30 October 2009

IMPACT ASSESSMENT

This impact assessment was carried out on a best efforts basis within a short timeframe. Given the limited number of participating countries and the data quality and availability issues found during the analysis, this impact assessment can only be considered as approximate and indicative to understand some of the impacts of proposals for which there is no previous evidence and for which no COREP[1] data exist.

It is important to note that due to time constraints, this impact assessment does not consider the possibility for institutions to use option (c) of Article 122a. Therefore, additional data and analyses would be necessary to obtain a comprehensive view of the cost-benefit implications of the proposals.

Market Failure Analysis[2]

1. Financial markets deviate from the ideal of perfect markets because of the existence of market failures. One such market failure is asymmetric information, which occurs in transactions where one party is better informed about the risk/reward relationship of a traded asset than the other. This generates incentives to exploit informational advantages leading to an inefficient allocation of resources and welfare losses.
2. Securitisation considerably increases the distance between borrowers and the ultimate investors, thus making it hard to

[1] COREP stands for Common reporting framework for the solvency ratio for credit institutions and investments firms. Its goal is to develop a common language for communication in the context of a common European regulation. See the recast version of the guidelines on common reporting in http://www.c-ebs.org/getdoc/0158a2a7-cc99-4fba-bcef-29db6cc5f02d/Explanatory_notes_GL04.aspx and the amendments in http://www.c-ebs.org/getdoc/cfed7367-b806-427e-8548-ac34da3f1356/CEBS-202008-2093-20rev1-20_Amendments-20to-20guida.aspx

[2] This Market Failure Analysis draws on Benito, E., (2009). "Asset securitisation: An economic analysis of its causes and consequences",mimeo.

obtain information about borrowers' quality and payment capacity. In addition, increasing complexity of the instruments makes it even harder to understand the composition and quality of the underlying assets reducing the effectiveness of market discipline and amplifying existing information asymmetries. This generates incentives for originators to assume additional risks and to focus on short-term profitability based on the quantity and not the quality of loans granted. In other words this can reduce the incentives banks have to screen and monitor borrowers.

3. Some recent empirical studies suggest that securitisation has fostered moral hazard among mortgage originators leading to relaxed underwriting standards. Mian and Sufi (2008)[3] find that the greatest rise in defaults in the US is observed in geographical areas where a larger proportion of mortgage loans were securitized. Keys et al. (2008)[4] comparing the composition and performance of lenders' portfolios show that portfolios that are more likely to be securitized default by around 20% more than similar risk portfolios with lower probability of securitisation.
4. Under normal market conditions, the impact of these information asymmetry problems may be limited, given the abundance of liquidity and risk appetite in markets. However, in downturns, this market failure and uncertainties surrounding securitised assets may lead to high reputational costs, absence of liquidity, large losses and contagion, as evidenced during the recent market turmoil.
5. An originator can mitigate the impact of these information asymmetries to a certain extent by retaining an interest in the transaction. The loss the originator would then suffer increases the incentive to monitor borrowers and ensure that their credit quality is appropriate. The extent to which retention of interest can reduce the effect of asymmetric information problems depends on the amount retained, tranche class, type of assets and investors' risk appetite, among other factors.

The Baseline: Current and Recent Retention Levels

[3] Mian, A., Sufi, A., (2008). "The consequences of mortgage credit expansion: Evidence from the 2007 mortgage default crisis", mimeo

[4] Keys, B., Mukherjee, T., Seru, A., Vig, V., (2008). "Did securitisation lead to lax screening? Evidence from subprime loans", mimeo

6. To understand the incremental impact of any retention requirement we need to define a baseline, i.e. retention levels in the absence of such a requirement. There does not appear to be standard market disclosure of this data, and so our knowledge of the baseline is limited. The incomplete picture we have been able to piece together with limited information is shown below.

Retention in the UK

7. We examined retention for all UK mortgage master trusts, and samples of UK credit card master trusts and UK non-conforming RMBS deals, assuming that all that issuers have retained is the seller share and reserve fund. We looked at numbers from 2006 (i.e. pre-crisis) and now. Results are shown in table 1.

