June 6, 2011

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Re: Credit Risk Retention

Andrew Davidson & Co., Inc. welcomes the opportunity to respond to the joint regulatory agencies request for public comment on the topic of **"Credit Risk Retention" (Docket OCC-2010-0002).** We are an analytics and consulting firm focused on mortgages and mortgage-backed securities (MBS) and other structured products with more than 100 model licensee clients and an extensive risk-management consulting practice. We have been in this business since 1992.

Our expertise is primarily in the residential mortgage-backed securities (RMBS) market; therefore, we will focus on the questions relating to the securitization of residential mortgages rather than auto, credit-card or CMBS-related questions. Our letter is organized in report form and cites the specific question numbers that our response addresses at the end of each paragraph.

Before addressing the questions directly, we would like to separate two types of credit risk associated with the securitization of residential mortgages.

1) **Economic Risk**: Systematic **economic risk** relates to changes in home prices and employment and other macroeconomic factors that affect large geographic areas or the nation as a whole. Diversifiable **economic risks** relate to individual borrowers, such as job loss, death and divorce, and other events that can lead to defaults. They can include regional risks related to natural phenomenon (hurricanes) and regional economic downturns.
2) **Origination Risk**: We define **origination risk** to be the risk of breaches of underwriting standards, misrepresentations, fraud, poor data quality and legal violations that may occur during the process of originating loans. Legal violations include laws on usury, truth in lending, real estate settlement procedures, predatory and abusive lending, consumer credit protection, equal credit opportunity, fair housing and disclosure.

Systematic and diversifiable economic risks can be held and managed by third parties; one important role of securitization has been to allow the transfer of these risks from originators to investors via securitizers. On the other hand, origination risks are the risks that the amount of credit risk created was greater than expected, due to misrepresentations, fraud and mistakes. Origination risk can only be reduced by improving the loan production process, and the only party that has direct control over this risk is the originator.

Overall, we find that the proposal attempts to limit the amount of economic risk that can be shed by the securitizer and defines qualified residential mortgages (QRM) to be exempt from risk retention, but pays very little attention to controlling origination risk. First and foremost, we would note that *originators,* who often sell loans to multiple securitizers, control origination risk. We believe that the goal should be to control origination risk, and any kind of risk-retention proposal should focus first on originators, and second on securitizers.

Even ignoring the focus on originators, we believe that the proposed menu of options approach is inappropriate because the vertical slice approach, combined with the freedom to use index hedging, would not prevent a repeat of the systematic decline in underwriting quality and resultant increase in origination risk that was a significant contributor to the financial crisis. This is because any losses caused by such a systematic decline would occur both in the

securities issued and the index hedges used, resulting in small to no losses to the securitizer. Even if losses on a pool approach 1000 bps, retaining a 5% vertical slice would only cause 50 bps of losses to a securitizer of poor loans, versus potential profits of 100 bps or higher, even before any hedging.

Furthermore, the horizontal 5% slice option, for well underwritten mortgages, prevents the transfer of any credit risk, limiting securitization to a purely senior funding role, rather than also functioning as a mechanism to disperse credit risk throughout the financial system. We believe that the final rule should allow the continued transfer and hedging of economic credit risk, a primary reason for the existence and utility of securitization, while preventing any transfer of origination risk beyond those who can directly control the origination process ([13, 15, 16,18,21,80]).

Instead, we believe that the combination of an **origination certificate,** which consists of a warrantee (backed by capital) certifying the loan manufacturing process and traveling with each loan, as well as a smaller risk-retention requirement for securitizers would align incentives much more effectively. Any potential risk retention held by the originator and securitizer beyond the capital backing the origination certificate could decrease after some period if collateral delinquency performance is in a pre-specified range around expected levels. After this period it is servicer incentives that are more critical to the transaction performance.

Without some form of warrantee of the absence of manufacturing defects, no amount of risk retention would suffice. Indeed, the existence of an origination certificate seems to be at the heart of what it means to be a QRM; more than particular cut-off rules about single origination variables. **We have attached a paper with this response, comparing traditional reps and warrants, the origination certificate concept and the vertical and horizontal risk retention options, along the dimensions of economic efficiency (cost), effectiveness at controlling origination risk and robustness to alternate forms of securitization with much more detail** [15-21].

