, some argued that covered bond secondary market liquidity would have also suffered during the crisis. In light of this, the proposed favourable treatment for covered bonds relative to ABS and MBS was not well supported by many interviewees.

Also in Europe, some stated that Solvency II may also reduce demand for ABS by increasing the capital required to invest in these assets, especially for the riskier tranches. This effect may be sizeable given that the insurance sector accounts for around 15 per cent of the total demand for securitisations in Europe.[48]

Finally, since new prudential regulations addressing securitisation will likely not be implemented worldwide at the same time, some warned about the potential for regulatory arbitrage across jurisdictions, which could favour a re-allocation of securitisation activities to jurisdictions with weaker prudential and supervisory standards.

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[47] See *Unregulated Financial Markets and Products, Final Report*, IOSCO September 2009, and *Disclosure Principles for Public Offerings and Listings of Asset-Backed Securities, Final Report*, IOSCO April 2010.

[48] The extent to which Solvency II will actually deter investors from investing in ABS products remains unclear.

Chapter 4 – Recommendations

The Joint Forum recognises the potential benefits of securitisation, including its positive effect on credit availability. At the same time, the Joint Forum acknowledges that reforms are necessary to address the incentive conflicts and misalignments highlighted during the crisis, which distorted risk transfer, increased structure complexity and opacity, and led to extreme leverage in the financial system. If such negative aspects of securitisation are limited through rules and supervisory frameworks that better align incentives and promote appropriate disclosures, the foundation should be in place for a sustainable and responsible securitisation market.

Existing literature and industry interviews suggest that meaningful recovery in the securitisation markets is not imminent. In addition, the findings of this report suggest that recovery is being hampered by a number of factors, including but not limited to:

- negative perceptions of securitisation as an investment class;
- an uncertain macroeconomic environment in a number of countries;
- concerns about the timing and content of regulation across sectors;
- unattractive yields relative to other debt market opportunities;
- illiquid secondary markets; and
- reduced confidence in ratings.

While altering the relative valuation of assets and stimulating macroeconomic conditions are not matters for regulators and supervisors, the Joint Forum believes that regulation and supervision are important for addressing other barriers to recovery. Regulators can establish a framework for securitisation that ensures activity is conducted in a prudent manner, continues to be an alternative funding source for financial institutions, and contributes to the availability of credit to support the real economy. Such a framework should both:

- provide conditions which support confident and reliable assessments of the risk adjusted returns available in the securitisation markets, as this forms the basis for investors' interest in structured finance; and
- mitigate information asymmetries and limit opportunities for misalignments of interest which distorted securitisation markets in the time before the crisis – such as the lack of incentives to conduct adequate quality control, the short-term focus driven by compensation structures, and regulatory arbitrage.

When designing and implementing a framework, authorities should be guided by two general principles.

First, *authorities should strive for consistency across global markets and sectors, taking into consideration local market circumstances, underlying business models, and each jurisdiction's legal system.* Such consistency should help limit opportunities for cross-border and cross-sector regulatory arbitrage for products having the same economic profile, and should create a level playing field for issuers, as well as investors. In addition, because the decisions of investors and originators to use securitisation markets will be influenced by the rules and regulations developed by banking, insurance, and securities regulators and other standard setters, these bodies should strive to ensure that their rules are appropriately

coordinated and consistent.[49] This coordination should consider the combined impact of regulation so as not to create unnecessary burdens that would impede the use of the securitisation markets as an alternative source of funding and investment.

Second, *relevant authorities should resolve the uncertainty as to the development and implementation of regulations and guidance in a timely manner*. Uncertainty about future regulation is seen by many market participants as an impediment to the recovery of the securitisation market. As a result, market participants should be informed of potential regulatory developments as early as conceivably possible and should be encouraged to provide constructive contributions to the regulatory process. Timely regulation should allow the market to adjust and adapt more quickly, provide greater certainty that would permit issuers to structure and issue new transactions, and provide investors with greater confidence to invest in securitised products.

Recommendation 1. Authorities should employ a broad tool kit to address misaligned incentives.

Any supervisory and regulatory framework should create conditions that properly align the motivations and incentives of the parties involved in securitisation to prevent the misaligned incentives described earlier from re-occurring. The framework should require originators and encourage issuers to perform proper due diligence to better understand the risks posed by the underlying asset pools that support securitisation transactions. As a result, investors should be better able to make reliable and informed decisions regarding the potential risk of loss and the risk adjusted returns on securitisation instruments. The Joint Forum is of the view that robust due diligence and better informed investors are vital to the concept of responsible securitisation and to restoring confidence in the securitisation markets.

In designing a supervisory framework, authorities should utilise a broad suite of measures to address the shortcomings that were identified during the crisis. More specifically, consideration should be given to a range of available tools tailored to individual regulated markets and to the particular misalignments that arose in those markets. The measures below could be used individually or in combination and we express no preference or priority as different circumstances may prevail in different jurisdictions:

- Developing measures requiring originators or securitisers to retain an appropriate amount of risk in the securitisation transaction (ie, “skin in the game”). It is also important that such risk retention be disclosed for each securitisation in order to facilitate retention verification. This information should be publicly available when it relates to a public securitisation offering and/or when the securitisation is listed on a regulated exchange.
- Raising origination and underwriting practices or standards for assets that are securitised, in line with earlier Joint Forum recommendations[50]. In relation to residential mortgages, this could include verification by lenders of borrowers' income and financial information, measures to ensure reasonable debt service coverage of mortgage obligations and realistic qualifying mortgage payments, requiring appropriate loan to valuation ratios, requiring sound collateral appraisal and

[49] See Report of the Financial Stability Forum on *Enhancing Market and Institutional Resilience*, April 2008, pp. 43-44.

[50] Note the *Differentiated Nature and Scope of Financial Regulation Report* and recommendations from the FSB Thematic Peer Review of Mortgage Origination and Underwriting Standards.

valuation processes and the use of mortgage insurance. Clear and effective standards would impose direct obligations on originators to undertake proper due diligence of securitised assets.

- Providing guidance to investors on due diligence practices for securitisation products. These practices should address investors' understanding underlying assets, the structure of the securitisation vehicle and how purchases of securitised products fits with the investor's investment mandate (if one exists). Consideration should be given, in particular, to applying relevant guidance developed by IOSCO in its July 2009 report on *Good Practices in Relation to Investment Managers´ Due Diligence When Investing in Structured Finance Instruments*.

- Imposing requirements on originators and issuers to strengthen representations and warranties about the underwriting and due diligence processes they have undertaken in relation to asset pools. This should create a contractual basis for incentives for originators to exercise greater discipline in selecting asset pools to securitise.

- Crafting measures to discourage over reliance on credit ratings as recommended by the FSB.[51] Such measures may reduce investor incentives to rely on information provided by others rather than exercising greater discipline and care in the investment decisions they make.

- Measures to improve documentation (eg, pooling and servicing agreements) to clarify the duties of advisors and service providers, including setting out obligations to manage conflicts of interest.[52]

- Providing guidance on (or mandating) remuneration schemes which are linked to the long-term performance and quality of the assets. Consideration could, for instance, be given to applying the spirit of the FSB's *Principles for Sound Compensation Practices*[53] for financial institutions on compensation programs which encourage effective alignment of compensation with prudent risk-taking in this context. Guidance could be developed, for instance, to encourage the design of compensation programmes for originators and issuers which reduce volume generation incentives while encouraging active due diligence of securitised assets.

With respect to requiring securitisers to retain specific amounts of credit risk exposure to their securitisation transactions and the underlying asset pools, a certain amount of flexibility around a regulatory backstop should be exercised, given the considerable heterogeneity across asset classes in securitisation chains, deal structure and incentive alignment mechanisms.[54]

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[51] In particular, Principle II of the FSB *Principles for Reducing Reliance on CRA Ratings* published in October 2010.

[52] Consideration could also be given to requiring disclosure of the existence of these contractual arrangements to investors. The issuing entity is usually not required to distribute these documents directly to investors or the general public, although it may be required to provide copies upon request. However, these documents may be available to the public through the facilities of the regulatory authority or the stock exchange on which the ABS are listed, or kept on file at the issuer's offices. The governing documents should indicate where these additional documents may be inspected and whether copies may be obtained.

[53] In particular, Principle 2 of the FSB *Principles for Sound Compensation Practices* published in April 2009.

[54] In FRB (2010) the Federal Reserve Board sets out a number of principles that can be considered in determining the appropriate framework for risk retention in the United States, CEBS (2009b) sets up four different methods to calculate the risk retention requirements that will apply to European credit institutions,

The implementation of risk retention mechanisms can be achieved by imposing the obligation on the securitiser to retain an economic interest in the assets being securitised or, in the alternative, imposing the obligation on investors by restricting their ability to invest in ABS that do not meet prescribed retention criteria.

Both approaches have their strengths and weaknesses in theory. On the one hand, putting the onus of compliance on the securitiser allows regulators to directly influence ongoing securitiser risk retention. On the other hand, putting the onus on investors may be a more practical solution if the securities held are issued outside the scope of the control of the supervisory authority responsible for the supervision of the investors in question. In either case, appropriate disclosure, verification, and review of related hedging activities is key to effective implementation.[55]

Recommendation 2. Authorities should encourage the markets to improve transparency.

Supervisory authorities should encourage the private markets to improve transparency regarding the assets being originated and securitised, and establish additional disclosure requirements. Recommendations have been made both by standard setters and industry to improve information available to investors and other market participants and also to regulators. Implementation of these recommendations is an important element of developing a sustainable securitisation market.