Table 1: Seller's share and reserve funds in the UK

	Seller's share		Reserve fund	
	Credit Card Master Trusts[5]	Prime RMBS	Prime RMBS	non-conforming RMBS
2009				
Minimum	29.0%	11.2%	0.00%	0.2%
Average	49.6%	24.9%	3.10%	1.5%
Maximum	71.9%	42.1%	12.40%	2.8%
2006				
Minimum	-	13.5%	0.30%	1.0%
Average	-	32.9%	1.10%	1.5%
Maximum	-	83.8%	1.80%	2.1%

Source: ABSXchange and Servicer Reports

8. 2009 data show very high seller shares for both UK mortgage master trusts and UK credit card master trusts. 2006 data for the former also indicate very high retention on average. Transaction documents also specify minimum seller shares for UK mortgage master trusts. These range from 4.6% to 14.4%, averaging 8.8%.[6] The data combined suggests a 5% retention

[5] Credit card master trusts have multiple reserve funds for specific series, specific bonds and specific events (that may or may not have occurred) making the calculation of reserve funds difficult. In any case since seller's shares for this market segment are significantly higher than 5% the lack of reserve fund data does not change the implication of no incremental impact in this segment.

[6] J.P. Morgan (Sept 2009): Europe Credit Research - UK & Ireland RMBS Tracker Q3 2009

requirement would make little difference in these market segments.

9. For non-conforming RMBS deals data is available on reserve funds but not on any additional form of retained interest.[7] If this is directly the only form of risk (in this context) that non-conforming RMBS transaction originators are exposed to (i.e. they do not otherwise retain an interest), the relatively low volumes of reserve funds in the sample checked (between 1% and 2%) suggest a 5% retention requirement is likely to have a non-trivial impact in this market segment.

10. It is of course possible that issuers or originators may also be retaining an interest in other ways, in which case the implication drawn would be incorrect. Since neither credit ratings reports nor the offering circulars of deals reveal this information for the sample of UK non-conforming deals checked, we cannot be certain of the true position.

Retention in Europe

11. Table 2 shows the total and first loss piece retention in Europe for the years 2008 and 2009. Results seem to show a very different behaviour amongst the European countries. However, there are several underlying reasons behind these figures. Starting from the fact there is no a mandatory requirement to disclosure the level of retention in each securitisation transaction, the table has been built up using different sources. Some countries have used COREP information, though this framework was not initially designed to provide this type of information, whereas other countries have used internal databases or sources. In addition, some countries such as Greece, Italy and Ireland have computed the level of retention for those securitisations where significant risk transfer has been performed, whereas other countries such as Spain and Belgium have also taken into account also those transaction retained on bank's balance sheets.

[7] The purpose of the reserve fund is to provide investors some protection against credit risk in the event that borrowers default or fail to make timely remittances on loans included in the securitisation. Losses are paid from the reserve fund first and then from the cash flows owed to the subordinated tranche.

Table 2: Total and First Loss Piece Retention in Europe 2008-09

	Retention	First Loss Retention over total securitisation positions
Greece	13.4%	2.7%[8]
Ireland[9]	18.9%	2.2%
Netherlands	40.0%	0.8%
Spain[10]	50.8%	2.7%
Belgium[11]	93.4%	1.1%
Germany	64.1%	1.9%
France[12]	12.5%	1.8%
Italy[13]	14.9%	4.6%

Sources: Mixture of COREP and other regulatory sources

12. At first glance this limited sample of retention data from regulatory returns or information for 2008-09 suggests that institutions on average retain an interest greater than 5% in the countries featured. However, this is not to say that would be no impact upon some institutions in these countries. First, these

[8] Institutions in Greece retain a further 2% interest below investment grade positions. All of the securitisations covered by this data took place before the banking crisis (i.e. before July 2008).

[9] The data is extracted from COREP returns. Seven banks reported positions and two banks contribute to 43% of total securitisations at the reporting date. The data relates to reported securitisations for period ending March 2009, with previous data in relation to securitisations positions only available from end-March 2008 on a quarterly basis. Where institutions retained the first loss, they held 100% of the first loss on average.