Disclosures should include detail on the underwriting standards used to originate the underlying asset pool; the resulting credit quality of the underlying assets; the structure of the transaction; and how the credit risk of the underlying asset pool has been transformed and allocated among investors.[56] It is important for investors to have relevant and reliable information about the asset pool and its performance at inception as well as on a regular basis. Access to such information should give investors confidence in assessing the risk adjusted returns offered in these markets.

Disclosure rules should also recognise differences in information needs between types of investors, in accordance with their differing levels of sophistication. For the average investor, loan pool stratification tables and statistical summaries may be sufficient, and IOSCO (2009a) makes a number of recommendations regarding ABS prospectus disclosure standards along those lines. Depending upon the asset type (eg, residential mortgages), granular loan-level data may be required. Although the idea of supplying loan-level data has met with some resistance because of the risk of violating data protection and privacy laws, these concerns can be addressed by “scrubbing” sensitive information from the data (ECB, 2011).[57] While increased disclosures should be helpful to investors in ascertaining the credit

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including allowing for the necessary implementation flexibility. For other recent reflections on this issue see CNMV (2010b), Fender and Mitchell (2009a and 2009b), and IMF (2009).

[55] Article 122a(1) of the CRD requires that the investor must verify that there is a disclosure about appropriate retention: "A credit institution, other than when acting as an originator, a sponsor or original lender, shall be exposed to the credit risk of a securitisation position in its trading book or non-trading book only if the originator, sponsor or original lender has explicitly disclosed to the credit institution that it will retain, on an ongoing basis, a material net economic interest”

[56] See FSB Thematic Review on Mortgage Underwriting and Origination Practices: Peer Review Report published March 17, 2011.

[57] Additionally, securitisers should be legally liable to bondholders for misrepresentations in disclosure provided either at issuance or an ongoing basis in order to deter the provision of incorrect or misleading information.

risk of the underlying asset pool and the security that has been purchased, the information will only be useful to the extent that it is actually used by investors.

Information on the structure and cash flow waterfall is also critical.[58] While such tools exist in the rating agency space as well as the public domain, the cost has been generally prohibitive for smaller investors.

Given the implementation of risk retention requirements in certain jurisdictions, disclosures regarding the amount of risk retention in a transaction; the party that retains the risk; the manner in which the risk was retained (eg, vertical or horizontal slice); and the duration of the risk should help assure investors that the underlying assets in the deal have been underwritten in a more prudent manner.

Additionally, greater transparency and detail regarding origination and the roles played by (and the relationships between) the various transaction counterparties (eg, trustees and servicers) would be helpful in identifying potential conflicts of interest. Such information might include how much each party in the transaction is being compensated, how compensation is calculated and the verification of risk assurance practices along the securitisation chain (IOSCO, 2009b). The US SEC's "Regulation AB" includes disclosure requirements along these lines. Improved post-trade price transparency would also help investor decision-making.

Improved transparency is in part a matter of the information which is provided to investors and, in part, how that information is provided. Particular note should, therefore, be taken of IOSCO's recent guidance, in the context of the public offering or listing of ABS (2009a), that information be presented in a clear and concise manner without reliance on boilerplate language. A table of contents and summary provided at the beginning of the document would enhance its accessibility to investors. This guidance could equally be applied to private markets.

Recommendation 3. Authorities should encourage a greater degree of document standardisation and a reduction of product complexity.

Reduced product complexity and greater document standardisation should assist in creating a sustainable securitisation market by reducing information asymmetries and creating a foundation for a more liquid secondary market for structured products. Greater document standardisation should allow investors to better understand and price the product and, therefore, be able to make more informed investment decisions. Less complex product structures should also enhance price transparency that would also support informed investor decision-making.

The challenge for authorities is to determine how to reduce complexity and require document standardisation, and to do so in a way which does not reduce incentives to innovate. At the very least, their role in this regard should be to support market participants' efforts towards greater standardisation of definitions, documentation, and disclosure requirements of securitisation transactions. This is a consideration for financial institutions (in sponsoring and structuring securitisations), legal firms (in preparing legal documentation for SPEs), investors (in considering the degree of disclosure and complexity of securitisation structures when

[58] For example, the US SEC has proposed to require ABS issuers to file on the SEC website an open source computer program that provides investors with a tool to analyse deal transaction cash flows. The Bank of England will also require that issuers of RMBS that are eligible at the Bank's Discount Window Facility make deal models publicly available.

purchasing notes), and authorities (in more generally considering the breadth and remit of regulatory activities and scope). In certain cases, market participants should be encouraged to include a sensitivity analysis of critical deal parameters in deal documentation in order to help investors adequately understand product mechanics and behaviour under varying conditions.

Information disclosure standards should also be internationally standardised, including basic definitions such as “defaults” and “delinquencies”. Such standardisation could allow information to be more easily compared. There is also scope to standardise some aspects of basic legal documentation, such as representations and warranties, and pooling and servicing agreements.[59] As mentioned previously, the ASF has initiated standardised documents.[60]

There remains some investor demand for bespoke complex products.[61] At the same time, it could be useful to standardise most securitisation products to some extent. This would facilitate the development of more liquid secondary markets and help avoid the market gridlock experienced during the crisis. Standardisation should foster enhancements and availability in analytics software, providing investors with more tools to assess their investment decisions. Such a market initiative, if implemented, could include a market convention that requires usage of the aforementioned central bank reporting standards for term transactions that utilise the label. Furthermore, valuation difficulties could be reduced if securitisation products were simplified. In an example of how incentives to standardise disclosure and structures could be provided, the European Financial Services Roundtable and AFME, in consultation with other associations, are exploring the merits of a market-led initiative to promote market standards by means of an independent entity that grants a securitisation label currently called Prime Collateralised Securities (PCS).

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[59] Pooling and servicing agreements govern the relationship between servicers and investors/lenders.

[60] See Chapter 3, section 3.1.2.

[61] It should be noted that some product complexities were designed to bolster the creditworthiness of the senior tranches - such as excess spread traps and performance triggers. Some of the excess spread - the difference between the interest received from the underlying loan portfolio and what is paid out to bondholders - is trapped in a reserve account to cover defaults and provide additional credit enhancement. However, portions of these reserve accounts can accrue to securitisers if the loan portfolio performance exceeds preset trigger levels.

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Appendix 1

Securitisation incentives literature review

This Appendix focuses on the motives and incentives that have led originators to securitise assets, as well as on the potential for conflicts of interest between the intervening parts in a securitisation chain. A central objective of this piece is to provide an overview of the main findings in the empirical branch of the literature in this field. To this aim, we first describe the outcome of some recent empirical studies that have tried to identify the main incentives for financial institutions to securitise. We then examine a number of articles that have identified some potential sources of conflict between the interests of originators and those of the final investors.

I. The motives for securitising: some empirical findings

In spite of the rapid growth of securitisation over the last expansionary phase of the world economy, there still persist some uncertainties around the specific motives that led financial entities to securitise on such a large scale. The literature in this field has tried to identify quantitatively the relative importance of a number of motives to securitise: credit risk transfer, loan portfolio diversification, increase of liquidity or funding, reduction of financial costs, regulatory capital arbitrage, improvement of profitability or performance, fee income rising, etc.

The empirical research has usually grouped the motives in the previous list into two broad sets: the search for low-cost sources of financing and the exploitation of opportunities of regulatory arbitrage. In what follows, we first describe the available evidence on the intensity of these two central motives and then briefly refer to some papers that have tried to isolate the relative importance of some other reasons to securitise.

The intuition behind the low-cost financing motive is straightforward: when a financial institution is looking for funding, securitisation is a direct way to raise cash in exchange for otherwise illiquid assets. Of course, this motive will be more relevant insofar as the total cost of this financing channel, including not only the explicit cost (eg the contractual interest rate) but also implicit costs such as financial distress costs (eg. debt restructuring or bankruptcy costs) is lower than that of other traditional financial instruments like deposits or debt.

As regards the regulatory arbitrage motive, the idea is that financial institutions may find it optimal to securitise in order to reduce their capital requirements. The rationale behind this kind of strategy is the following: if two assets with different risk-profiles are subject to identical capital requirements, a bank could raise its overall level of risk without facing a parallel increase in its regulatory capital requirements by selling the assets with lower risk and retaining the riskier ones.[62] Clearly, securitisation, which essentially consists of the transfer of assets outside the originators' balance-sheet, could have been exploited to take

[62] This assumes that the regulatory capital calculation methodology is not capturing the full dimensionality of the risk, which was more likely the case prior to the introduction of Basel II, but it could also involve the exploitation of differential banking and trading book treatment.

advantage of such opportunities to minimise the needs for capital given a portfolio of assets. These strategies would have been especially appealing under the Basel I capital framework since capital requirements were not sensitive to the actual levels of risk in the banks' portfolios.

In order to test the existence of incentives to pursue regulatory capital arbitrage, the literature has usually considered two working hypotheses. First, securitisers who aim to exploit capital arbitrage opportunities should retain large portions of the riskiest assets. Second, the presence of this motive should imply a negative relationship between capital ratios and securitisation volumes since those institutions facing binding or nearly binding capital requirements would have stronger incentives to securitise.

Ambrose et al. (2005) analysed securitised mortgage loans in the United States from 1995 to 1997 and found that these mortgages have experienced lower ex-post defaults than those retained by the originating institutions in their portfolios. Agarwal et al. (2009) came to a similar conclusion using more recent US mortgage origination data (2004 to 2008), as did Benmelech et al. (2009) in the market for collateralised loan obligations (CLOs). These findings could be equally consistent with the idea that banks securitise assets for arbitrage or, alternatively, with the presence of reputational concerns, as both would predict that securitised loans should have lower default rates than loans retained by originators. Krainer and Laderman (2009) exploit a more recent data set covering the period 2000-2007 of "private-label" securitisation transactions (ie excluding government-sponsored enterprise transactions) and find the opposite evidence to that reported by Ambrose et al. (2005) and Agarwal et al. (2010). That is, original lenders tend to retain the least risky loans which, in principle, would be at odds with the regulatory capital arbitrage motive.

Minton et al. (2004) analyse US 1993 to 2002 private-label transactions to test whether securitisation was then driven by efficient financial contracting (ie aimed at reducing the overall firm's financing costs) or by regulatory arbitrage. Their findings provide stronger support to the former hypothesis; that is, the main reason for banks to securitise over that period was the reduction in financial distress costs rather than the exploitation of regulatory arbitrage opportunities.

Interestingly, these authors compare various types of financial institutions facing different financing costs and levels of risk to find that unregulated financial companies and investment banks are more likely to securitise when compared to commercial banks and savings institutions. Since the former are not subject to the same capital requirements whereas the latter face lower costs of financial distress (due to the presence of implicit or explicit public guarantees, like deposits guarantee schemes), they conclude that regulatory capital arbitrage was not the main driver of securitisation in the sample.

Bannier and Hänsel (2008) use a research strategy in line with that of Minton et al. (2004) but analysed CLOs issued by European banks from 1997 to 2004. They find that securitisation seems especially appealing for banks with high levels of risk and low liquidity, which, according to their study, are the main explanatory factor for the decision of whether to securitise and by how much.

Martin-Oliver and Saurina (2007) employ data coming from Spanish financial institutions (commercial banks, saving banks and credit cooperatives) that cover the entire boom period that preceded the crisis.[63] They show that, on average, the regulatory capital arbitrage

[63] In Europe, Spanish pre-crisis securitisation volumes were exceeded only by those in the United Kingdom.

motive was not a key motivation for the banks when deciding whether to securitise, but once they had decided to do so, those with low levels of capital tended to issue a larger amount of securitised assets in order to raise their capital ratios.[64] Cardone-Riportella et al. (2010) and Agostino and Mazzuca (2009) find similar results that point towards the relatively low importance of the regulatory capital arbitrage motive for Spanish and Italian banks, respectively.[65]

Other possible reasons that could help rationalise the rapid growth of securitisation from the supply side have been empirically analysed to a lesser extent. Dechow and Shakespeare (2009) examine US transactions between 1987 and 2005 and conclude that accounting "window-dressing" is an important side-benefit of securitisation – "gain on sale" treatment increases earnings and reduces leverage. On the other hand, Krahnen and Wilde (2006), Hänsel and Krahnen (2007) and Uhde and Michalak(2010) conclude that the European issuance of collateralised debt obligations (CDOs) tends to raise the systematic risk (equity beta) of originating banks in Europe. This evidence, coupled with evidence that it was common for European securitisers to retain some of the risk associated with their transactions, implies that credit risk transfer was not an important securitisation driver.[66]

In summary, given the potential conjunction of several motives in a particular securitisation, it is difficult to disentangle empirically the relative importance of such potential motives. This may explain the apparent lack of consensus in the empirical literature in this area. Certain of the results surveyed here nevertheless deserve some emphasis:

- Although it is popular to point to regulatory capital arbitrage as a main securitisation driver, it has garnered little empirical support (although some papers have detected it);
- Funding cost reduction and other motives directly related to the pursuit of economic (as opposed to regulatory) efficiency seem the most relevant motives faced by securitising institutions during the period that preceded the current collapse of the securitisation markets.

II. The role of product complexity and rating arbitrage

Securitisation typically involves the application of structured finance techniques that divide the cash flows from the underlying pool of assets into "tranches", or slices.[67] Tranche holders are paid in a specific order, starting with the "senior" tranches (least risky) working down through various "mezzanine" levels to the "equity" tranche (most risky). Hence, if the equity tranche is depleted, then payments to the mezzanine tranche holders are reduced, and so on

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[64] They find just an exception: capital arbitrage becomes important in the decision to securitise when using only loans to small and medium sized firms. Similarly, Uzun and Webb (2007) also find this last exception for credit card securitisation in the United States from 2001 to 2005.

[65] Cardone et al (2009) analyse the period 2000-2007, while Agostino and Mazzuca (2009) use a data set that covers 1999 to 2006.

[66] Franke and Krahnen (2005) find that it was common for European securitisers to retain the first-loss tranches of CDOs. Cardone-Riportella et al. (2010) find that funding and liquidity considerations, plus improving accounting ratios, were the main securitisation motivators for Spanish banks. Chen et al. (2008) show that risk retention in various forms was common in securitisation transactions by US banks from the second quarter of 2001 to the fourth of 2006.

[67] In the case of synthetic securitisation transactions the cash flows are comprised of the premia on the underlying credit default swaps less any credit event-contingent outflows.

up to the senior tranches. The amount of loss absorption (or "credit enhancement") provided by the equity and mezzanine tranches is structured so that it should be very unlikely that the senior tranches do not receive their promised payments.

Gorton and Pennachi (1990), Boot and Thakor (1993) and Plantin (2004) suggest that tranching adds value by solving an asymmetric information problem among heterogeneous investors with varying amounts of information about, or differing abilities to determine, the values of the securities and the underlying assets. Securitisers can focus "information-insensitive" senior tranches on less sophisticated investors, and information-sensitive mezzanine and equity tranches on hedge funds and other sophisticated investors. The empirical research of Firla-Cuchra and Jenkinson (2006) also suggests that market segmentation drives the issuance of multiple mezzanine tranches – ie to suit particular investor tastes for the information-sensitive tranches.[68]

An alternative explanation for tranching relates to credit rating inflation and arbitrage, with Coval et al. (2009b) and Brennan et al. (2009) showing that structured credit products have significantly different credit risk profiles from rating-matched traditional fixed-income securities. More specifically, according to Coval et al. (2009b) default probability-based rating methodologies, such as those used by Fitch Ratings and Standard & Poor's, effectively overrate senior CDO tranches, because they do not adequately account for systematic risk and senior tranche losses are confined to the "worst" economic states, where payoffs are most valuable (Arrow, 1964 and Debreu, 1959). Brennan et al. (2009) supports this result under more general assumptions and demonstrates the ratings-related advantages of maximising the number of mezzanine tranches, a result that applies to default probability-based and expected loss-based (eg Moody's) rating methodologies.[69] Bolton et al. (2009) suggest that rating agencies will tend to overrate securities during booms, when the proportion of unsophisticated investors is higher, and the risk of getting caught is lower.

Empirical evidence of structured credit rating inflation is substantial. Ashcraft et al. (2010) and Mathis et al. (2009) provide evidence that rating standards for AAA-rated residential mortgage-backed securities (RMBSs) deteriorated during the boom years. Hull and White (2010b) show a similar pattern for CDOs backed by mezzanine tranches of RMBSs. Griffin and Tang (2009) detect evidence that rating agencies were making subjective judgment calls to inflate CDO ratings beyond what were implied by their rating models. Also, Becker and Milbourn (2010) show empirically that rating quality is inversely related to the number of active rating agencies. Specifically, the authors argue that stronger competition among rating agencies, which they attribute to "cherry picking" strategies adopted by issuers, tends to significantly raise the average level of ratings.

This rating inflation may have been exacerbated by issuer "rating shopping" and investor rating overreliance. For example, Skreta and Veldkamp (2009) use a theoretical model to show that the incentives and rewards for rating shopping (ie issuer cherry picking the highest rating(s) for each tranche) increase with the complexity of the securities. Rating shopping has been notoriously difficult to empirically detect. Benmelech and Dlugosz (2009) show that tranches rated by only one credit rating agency (and Standard & Poor's in particular) were

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[68] Also, Riddiough (1997), DeMarzo and Duffie (1999) and DeMarzo (2005) show how pooling and tranching may play a key role in mitigating adverse selection problems faced by less sophisticated investors.

[69] Similar points regarding structured credit rating inflation have been made by Hamerle et al. (2009), Krahnen and Wilde (2009), and Hull and White (2010a). The importance of distinguishing between default probability- and expected loss-based structured credit ratings was covered in Fender and Kiff (2005).

more prone to downgrades than multiple-rated tranches from 2005 to 2008,[70] and Morkötter and Westerfield (2009) find patterns in CDO ratings issued between August and December 2006 that are consistent with the theoretical rating shopping predictions of Fender and Kiff (2005).[71] More recently, rating shopping has been observed in the US market for resecuritised senior residential mortgage-backed securities (ie "Re-Remics").[72]

None of this would be a problem were investors to see through the rating inflation. Adelino (2009) does in fact find evidence of investor rating overreliance for AAA-rated tranches, however, the empirical work of Vink and Fabozzi (2009) suggests that the degree of overreliance may be overstated. Nevertheless, the Joint Forum (2009) "stocktaking" survey found that reliance on ratings was widespread in financial sector regulations and legislation. This last argument has been further explored by Sy (2009), who analyses several channels through which legislation, regulations and supervisory policies have increased over time their reliance on external ratings.