[10] The data is referring to 2008 only, since the source is COREP template (Dec-2008)

- In Spain the requirement is to include in this template the following securitisations:

1) Any securitisation of assets originated by the deponent institution (or any institution of its group) when at least a securitisation position is retained.

2) Any securitisation of assets originated by the deponent institution (or any institution of its group) when no securitisation position is retained, only in the year of origination.

3) Any securitisation of liabilities (eg. covered bonds) issued by the deponent institution (or any institution of its group).

However, the above figures exclude securitisations of covered bonds but include all the rest of securitisation, not only the ones that achieve the significant risk transfer

[11] The information provided comes from supervisory and it concerns the main banks that are active in Belgium in the field of securitisation. The information focuses only on operations originated in 2008-2009. For all these transactions, no risk transfer has been achieved given the retention rate

[12] The data reported is established as of 31 March 2009 for a sample of three banks. The securitisation operations do not include those used for the refinancing to the ECB. In addition, the figures include only the operations that have been generated by institutions as ORIGINATORS (so not as sponsor or investor).

[13] Figures do not take into account a consolidated approach, in which the entity which has retained risk could be different from the originator but be part of the same banking group, nor the case of multioriginator transactions; In addition, self-securitisation transactions, issued in the 2008, have been excluded; The retention requirement has been calculated considering for each transaction the value of the tranches retained by the originator with respect to the total amount of ABS outstanding as of 31st December 2008.

numbers are averages, and do not show the percentage of institutions or securitisations that would fall below a 5% threshold. Secondly, these numbers are not necessarily representative of normal market conditions. Much recent securitisation activity has taken place to access Central Bank funding. It is difficult to say what the position would otherwise be which is the baseline of interest for this analysis. We are aware of anecdotal evidence suggesting that retention of equity positions prior to the financial crisis was close to zero in some deals. Franke and Krahnen (2008)[14], for example, quoting reports from managers in the industry during private conversations, state that in the year before the outbreak of the subprime crisis, there were an increasing number of transactions being issued with no retention of the first loss position.

13. Table 2 also shows first loss piece retention numbers ranging from 0.8% to 4.6%. This indicates that a mandated retention requirement of 5% cannot be achieved by the current equity position of the average firm and could therefore affect firms across all eight countries in this group.

14. Table 3 shows reserve funds for samples of Prime RMBS issuers in four large European countries. This is not the total retained interest for these issuers. Since seller shares are only reported for UK institutions in the data source we do not know the size of these shares for France, Spain or the Netherlands.

Table 3: Prime RMBS Reserve Funds

	France	Spain	Netherlands	UK
2009				
Minimum	8.4%	1.5%	0.5%	0.0%
Average	12.8%	2.3%	1.1%	3.1%
Maximum	17.2%	3.4%	1.9%	12.4%
2006				
Minimum	2.1%	1.3%	0.5%	0.3%
Average	5.8%	1.7%	0.9%	1.1%
Maximum	11.0%	2.3%	1.3%	1.8%

Source: ABSXchange

15. The interesting point to draw from this data is that average reserve funds have increased from the pre-crisis period to 2009 in all four countries. On top of the argument that this might reflect the fact that much recent securitisation has been for state

[14] Franke, G., and Krahnen, J.P., (2008) "The Future of Securitization", mimeo

funding access purposes, it is possible that it indicates a self-correcting market demanding originators retain a greater interest after the revelation of the problems in securitisation.[15]

Summary and Implications

16. A European Commission requirement would act by restricting the activity of European investors regardless of the geographical location of originators. A similar retention requirement is being contemplated by the US authorities, US originators will also be directed affected.

17. Data from recent regulatory reports for several European countries suggests that, in the main, the average firm retains more than a 5% interest. However this data is biased by recent securitisation activity focused on accessing central bank funding. In normal times retention on average is likely to be lower. Even within this data more nuanced information suggests a significant percentage of securitising institutions retain less than a 5% interest and would be affected.

18. Data from the UK indicates credit card and prime RMBS Master Trusts retain considerably greater than 5% interest and so will not be affected by the proposals. However, there is likely to be a non-trivial impact for non-conforming RMBS transactions, though it is difficult to say how large such an impact might be given incomplete data.

Potential Impacts

19. We would expect a retention requirement to raise the cost of securitisation. This increase in cost for issuers may arise through two avenues. First, they would have to hold greater capital against the risk of the incremental interest retained. In economic terms this may largely be a transfer and not imply an overall decrease in welfare, since investors who would otherwise hold this retained interest would now hold correspondingly less capital.[16]

[15] Since the market has been inactive in recent times, it is possible one mechanism for this could be through changes in credit rating agency criteria affecting existing deals.

[16] This is not strictly true because the amount of capital investors might have held may be different than what issuers would be required to hold given differences in requirement for different types of institutions etc.

20. Second, issuers through a combination of incremental loss suffered if loans in a deal default, and greater due diligence effort, would face higher costs. This again implies a transfer and not a loss in overall welfare, since losses would otherwise be suffered by investors.

21. Relative to the pre-financial crisis period we would expect this greater incentive to monitor borrowers and ensure that their credit quality is appropriate, to give rise to a lower quantity of loans, but an improvement in quality – so that lower overall default rates would be expected. Hence some mitigation of the impact of the information asymmetry problem would be expected.

22. The size of how large these impacts may be is not clear. The baseline data in the section above suggests some material degree of impact is likely, particularly for the non-conforming RMBS market segment. Further, retention practice is likely to vary according to the type of transaction. The impact on different market segments of a retention requirement is therefore likely to be different.

23. Compared to the present, when there is limited securitisation activity, it is possible that the incentive alignment signal sent by a retention requirement may lead to some greater degree of securitisation. This may help economic recovery by helping restart seized up wholesale funding markets. It is difficult to say how strong a signal, market participants would perceive retention to send in terms of incentive alignment.

24. There is on the other hand also the possibility of moral hazard on the part of investors if a retention requirement over signals reliability. While this may not be evident in the near future with market participants aware of recent problems with securitisation, myopia may lead to the re-emergence of similar problems which a "safety signal" can exacerbate. This would be the case if moral hazard or over reaction to the signal led to greater costs than the degree of benefits arising from the positive incentive alignment of retention.

25. One potential problem with a uniform retention requirement is that it does not sufficiently differentiate between risky activities, giving rise to regulatory arbitrage opportunities and, therefore, perverse incentives to substitute into asset classes that effectively raise the likelihood of failure. Tirole[17]

[17] Tirole J., "Leçons d'une crise", TSE Notes/Notes TSE, n. 1, December 2008

makes the argument that the interest that an issuer should be required to keep in order to reduce moral hazard is not uniform and depends on the securities issued and the way they are issued[18]. Some activities are riskier than others, for example securitisation of a portfolio of reliable municipal debt is relatively safe and carries low moral hazard (compared for example to securitisation of subprime mortgages). The quality of the securitisation process will also differ for different types of transactions. The minimum economically justifiable proportion to be kept by an issuer depends on rating quality, arranger reputation and any other factors reducing information asymmetry.[19] Given this, a uniform retention requirement has the potential to create distortions.

Differing impacts of different retention methods

26. There are several different types of retention options being considered: shared interest (for e.g. through a vertical slice), first loss piece retention, a combination of a vertical slice and the first loss piece, and a risk weighted method. Different retention types imply different impacts. The aim is to try and identify the form of retention that leads to greatest net benefits, by appropriately incentivizing diligence. This is not a simple task.

27. We would expect, where options between retention methods are available, profit maximising institutions to choose the least costly method. If we look solely at expected losses this would suggest that if a vertical slice and first loss piece retention were both available as options, institutions would tend to choose the former since this implies lower loss. Box 1 below gives one scenario for losses using data from the European CDO market.

[18] Fender, I., and Mitchell, J., (2008) *Incentives and Tranche Retention in Securitisation: A Screening Model*, mimeo

[19] If Credit Rating Agencies were able to and had incentives to perfectly estimate portfolio quality, then retention of interest would imply economic loss, since issuers would be appropriately disciplined by the sale price of bonds issued. But we know that information asymmetry and mis-aligned incentives exist in this market.

Box 1 – A worked example of losses suffered by originator under different retention methods

Franke *et al* (2007) describe for a dataset covering about half of all European CDO-transactions between 1998 and 2005 that on average 86% of expected default losses are covered by first-loss positions, where the average weighted first-loss position is 6%.