In addition, a US SEC (2003) survey found that most mutual funds, pension funds, insurance companies, private endowments, and foundations use credit ratings to comply with internal by-law restrictions or investment policies that require certain minimum credit ratings. In addition, fixed-income portfolio manager performance is often benchmarked against standard indices that are usually constructed on the basis of credit ratings. For example, only investment grade-rated (BBB-/Baa3 or better) instruments make it into the Barclays Euro Government Bond indices. The SEC (2003) survey also noted the widespread use of "ratings triggers" in financial contracts that terminate credit availability or accelerate credit obligations in the event of specified downgrades. Hence, a certain amount of rating reliance seems to be built into the market's infrastructure.

In summary, the early research on securitisation and structured finance suggested that product complexity, including tranching, plays an important role in tailoring to investor sophistication and tastes. Hence, it should not be surprising that the senior-most tranches of securitisation transactions came to be held by investors who relied largely on credit ratings for their risk assessments. Also, given the mechanistic nature of typical structured credit rating methodologies, it should be expected that issuers will seek to minimise the cost of issuing these securities, possibly to the detriment of investors. The impact of these tendencies was exacerbated by:

- Multiple rating agencies with slightly differing and transparent methodologies that were prone to being gamed by rating shopping securitisers.
- Rating methodologies that based ratings on the first moments of default probability distributions that took little to no account of tail risks.

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[70] Standard & Poor's was know to use a more lenient correlation assumption in its CDO rating methodology, which gave them a dominant share of the CDO rating market (Adelson, 2006). In the Benmelech and Dlugosz (2009) data, 69.72% of the tranches rated by only one agency were rated by Standard & Poor's, versus 10% by Moody's and 20% by Fitch Ratings.

[71] Fender and Kiff (2005) predict that "thick" senior tranches are more likely to be rated by Moody's, and "thin" mezzanine tranches by Fitch Ratings and Standard & Poor's. This is based on the fact that Moody's bases its ratings on expected losses, and the other two on default probabilities.

[72] For more on Re-Remics, see Kiff (2010). In 2009, DBRS had a 43% share of ratings in this market versus a 7% share of the market for regular mortgage-backed securities in 2007. DBRS bases its ratings on default probabilities, which tend to rate the mezzanine tranches of these securities higher relative to other methods. The Moody's share of this new market was only 5% in 2009, versus 80% in 2007.

- Investors and other market participants, including central banks, who were over reliant on credit ratings, so that the impact of certain downgrades was magnified by forced liquidations of the securities in question.

III. Conflicts of interest along the securitisation chain

One of the central features of the securitisation markets is the need to involve a relatively large number of parties in the securitisation process. Under this scheme, lenders specialise in the production of mortgage loans, but do not maintain a lasting exposure to the loans after passing them on to investors. By creating distance between a loan's originator and the bearer of the loan's default risk, securitisation may have potentially reduced lenders' incentives to carefully screen and monitor borrowers since these activities are costly, and lenders may not directly benefit from heightened screening of loans that likely will be securitised. Even when originators were not able to sell in the market the riskiest asset backed securities issued (equity tranches), the existence of liquid markets for credit derivatives would allow them to hedge these exposures retained in their balance-sheet, weakening even more their incentives to monitor borrowers during the lifetime of the transaction. Thus, a central question here is whether securitisation has reduced the incentives for lenders to carefully screen borrowers.[73]

In this context, some recent articles have examined empirically the quality of securitised loans in order to establish the effect of securitisation on screening behaviour. The majority of this literature has found a decline in the quality of securitised loans during the years before the crisis, but the evidence is not overwhelming:

- Krainer and Laderman (2009) use a loan-level data set of mortgage loans originated in California between 2000 and 2007. Californian mortgages have since been among the worst performing loans, and the authors analyse whether securitisation somehow eroded the underwriting standards of these loans. They observe that the underwriting standards for mortgages going into private-label securitisations tended to be of poorer quality than those not securitised, and mortgages securitised with the government-sponsored enterprises (GSEs). They also provide some evidence of the decline in underwriting standards of securitised mortgages: the loan-to-value ratio (LTV) increased modestly over the period, and the subprime share of total originations climbed from about 1% in 2002 to a peak of 10% in 2006.
- Similarly, Demyanyk and Van Hemert (2011) also find evidence of a reduction in the loan quality when analysing US subprime mortgage loans originated between 2001 and 2007. Specifically, they uncover a downward trend in loan quality, determined as the loan performance adjusted for differences in loan and borrower characteristics and macroeconomic circumstances, as well as a deterioration of lending standards.
- Purnanandam (2011) finds that banks with high involvement in the pre-crisis private-label mortgage securitisation market expended insufficient resources on loan screening and originated excessively poor quality loans. Using data on loan originations from the third quarter of 2006 to the first quarter of 2008, he also found

[73] Ashcraft and Schuermann (2008) provide an exhaustive analysis of the potential channels through which such conflicts of interest between the intervening parts may arise along the securitisation chain.

that these effects were strongest for capital-constrained banks with heavy reliance on wholesale term debt funding.

- However, Bhardwaj and Sengupta (2009) find little evidence that lenders apply looser lending standards to securitised mortgage loans. They examined the actual underwriting standards on subprime loans that were securitised between 1998 and 2007 and found that, although lenders loosened some standards (eg income documentation standards) they tightened others (eg LTV ratios and credit scores). On balance, they found that, if anything, subprime lending standards improved over time, although they admitted that they could not rule out the possibility that lending standards were poor to begin with. In addition, it is very difficult to account for the interacting effects of the various quantitative default risk indicators (eg, "risk layering").

- Keys et al. (2010) show that loans to borrowers with scores just above certain key cutoff points are much more likely to default than those to borrowers with scores just below. For example, a FICO score below 620 has usually been associated with subprime loans, and they posit that mortgage loan securitisers are more willing to purchase loans made to borrowers just above 620 than just below.[74] Hence, their theory says that lenders will more intensely screen applicants with scores below the cutoff, because they are more likely to have to keep the loans on their books. They then show that there are discontinuities in the default rates around these cutoffs – eg loans to borrowers with FICO scores just above the 620 cutoff tend to default at a rate much higher than loans to those with scores just below. They cite this and other similar discontinuities as evidence of lender/securitiser moral hazard. Bubb and Kaufman (2009) agree that lenders will more intensively scrutinise loans to borrowers with scores below the cutoff, but they show that such loans were also less likely to be securitised.[75] Hence, they say that securitisers were aware of the lender moral hazard issues and took steps to mitigate them.

- Rajan et al. (2010) show that securitisation incentivises lenders to originate loans based on the default risk metrics that are reported to investors, even if "soft" information and other unreported variables imply higher default risk. They warn that regulations that rely on such models to assess default risk may therefore be undermined by the actions of market participants.

Besides the potential lack of due diligence on the side of originators, lenders may have incentives to securitise loans that are riskier than the loans they retained in their portfolios. In a perfect market, reputation concerns should prevent a bank from cherry picking and/or selling "lemons" on a systematic basis to outside investors, mostly non-bank financial institutions and hedge funds. Hence, the key point is to test whether lenders take advantage of this informational edge and pass lemons on to investors, while retaining the safest loans in their own portfolio; or, whether they offer the entire pool of loans to investors largely followed a randomised selection rule to create the underlying pool of assets. The following papers tried to shed light on these questions:

- Berndt and Gupta (2009) use data from all US publicly listed firms that borrowed in the syndicated loan market from 2000 to 2004. Their results show that borrowers

[74] FICO scores are produced by three firms (TransUnion, Experian and Equifax) under a license held by Fair Isaac Corporation. A score below 620 has usually been associated with subprime loans.

[75] Actually, Bubb and Kaufman (2009) found that private-label securitisers seem to be aware of and mitigate lender moral hazard, but that the government-sponsored agencies seemed less aware of and took fewer steps to mitigate it.

with an active secondary market for loans significantly underperform other banks' borrowers, which is consistent with two possible explanations. First, banks may be selling loans of borrowers for whom they have negative private information (ie "lemons"), and keeping the good loans for themselves. Second, due to the reduction in monitoring, borrowers may be more prone to make suboptimal investment and operating decisions.

- Downing, Jaffee, and Wallace (2009) analyse the existence of adverse selection problems in the market for mortgage-backed securities. To this end, they use a data set of sales of mortgage-backed securities (Freddie Mac Participation Certificates, or PCs) to bankruptcy remote special purpose vehicles (SPVs) over the period 1991 through 2002 and find empirical support in favour of the hypothesis that the assets sold to SPVs are of lower quality ("lemons") compared with assets which are not sold to SPVs.[76] Calem (2010) focuses on 2005 to 2006 subprime loan data, and also finds signs of "cherry picking" behaviour by securitisers.

- Elul (2009) examines this issue by using a loan-level data set ranging from 2003 to 2007, including mortgage loans that were privately securitised, sold to the GSEs, and held in portfolio in the United States. Although he finds evidence that privately securitised prime mortgage loans perform worse than non-securitised loans, this evidence is not found for subprime loans. According to the author, these differences may have been driven by two factors. First, investors scrutinised more subprime loans, whereas prime loans were presumed to be of higher quality. Second, very few subprime loans were actually retained by their originators since the objective of these lenders was to securitise the entire portfolio. However, any such conclusions seem very sensitive to the research methodologies. For example, the aforementioned Agarwal et al. (2010) uses the same data as Elul (2009) over a 2004 to 2008 timeframe to conclude that default rates on securitised loans are lower than on retained loans.[77]

It used to be, and still was recently, quite common for securitisers to retain an economic interest in the issued securities and/or the underlying assets, which should result in a better alignment of interests with investors. Note that the literature on securitiser incentives discussed above was focused on US private-label mortgage lending, where risk retention was minimal. However, credit risk retention, in one form or another, is more prevalent in other securitisation markets. For example, Chen et al. (2008) posit that rates of contractual securitiser retained interest in their securitisations (in par value terms) are positively related to the extent and external verifiability of the underlying credit risk. They measure two forms of contractual risk retention for 54 US banks from the second quarter of 2001 to the fourth of 2006; subordinate (first loss or equity) tranches, and excess spread (or "interest-only strips").[78]

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[76] In related work, Oldfield (2000) argues that the structuring activity segments customers and creates price discrimination by selling different tranches at different prices which could generate significant profits for the informed underwriters.

[77] Ambrose et al. (2005) also conclude that securitised loans outperform retained ones, but using 1995 to 1997 data from a single lender. Also, Agarwal et al. (2010) find that the performance gap between securitised and retained loans deteriorates towards the end of their 2004 to 2008 sample period.

[78] The "excess spread" is the difference between the interest received from the underlying loan portfolio and what is paid out to bondholders. Some of this is usually trapped in a reserve account to cover defaults and provide additional credit enhancement. Portions of these reserve accounts can accrue to securitisers if the loan portfolio performance exceeds preset trigger levels. Excess spread accounts are effectively subordinated to first-loss tranches.

Table 1 shows that average retention rates are broadly consistent with Chen et al. (2008)'s hypothesis. That is, the contractual retention rate on commercial mortgage-backed securities (CMBS) is higher than those on MBSs and consumer loan-backed securities. (Chen et al. (2008) assume that commercial loan credit risk is very high and its external verifiability is low.) They had expected to observe higher retention rates on ABS (high risk but relatively easy to verify) than on MBS (low perceived risk (at the time of origination) and high verifiability), but they posit that they are not capturing non-contractual risk retention (see below).[79]

Table 1

Contractual Credit Risk Retention Rates (percent of par issued)
(Source: Chen et al., 2008)

	MBS	**ABS**	**CMBS**
Excess spread	1.07%	4.42%	0.92%
Retained tranches	7.72%	4.16%	11.54%
Total	8.79%	8.58%	12.46%

For revolving loan securitisations (ABS backed by credit card receivables and home-equity credit lines), securitisers often provide "implicit recourse" when the underlying assets underperform. Securitisers provide implicit recourse by increasing credit enhancements, buying underperforming loans at a price greater than fair value and selling assets to the special purpose entity (SPE) for less than fair value. Bank regulators officially frown on the use of such implicit recourse, because it violates key "true sale" principles that permit the removal of the loans from bank balance sheets, and the associated regulatory capital relief. The frown is "official" because, despite frequent regulatory warnings, implicit recourse remains commonplace, probably because the "smoking gun" is so hard to prove (Calomiris and Mason, 2004 and Higgins and Mason, 2004). For example, it is easy to hide recourse transactions in the regular removals and contributions of loans from SPEs in revolving loan securitisations.[80]

However, there is little research that tests the effectiveness of such retention on incentive alignment and securitisation transaction performance. However, anecdotal evidence suggests that the kind of rampant "bad behavior" seen in US non-prime securitisation transactions is rare in other types of transactions. However, the analysis of FRB (2010) suggests that in the US securitisation market, sectors in which incentives were better aligned (eg, ABS backed by auto loans and leases, credit card receivables, and equipment loans and leases)

[79] According to CEBS (2009), based on 2006 issuance, UK prime mortgage securitisers retained an average of 32.9% of the issued securities, and excess spread accounts averaged 1.5%. Based on UK prime MBS outstanding at the end of September 2009, securitisers were obliged to retain between 4.6 and 14.4%, and excess spread accounts ranged from 0.0 to 1.0% (Source: JP Morgan). CEBS (2009) did not estimate tranche retention amounts for UK non-conforming RMBS transactions, but excess spread accounts ranged from 1.0 to 2.1%. Excess spread accounts on prime RMBS originated in Spain ranged from 1.3 to 2.3%, and 2.1 to 11.0% in France.

[80] Revolving loan securitisations are usually subject to contractual accelerated amortisation provisions ("clean-up calls" and "removal of accounts provisions"). Also, most credit card receivable and home equity line of credit securitisations use master trusts that issue multiple series of securities backed by the same loan pool. Hence, a securitiser can provide implicit recourse by issuing a new series of securities backed by more or higher quality loans.

performed better than those in which incentives were poorly aligned (RMBS). Also, Demiroglu and James (2011) show that the ex-post performance of US RMBS transactions is positively related to the degree of affiliation between loan originators and securitisation sponsors.

One particular ongoing concern is the conflict of interest arising from the issuer-pay credit rating business model. Currently, almost all credit ratings are paid for by the issuer of the instruments, which might give issuers incentives to "shop around" for the best rating. In theory a rating agency should have a vested interest, including under an issuer-pay model, in providing reliable ratings on an ongoing basis in order to maintain its "reputational capital." Furthermore, some would argue that an investor-pay model, where ratings are paid for by investors through subscription fees, can also give rise to conflicts of interest.[81] A large investor could try to influence rating agencies to provide lower initial ratings (which tend to provide higher yields), while institutions that can only invest in highly rated instruments due to regulatory requirements might pressure a rating agencies to assign an investment-grade rating on a particular security (Partnoy, 2009).

In summary:

- The available evidence suggests that the quality of the screening and monitoring processes carried out by the loans originators somewhat deteriorated during the period in which securitisation surged.
- Furthermore, some empirical papers have been able to identify, following different strategies, a negative relationship between the originators' readiness to securitise loans and the ex post performance of such loans, which suggests that incentives for conducting due diligence by originators do indeed weaken as these expect to sell off the loans.
- The prevalent issuer-pay credit rating agency business models could be responsible for the abovementioned rating inflation, although emperical evidence on this subject is limited.

[81] In the mid–1970s, US credit rating agencies stopped selling ratings to investors and began charging the companies that issue the debt they rate (Partnoy 2009). Still, some of the smaller current agencies such as Egan-Jones Rating Company, Lace Financial Corporation, and Realpoint, LLC, base themselves on subscription-based business models.

Appendix 2

Review of recent regulatory initiatives

In this Appendix, we describe in more depth some of the regulatory initiatives discussed in Chapter 3 of the paper, which are being considered or discussed by several regulatory authorities or international fora with the potential to influence the securitisation markets. [82]

1. Regulatory initiatives relating to the securitisation process

(i) Initiatives to promote a better alignment of incentives

The G20 Leaders' statement of the Pittsburgh Summit (September 2009) recommended that the securitisation sponsors or originators should retain a part of the risk of the underlying assets. This measure tries to correct the misalignment, previously emphasised, between the interests of securitising institutions and those of investors and encourage originators to apply rigorous lending policies. This guideline has already been included within some regulations developed since then.

In the European Union, the CRD II, which entered into force on 31 December 2010, modifies article 122 (a) to include the minimum risk retention rate, according to which a credit institution shall be exposed to the credit risk of a securitisation position only if the originator, sponsor or original lender has explicitly disclosed to the credit institution that it will retain, on an ongoing basis, a material net economic interest which, in any event, shall not be less than 5%.[83] Also, the net economic interest must be maintained by the originator on an ongoing basis and it cannot be subject to any credit risk mitigation or any hedge. This risk retention requirement will apply to new securitisations issued on or from 1 January 2011 and, in relation to existing securitisations, from 31 December 2014 if there is a substitution or addition of assets.

Risk retention requirements have also been included in regulations for other potential investors in securitised products such as investments funds and insurance companies. In particular, Directive 2009/138/EC of 25 November 2009, on the taking-up and pursuit of the

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[82] In this Appendix we focus mainly on recent measures adopted or proposed in the United States and the European Union.

[83] The material net economic interest is set at 5% of the nominal value and will be held according to any of the following alternative retention rules:

- via a vertical slice: retention of no less than 5% of the nominal value of each of the tranches sold or transferred to the investors;
- first loss tranche, and, if necessary, other tranches having the same or a more severe risk profile than those transferred or sold to investors, so that the retention equals in total no less than 5% of the nominal value of the securitised exposures;
- interest in the securitised exposures, in the case of securitisations of revolving exposures;
- randomly selected exposures (where such exposures would otherwise have been securitised and are no less than 100 in number).

business of Insurance and Reinsurance (known as Solvency II) and the proposal for a Directive on Alternative Investment Fund Managers,[84] include similar measures with respect to the retention requirement for originators, in order for an investment fund or an insurance or reinsurance undertaking, respectively, to be allowed to invest in securitised products.

In the United States, the Dodd-Frank Act (Section 621) prohibits an underwriter, placement agent, initial purchaser, sponsor, or any affiliate or subsidiary of any such entity, of an asset-backed security from engaging in any transaction that would involve or result in any material conflict of interest with respect to any investor in a transaction arising out of such activity for a period of one year after the date of the first closing of the sale of the asset-backed security.