In this scenario we assume:

- the first loss position is 6% (the CDO average from above),
- the mezzanine and senior tranches are of equal size above this (i.e. 47% each),
- And 86% of losses are covered by the first loss position (the CDO average from above)

In this example retaining a 5% vertical slice would imply a loss of 0.63% (of the value of the securitised volume) for the originator, while retaining a same size equity slice would imply an 8 times larger 5% loss for the originator.

Tranche	Structure	Vertical Slice	**Vertical Slice Loss**	Equity Piece	**Equity Piece loss**
Senior	47	2.35	**0**	0	**0**
Mezzanine	47	2.35	**0.33**	0	**0**
Equity	6	0.3	**0.3**	5	**5**
Total	100	5	**0.63**	5	**5**

1. Source: Franke, G., Herrmann, M., Weber, T., (2007), *Information asymmetries and securitzation design*, mimeo

2. The first loss positions in the source data reflect the total size of FLPs and not the amount retained.

28. The example in the box appears to suggest that ex-ante incentive alignment would be greater through equity piece retention. However, we understand perverse incentives, may start to take effect once the retained first-loss position is depleted. This may for example lead to poorer servicing. In the example in Box 1, *after* the loss of the equity piece, there would be a 0.33% greater loss for the firm holding a vertical slice. The relatively small loss suggests the incremental degree of ex-post incentive alignment this would lead to might not be very large. If it is ex-ante incentive mis-alignment (poor loan origination) that is the bigger concern than ex-post mis-alignment (i.e. poor servicing etc.), and it is likely to be, then the example in Box 1 suggests the equity piece scenario appears to dominate.[20]

[20] The opportunity to introduce a retention requirement may allow us to also mitigate ex-post perverse incentives were retained equity loss positions depleted. It is possible a combination of shared interest and equity piece retention (L shaped retention) may lead to a closer to optimal solution

29. We must caveat the analysis above to say, first that the example in Box 1 only covers one scenario. A different set of conditions may lead to different implications. Second, this simple scenario solely looks at direct losses. A more nuanced approach would try to examine the actual effort originators might expend on screening.

30. Fender and Mitchell (2008)[21] have developed one such approach. They construct a theoretical model to assess how different methods of tranche retention could reduce moral hazard by incentivising an originator to perform costly screening of the loans it will securitize. They separately consider the retention of i) a proportion of the first loss (equity), ii) proportion of the mezzanine tranche and iii) proportion of the in-securitised portfolio (vertical slice). Their model suggests the optimal mechanism is a function of the particular circumstances such as the probability of the realisation of a downturn ("unfavourable state of the world"), the relative impact of screening in a downturn vs. in good times, and the thickness of retained tranches.

31. The model suggests that while equity tranche retention is the dominant incentive mechanism when the economy is doing well, this will not be true for low-quality loan portfolios during a downturn. The intuition here is that an originator forced to retain an equity piece when an economic downturn is highly probable will have little screening incentive because the chances are high that the equity piece will be wiped out irrespective of any screening effort. Greater incentives would then be provided by holding the mezzanine tranche. The paper suggests it is unlikely that a vertical slice will dominate both equity and mezzanine tranche retention unless the vertical slice is very thick.

32. This would suggest allowing institutions the option between different retention methods of equal thickness is likely to lead to a sub-optimal position. However, since no retention method absolutely dominates across all situations prescribing a sole method would also be sub-optimal. Theoretically a flexible requirement which changed according to different situations might lead to the greatest degree of incentive alignment. A risk weighted approach for example could also deal with the distortions a uniform retention method would lead to (see para 29). But as a complicated option this may be difficult to put in

[21] Fender, I., and Mitchell, J., (2008) *Incentives and Tranche Retention in Securitisation: A Screening Model*, mimeo

operation. A second best solution might be a combination of retaining parts of the equity tranche and tranches above (i.e. L shaped retention). Without more sophisticated analysis however, it is difficult to say with confidence what degree of incremental incentive alignment this might lead to relative to other options, and whether it would dominate other simple options under most conditions.