The Act also includes a general requirement for the securitisers (and the originators in certain circumstances) to retain an unhedged economic interest in a portion of the credit risk of any asset transferred, sold or conveyed to a third party through the issuance of an asset backed security. The required minimum interest level is set at 5% of the credit risk transferred. Pending further regulatory developments, there could be a downward adjustment if the originator meets specified underwriting standards for the relevant asset class. Regulators may allocate risk retention requirements between a securitiser and an originator in certain circumstances, although any interest allocated to the originator would result in a reduction of the interest required to be held by the securitiser. At the present time, holding option details are to be set out in corresponding regulations. Specifically, Section 941 of the Act requires the SEC, the Federal banking agencies, and, with respect to residential mortgages, the Secretary of Housing and Urban Development and the Federal Housing Finance Agency to prescribe rules to require that a securitiser retain an economic interest in a material portion of the credit risk for any asset that it transfers, sells, or conveys to a third party.[85]

Risk retention requirements have also been incorporated into the “safe harbour” provisions of the FDIC’s Securitisation Rule. In 2000, the FDIC adopted 12 C.F.R. 360.6 (the Securitisation Rule), which clarified the FDIC’s statutory authority as receiver to disaffirm or repudiate contracts of an insured depository institution (IDI) with respect to transfers of financial assets by an IDI in connection with a securitisation or participation. The Securitisation Rule provided that the FDIC as receiver would not use its statutory authority to disaffirm or repudiate contracts to reclaim, recover or recharacterise as property of the IDI or the receivership, any financial assets transferred by the IDI in connection with a securitisation or participation, provided that the transfer received sale accounting treatment under US GAAP.

In June 2009, the FASB issued new securitisation accounting rules affecting whether a SPE must be consolidated for financial reporting purposes, thereby subjecting many SPEs to consolidated accounting (see FAS 166/167, amending FAS 140). These changes to FAS 166/167 became effective for financial reporting periods beginning after November 15, 2009. Because the safe harbour under the Securitisation Rule relied on sale accounting treatment,

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[84] The proposal for a Directive of the European Parliament and of the Council on Alternative Investment Fund Managers and amending Directives 2004/39/EC was approved by the European Parliament on November 2010.

[85] The Dodd-Frank Act establishes certain deadlines for adoption of these regulations. Specifically, by 15 April 2011, the following rules must be adopted: i) Section 621, on conflict of interest rules; and ii) Section 941, on joint rules regarding risk retention. Final adoption of these regulations is expected to generally follow two studies that are also required by the Act. By 14 January 2011, rules implementing Sections 943 (regarding representations and warranties) and 945 (regarding issuer review of assets) must be adopted. The Dodd-Frank Act does not include a specific deadline for the adoption of disclosure and reporting rules, described in Section 942 of the Act.

the passage of new accounting rules raised the issue of whether the FDIC would still provide a safe harbour for securitisations and participations in the absence of sale accounting treatment.

The FDIC issued an Interim Final Rule in November 2009 to continue safe harbour treatment for securitisations and participations issued before 31 March 2010 (the transition period) if such securitisations or participations would have received safe harbour treatment prior to the accounting changes. The transition period was subsequently extended by Final Rule on 18 March 2010 to continue safe harbour treatment for securitisations and participations issued prior to 30 September 2010 that would have qualified under the 2000 Securitisation Rule.

In January 2010, the FDIC issued an Advance Notice of Proposed Rulemaking for public comment which laid out conditions for a new safe harbour for securitisations and participations issued after the transition period. Subsequently, a Notice of Proposed Rulemaking was published for comment in May 2010, and after review of the comments, on 27 September 2010 the FDIC Board approved the Final Safe Harbour Rule and extended the transition period until 31 December 2010. Securitisations issued after 31 December 2010 will have to meet the new conditions set out in the final rule in order to qualify for the safe harbour. The conditions for safe harbour treatment focus on increased transparency, disclosure, and less complexity in the capital structures. Some of the more significant features of the new rule include:

- Imposition of a 5% credit risk retention requirement for bank-sponsored ABS, which will later be aligned with the interagency rules on risk retention required by the Dodd-Frank Act,
- Imposition of Regulation AB-style disclosure and reporting requirements on bank-sponsored ABS transactions issued after 31 December 2010, except for issuances by grandfathered master trusts,
- Grandfathering of established master trusts that satisfy old GAAP standards for sale treatment, and
- Additional requirements for bank-sponsored RMBS issuances after 31 December 2010. These include:
    - Limitations on capital structure (no more than six credit tranches and no pool-level external credit enhancement),
    - Mandatory terms as to servicer powers and incentives,
    - Incentive-oriented deferred compensation for rating agencies,
    - A 5% reserve account for repurchases of ineligible receivables (in addition to the required 5% retention of credit risk), and
    - Third-party assessments on legal compliance of the underlying loans.

The FDIC safe harbour regulation fully conforms to the provisions of the Dodd-Frank Act and addresses issues of particular interest to the FDIC in its responsibilities as deposit insurer and receiver for failed insured institutions. In order to ensure that the safe harbour regulation fully conforms with the risk retention regulations required by the Dodd-Frank Act, the FDIC's new safe harbour rule provides that, upon adoption of those interagency regulations, those final regulations shall exclusively govern the risk retention requirement in the safe harbour regulation.

(ii) Measures to increase transparency

In the United States, the recently approved Dodd-Frank Wall Street Reform and Consumer Protection Act (the Act), enacted on 21 July 2010, states that all issuers of registered asset-backed securities will be subject to the ongoing Exchange Act reporting requirements, without consideration to the number of investors in any asset class. In this way, the Act authorises the Securities and Exchange Commission (SEC) to adopt suspension or termination schemes for different classes of registered asset backed securities under some terms and conditions, whenever such action is deemed necessary to protect investors or preserve the public interest. The SEC is also required to impose registration statement disclosure requirements on asset backed securities issuers with respect to asset-level information, including requiring loan-level data if such data are necessary for investors to independently perform due diligence.

Prior to the Act, in April 2010, the SEC proposed certain revisions to the existing "Regulation AB" rules applicable to ABS transactions, including:

- Requiring the filing of tagged, computer-readable, standardised information about the specific assets in the pool. This loan-level information should be provided at the time the asset is securitised *and* on an ongoing basis;
- Requiring the ABS issuer to file on the SEC website a computer program that provides investors with a tool to analyse information about specific loans within the pool of assets. This computer program would show the investors how the borrowers' loan payments are distributed to investors in the ABS (the so-called "waterfall"), how losses or lack of payment on those loans will be divided among the investors and the conditions under which administrative expenses, such as loan servicing fees, are paid to service providers;
- Providing investors with more time to consider information about the pool of securitised assets before they need to make an investment decision;
- Repealing an existing condition that issuers must receive an "investment grade" rating for an ABS in order to be granted "shelf" or expedited eligibility. Instead, the rules will establish new conditions for ABS shelf-eligibility; and
- Increasing transparency in the private ABS market by revising the SEC safe harbours (which provide an exemption from SEC registration) and requiring ABS issuers to:
    - file a notice of ABS offerings conducted in reliance on the SEC safe harbour; and
    - represent in their transaction agreement that they will make available to investors the same information about the securities that would be provided if the offering were publicly registered.

In Canada, the securities regulators are contemplating reforms to the existing securities regulatory framework for the issuance of ABS, which require either the filing of a prospectus for issuance to the public broadly or reliance on an exemption from the requirement to file a prospectus for issuance to a narrower group of investors. The reforms would impose enhanced the disclosure in prospectuses based on the IOSCO Disclosure Principles for Public Offerings and Listings of Asset-backed Securities and proposed amendments to the SEC's Regulation AB. The reforms would also restrict purchases of ABS and ABCP based on exemptions from the prospectus requirements to highly sophisticated or high net worth individuals and institutions. In addition, the reforms would impose minimal disclosure requirements for ABS and ABCP issued to these exempt purchasers. These reforms address investor protection and systemic risk concerns that were brought to light in the credit crisis.

In the European Union, the Capital Requirements Directive has included new disclosure requirements since its amendment in September 2009. According to the new requirements, sponsoring and originating credit institutions must ensure that prospective investors have readily available access to all materially relevant data on the credit quality and performance of the individual underlying exposures, cash flows and collateral supporting a securitisation, as well as to all relevant information necessary to conduct comprehensive and well informed stress tests on the cash flows and collateral values supporting the underlying exposures. Due to the nature of these financial assets, the European regulators have found it convenient that this information be available not only at the date of the securitisation but also thereafter.

In the United Kingdom, the Financial Services Authority (FSA) published in July 2010 a number of proposals for the implementation of the novel pieces included in the CRD II.[86] Some of the specific changes proposed to the industry were related to the regulatory reporting requirements, including the increase in the reporting frequency (from half-yearly to quarterly) and the introduction of a new reporting form for securitisations originated or held in the trading-book. These new rules apply from January 2011.

Besides the CRD II, the Directive 2004/109/EC (Transparency Directive) establishes the legal information requirements for issuers whose securities are admitted to trading on a regulated market. In particular, this Directive establishes that the issuers must publish annual and half-yearly financial reports that shall remain public for at least five years. Also, the issuers will make sure of making public, without delay, any change in the rights or in the terms and conditions of the securities which could indirectly affect those rights.

The Transparency Directive allows each Home Member State to set more stringent requirements than those laid down on it. In this context, the Spanish securities markets supervisor (CNMV) has recently implemented a pioneering specific regulation aimed at increasing the periodic public reporting requirements for securitisation funds. Specifically, in accordance with the CNMV's Circular 2/2009, on accounting standards, annual accounts, public financial statements, and reserved statistical statements of securitisation funds, all securitisation funds managers operating in Spain are obliged to file public and reserve statements, that in some cases contain information at the individual-loan level, with the Spanish supervisor starting in early 2010.

The European Central Bank, in order to ensure an adequate risk assessment of the asset-backed securities that the Eurosystem accepts as collateral, published in December 2009 its decision to require loan-by-loan information on the underlying assets backing securitisations, as a factor to be taken into account in the eligibility criteria.

The Japan FSA revised its supervisory guidelines in order to ensure the traceability of underlying assets of securitised products in April 2008.[87]

(iii) New regulations on credit rating agencies

Some of the problems highlighted before relating to the functioning of rating agencies and, in particular, the lack of transparency in their methodologies and the conflicts of interest, had already been identified before the current crisis. In fact, some previous worrisome episodes, like those of Enron and Parmalat, had already motivated some initiatives such as the report

[86] FSA CP 09/29: "Strengthening Capital Standards 3"

[87] http://www.fsa.go.jp/en/news/2008/20080402.html

on the principles of the activities of rating agencies by IOSCO (2003) and the subsequent code of conduct, also published by IOSCO (2008).

More recently, the G20 April 2009 summit in London, after underlining the essential role of rating agencies in financial markets, established the need to submit these institutions to specific regulatory supervision, including registration, which must be compatible with the IOSCO code of conduct.

The initial drive for regulation by the G20 has been followed by several initiatives by different national and regional authorities. In Europe, the publication of Regulation 1060/2009 of the European Parliament and of the Council, in September 2009, on credit rating agencies establishes for the first time a registration and supervision system for these agencies within the European Union. This new regulation makes registration mandatory for an agency to be considered as an ECAI (External Credit Assessment Institution), which the revised Basel II capital framework requires for its ratings to be considered for regulatory purposes. Other main aspects of the new regulation include the following:

- Measures to reduce conflict-of-interest: i) the agencies must include two independent members in the administrative or supervisory board, whose remuneration is not linked to the agency's results; ii) the agencies' activities must be focused on issuing ratings, and they must not simultaneously provide advisory or consultancy services; iii) the agencies must ensure that their employees have the necessary knowledge and experience and their remuneration must not be linked to the revenue which the agency receives from the entity they rate and; iv) staff turnover must be encouraged so that no long-lasting relations are established with the issuing entities.
- With regard to their methodologies: i) the agencies shall use models that are rigorous, systematic, consistent and subject to validation based on historical experience and; ii) they must disclose to the public their methodologies and assumptions.
- With regard to the disclosure of information relating to ratings, the agencies are required to: i) differentiate the ratings of structured products with a special scale; ii) indicate in their reports if there are doubts about the reliability of the information on which their work is based and; iii) provide information about all asset-backed securities for which they issue a preliminary rating, irrespective of whether there is a definitive rating.
- With regard to general and periodic communications, the agencies are required to: i) annually publish a transparency report which includes information about their legal structure, internal control mechanisms and revenue sources and; ii) provide the Committee of European Securities Regulators (CESR, which has been replaced in 2011 by the European Securities and Markets Authority –ESMA) with information about the performance of their ratings.

This new EU regulation is to be revised in order to introduce centralised oversight of credit rating agencies operating in the European Union. Specifically, the new ESMA is to assume general competence in matters relating to the registration and on-going supervision of registered credit rating agencies.

In the United States, the Dodd-Frank Act amends the Securities Exchange Act of 1934 to impose new self-executing requirements on nationally recognised statistical rating organisations (“NRSROs”) and mandates that the SEC adopt rules in a number of areas.

The self-executing requirements establish, among other things, that each NRSRO must have a board of directors of which at least half of the members must be independent; that each

NRSRO must establish “look-back” policies and procedures to review the credit ratings, including upgrades and downgrades, determined by staff that now work at an issuer, underwriter or sponsor of an instrument the staffer helped to rate; and that each NRSRO must establish internal control structures governing the implementation of and adherence to policies, procedures and methodologies for determining credit ratings.

These rulemakings mandated by the Act include:

- Requiring NRSROs to submit to the SEC an annual report on internal controls;
- Establishing additional rules to address conflicts of interest relating to NRSROs’ sales and marketing considerations;
- Adopting “employee look-back” rules establishing NRSROs’ responsibilities for reviewing and potentially revising ratings when an NRSRO employee seeks and obtains employment with an entity that is subject to a credit rating of the NRSRO or the issuer, underwriter, or sponsor of a security that is subject to a credit rating of an NRSRO;
- Enhancing the information NRSROs must publicly disclose about the performance of their credit ratings;
- Adopting rules with respect to the procedures and methodologies an NRSRO uses for determining credit ratings to ensure, among other things, that those procedures and methodologies are approved by the NRSRO’s Board or a similar body and are in accordance with the NRSRO’s policies and that material changes to those procedures and methodologies are applied consistently to applicable credit ratings within a reasonable period of time and with sufficient disclosure of the reasons for such changes;
- Adopting rules requiring NRSROs to use a form to accompany the publication of each credit rating that discloses certain specified qualitative and quantitative types of information;
- Adopting rules requiring additional due diligence disclosure for NRSROs in connection with credit ratings for asset-backed securities;
- Adopting rules establishing requirements for analyst training; and
- Requiring NRSROs to have policies and procedures to ensure the consistent application of rating symbols and definitions.

The Act also removes references to credit ratings from US statutes and requires all Federal agencies to remove any reference to or requirement of reliance on credit ratings in any regulation that requires the use of an assessment of the credit-worthiness of a security or money market instrument. Specifically, Section 939A of the Act requires each Federal agency to review any of its regulations that require the use of an assessment of credit-worthiness of a security or money market instrument and any references to or requirements in such regulations regarding credit ratings. Each such agency must then modify any such regulations identified by the review ‘‘to remove any reference to or requirement of reliance on credit ratings and to substitute in such regulations such standard of credit-worthiness as each respective agency shall determine as appropriate for such regulations.’’ In making such determination, an agency must ‘‘seek to establish, to the extent feasible, uniform standards of credit-worthiness’’ for use by the agency, taking into account the entities it regulates and the purposes for which such entities would rely on such standards of credit-worthiness.

Pursuant to Section 939A of the Dodd-Frank Act, the SEC proposed various amendments to remove references in its rules, regulations, and forms to credit ratings issued by NRSROs.[88] On 25 August 2010, the US banking agencies published in the Federal Register an advanced notice of proposed rulemaking (ANPR) that describes the areas in the agencies' risk-based capital standards and Basel changes that could affect those standards that make reference to credit ratings and requests comment on potential alternatives to the use of credit ratings. The US banking agencies' regulations and capital standards include various references to and regulatory requirements based on the use of credit ratings issued by NRSROs. Through the ANPR, the US banking agencies are seeking to gather information as they begin to work toward revising their regulations and capital standards to comply with the Act.

In Japan, regulation for CRAs, consistent with IOSCO's code of conduct, was introduced in April 2010 and includes a registration system for CRAs to ensure adequate levels of oversight. Registered CRAs are currently under supervision of the JFSA, and are required to have operational controls in place in relation to the rating process and conflicts of interest, and also must provide timely and periodic disclosure. As for structured finance ratings, rating agencies are required to i) itemise information that may be deemed valuable in an assessment by a third party of the appropriateness of the credit rating and publish such information; ii) encourage stakeholders to implement measures to enable a third party to verify the appropriateness of the credit rating; and iii) announce the details and results of the encouragement by the CRAs pursuant to (ii).

The JFSA has thus far taken various measures to reduce mechanical reliance on CRA ratings. The JFSA revised its supervisory guidelines in August 2008 with a focus on whether a financial institution has a framework in place that enables it to avoid excessive reliance on external ratings in its investment management of securitised products (eg, through use of external ratings with a full understanding of the process and of the meaning of ratings provided by CRAs). In December 2009, the JFSA removed rating thresholds from the eligibility requirements for shelf registrations of securities. Finally, in September 2010, the JFSA expanded disclosure requirements to include explanations with regard to the limitations of credit ratings and the means for obtaining information on rating methodologies.

2. Basel III and securitisation

The revision of the Basel II capital framework (already known as Basel III) includes some measures that will affect the incentives for banks to hold securitisations, the most relevant of which are those steaming from the revision of capital charges applicable to securitisations and re-securitisations and the introduction of some new capital, liquidity and leverage requirements. We deal with these novel elements in turn.

[88] See Removal of Certain References to Credit Ratings Under the Securities Exchange Act of 1934, Release No. 64352 (Apr. 27, 2011); 76 FR 26550 (May 6, 2011); References to Credit Ratings in Certain Investment Company Act Rules and Forms, Securities Act of 1933, Release No. 9193 (Mar. 3, 2011), 76 FR 12896 (Mar. 9, 2011) and Security Ratings, Exchange Act Release No. 63874 (Feb. 9, 2011), 76 FR 8946 (Feb. 16, 2011).

Capital requirements

The adjustments to the Basel II framework announced by the Basel Committee on Banking Supervision in July 2009 (see BCBS, 2009), which received several adjustments in June 2010, established that securitisation positions held in the trading book will be subject to similar charges as those applied to securitisation positions held in the banking book. This measure should be operative by 2014. The Basel Committee also decided that the so-called correlation trading books were exempted from the full treatment for securitisation positions, qualifying either for a revised standardised charge or a capital charge based on a comprehensive risk measure. Banks are expected to comply with this requirement by 31 December 2011.

Also, with the aim of discouraging the issuance of the most complex ABS structures, the Basel Committee has proposed to strengthen the requirements for re-securitisations (see BCBS, 2009).[89] As a result, the revised framework will include a new weighting scale created ad hoc for these products, specifying increases at times of over 100%. In addition, following this review, all the lines of liquidity support for asset-backed securities, irrespective of their maturity, will have a credit conversion factor of 50% (up to now the conversion factor for lines with a maturity of less than one year was only 20%). Finally, the Basel Committee has introduced new stricter transparency requirements for asset-backed securities held in the trading book, the sponsorship terms for off-balance-sheet items and the methodology used for valuating products on the balance sheet, among others. Certain of these changes are scheduled to come into force in 2011, while others will come into force in 2012.

Liquidity ratios

A. Liquidity coverage ratio

This ratio is defined as the stock of high quality liquid assets over net cash outflows measured over a 30 day-time period (see BCBS 2009).[90] This ratio aims at ensuring that a bank maintains an adequate level of unencumbered high quality assets that can be converted into cash to meet its liquidity needs under an acute liquidity stress scenario. The characteristics of a high quality asset would be: low credit and market risk, ease and certainty valuation, low correlation with risky assets and such assets must also be listed in a developed and recognised exchange market.

The Basel Committee has elaborated a list of assets that qualify as high quality assets such as cash, central bank reserves, marketable securities representing claims on or claims guaranteed by sovereigns, central banks, local administration or multilateral entities and, subject to some haircuts, covered bonds and corporate bonds. Securitisation bonds, even those with the highest qualifications or with sovereign guarantee, are considered as completely illiquid assets for the calculation of the liquidity coverage ratio.

In that sense, the Committee considers that structured financing facilities that include the issuance of debt securities should fully assume the liquidity risk arising from these structures

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[89] As defined by the BCBS, a re-securitisation is a securitisation where the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposures is a securitisation position. An exposure to one or more re-securitisations is also a re-securitisation.

[90] The Governors and Heads of Supervision, the oversight body of the Basel Committee on Banking Supervision, reached broad agreement on the overall design of a liquidity reform package on its meeting of 26 July 2010 and it was endorsed by the agreement of 12 September 2010. After an observation period beginning in 2011, this ratio will be introduced on 1 January 2015.

under the liquidity coverage ratio, as currently defined. This implies that these banks should retain a stock of high quality liquid assets equivalent to 100% of the amount of debt securities maturing within the 30-day time horizon of the standard and 100% of the amount of assets that could potentially return to banks' balance sheets due to embedded options in these financing arrangements. Each national supervisor can determine other contingent non-contractual obligations.

B. Net stable funding ratio

In addition to the liquidity coverage ratio, the Committee established another measure to promote a stable medium and long-term funding of the assets and activities of banks, the so-called net stable funding ratio, defined as the ratio between the available amount of stable funding and the required amount of stable funding. This ratio is expected to be fully operative by 1 January 2018.

This standard provides a measure of liquidity risk exposure that acknowledges recent market difficulties, including the need to fund securities in trading inventories or securitisation pipelines in the face of illiquid markets. As it is currently specified, it requires banks to hold 65% stable funding for all residential mortgage loans that are warehoused in order to be securitised. (There is still ongoing discussion concerning whether other loans attributed a 35% or lower risk weight under the Basel II standardised approach would also qualify for this beneficial treatment.) Also, in the context of the net stable funding ratio, banks have to hold 20%-50% stable funding for covered bonds and 100% for all other structured products on the bank's balance sheet, like securitisations, including the substantial amounts of MBS that European banks are holding in the context of central bank operations. The above net stable funding ratio percentages are subject to recalibration.

Leverage ratio

The leverage ratio was also introduced by the Basel Committee in December 2009 and the phase-in arrangements were announced on 26 July 2010 and fully endorsed on 12 September 2010. The design of the leverage ratio includes a definition of capital and a definition of total exposure. In this set-up, securitisation exposures will follow the accounting measurement and retained positions as well as other forms of credit enhancements provided to the vehicle by the originator (eg liquidity facilities) will be included in the calculation of the leverage ratio. For non-derecognised securitisations, the underlying securitised portfolios (as opposed to the securitisation exposures) are included in the leverage ratio calculation. Credit risk mitigation, synthetic (or unfunded) securitisations, will not reduce the exposures of the underlying portfolios.

In order to take into consideration the complexity of the risks associated with securitisation operations, including cases in which the originator could feel obliged to take back assets on the balance sheet, and the differing accounting treatments across jurisdictions with regard to de-recognition, the Committee intends to consider, as an alternative approach, the total underlying securitised portfolios for a bank’s originated securitisations.

The implementation of this ratio will start on 1 January 2011 with a supervisory monitoring period. Then a parallel run period will start on 1 January 2013 until 1 January 2015 and disclosure of the leverage ratio and its components will start on 1 January 2015. It is expected to be integrated in the Pillar 1 on 1 January 2018.

3. Solvency II and securitisation

Solvency II will establish a new set of capital requirements for the insurance sector with increased risk-sensitivity. The overall impact of this new regulation on the demand for securitisation investments by insurance companies is uncertain at this stage.[91]

[91] Some analysts have also warned about some potential inconsistencies in the calibration of the capital requirements under the Technical Specifications of the 5th Quantitative Impact (QIS5) for Solvency II. For instance, Deutsche Bank (2010) argues that holding the most senior tranches of an ABS structure may imply higher capital charges relative to holding the entire pool of underlying loans. However, the Technical Specifications of QIS5 do not prejudge the final legislation.

Appendix 3

Government initiatives to support securitisation markets

Since the financial crisis, some governments have acted to support demand in the securitisation markets by providing large amounts of liquidity.

In November 2008, the Federal Reserve Bank of New York (FRBNY) introduced the Term Asset-Backed Securities Loan Facility (TALF) in the United States, with the aim to support the issuance of ABSs collateralised by student loans, auto loans, credit card loans and loans guaranteed by the Small Business Administration. Under the program, the FRBNY would provide non-recourse funding to investors wishing to invest in the AAA tranches of the eligible ABSs.

The FRBNY initially announced up to $200 billion of loans, although it subsequently announced the TALF will provide up to $1 trillion of loans to eligible borrowers. In June 2009, the FRBNY extended the facility to newly issued collateralised mortgage-backed securities (CMBS). In July 2009, legacy CMBS also became eligible collateral under TALF. The terms of the loans under TALF – three to five years – closely matched the maturities underlying securities.

At present, the extension of new credit under TALF has effectively come to an end. In a recent assessment of TALF, the FRBNY noted that the program met the objective of supporting the market for securitised credit. It noted that 'secondary spreads narrowed significantly, and volatility moderated'. Furthermore, the improvements in the secondary market 'helped re-start the new-issue market'.

In Australia, the government has also intervened in the domestic securitisation market. But it has done so by adopting a cornerstone investor approach whereby the Australian Office of Financial Management (AOFM) directly invests in AAA-rated tranches of prime RMBS issues. An initial $A8 billion was committed at the start of this program in the fourth quarter of 2008. Since then, more funds have been pledged, taking the total commitment to $A20 billion.

In an update in October, the AOFM noted that while it had no intentions to divest its RMBS holdings, it had received some unsolicited approaches from investors. This suggested that there were some improvements in the secondary market.

Appendix 4

Joint Forum Working Group on Risk Assessment and Capital

Co-Chairmen	**Tom Crossland**	**Financial Services Authority**
	Ray Spudeck	**National Association of Insurance Commissioners**
Australia	Steven Bardy	Australian Securities and Investments Commission
	Jeremy Bray	Australian Securities and Investments Commission
	Nina Wan	Australian Securities and Investments Commission
Belgium	Janet Mitchell	National Bank of Belgium
Canada	Naizam Kanji	Ontario Securities Commission
	Daphne Wong	Ontario Securities Commission
France	Emilie Fialon	Autorité de contrôle prudentiel
	Fabrice Macé	Autorité de contrôle prudentiel
	Francoise Buisson	Autorité des marchés financiers
	Patrice Aguesse	Autorité des marchés financiers
Germany	Frank Pierschel	BaFin
	Christian Buck	BaFin
	Sofia Nikopoulos	BaFin
	Christoph Schlecht	BaFin
Italy	Laura Pinzani	Bank of Italy
Japan	Hironori Ishizaki	Bank of Japan
Spain	Marta Estavillo	Bank of Spain
	Oscar Arce	Comisión Nacional de Mercado de Valores
	José Manuel Portero	Comisión Nacional de Mercado de Valores
Switzerland	Pascal Perrodo	FINMA
United Kingdom	Poonam Koria	Financial Services Authority
United States	Thomas Boemio	Board of Governors of the Federal Reserve
	Meg Donovan	Board of Governors of the Federal Reserve
	Suzanne Clair	Federal Deposit Insurance Corporation
	Susan Hopkins	Office of the Comptroller of the Currency
	Alexandria Luk	Office of the Comptroller of the Currency
	Robert Esson	National Association of Insurance Commissioners
	Mark Attar	Securities and Exchange Commission
	Randall Roy	Securities and Exchange Commission
	Manjeet Kaur	Federal Reserve Bank of New York
EC	Martin Spolc	European Commission
IMF	John Kiff	International Monetary Fund
IAIS	Jeffrey Yong	International Association of Insurance Supervisors
Secretariat	Paul Melaschenko	Basel Committee/Joint Forum Secretariat