Recommendations:

Therefore we recommend, first, that the definition of a QRM loan incorporate some form of the origination certificate described above, including a provision for the originator to maintain capital to support their obligations with relatively small risk-retention requirements on securitizers. The purpose of this securitizer risk-retention requirement would be to align securitizer incentives with those of investors with regard to legal/structural risks (which securitizers do control) as well as to encourage the selection of a good servicer and an appropriate servicer incentive structure [16, 18, 19].

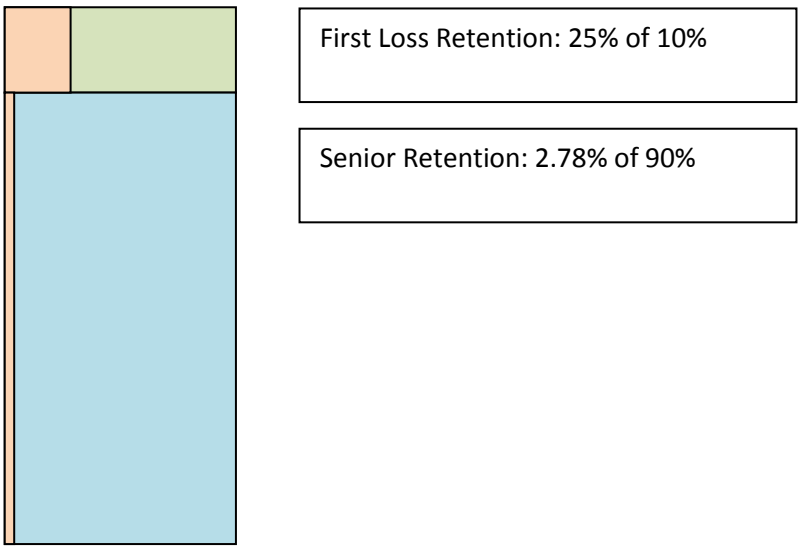
Second, for the purposes of determining appropriate underwriting guidelines, in addition to the HUD handbook mentioned in the agencies' proposal for debt and income guidelines, we would also recommend the use of the guidelines in the Fannie Mae and Freddie Mac seller-servicer guides prior to any exceptions or amendments that occurred from 2005 onwards. Their guidelines around origination, underwriting, servicing and default servicing are at least as transparent and comprehensive as in the HUD handbook. Prior to the decline in standards that occurred in competition with the non-agency (Alt-A and subprime) market, the GSE guides were widely seen as the benchmark standard of sound underwriting, enjoyed the largest market share, and combined even with poor economic environments, produced relatively low national default rates [109a,b].

Third, we would advocate a broader definition of a QRM along the lines of section E ("possible alternate approach"), but not allowing layered risks. This means that only a single variable (from OLTV, DTI, FICO, delinquency status) could stray outside of the tighter definition into the regions defined in section E, but all other variables would have to remain within the tighter constraints of the original proposal. For example, such an approach would allow a 10% down payment (plus closing costs) minimum for higher-FICO borrowers who may be first-time homebuyers. Additionally, we would like to note that a simple rules-based approach (particularly one that uses single variable cut-offs) is an inflexible step backward in that it reduces the ability to make multivariate tradeoffs while maintaining loan quality and keeping economic risk within desired levels. As the second attached paper demonstrates, there is a large range of credit risks that fall within the QRM definitions under both proposal, and many cases where non-QRM loans could have lower credit risk than QRM loans [143-6].

For example, as borrower incomes and resultant loan sizes increase, it may make sense for higher income households to spend a higher percentage of their income on mortgage debt payments than it would for lower income households, especially given tax incentives. It is possible that a higher DTI higher loan balance loan has less risk than a slightly lower DTI lower loan balance loan, especially in the presence of higher FICO. Likewise, higher DTIs may make sense with lower LTV purchases or where there are substantial assets in reserves. Allowing higher FICO borrowers lower rates in exchange for prepayment penalties should in no way interfere with the goals of the proposal. Additionally, interest only loans may be fine in the absence of any other payment shock feature (e.g., the 30-year fixed, 10-year IO product), especially to low DTI, higher FICO or lower LTV borrowers. Finally, for ARMs or other payment shock products, rather than restrictions on cap structures or payment shock, a much better approach is to compute DTI based on fully-indexed rates over a 5- or 7-year time horizon and ensure that DTI stays within appropriate limits in the most adverse (i.e., the one triggering all the caps) potential interest rate path over the time period [106,109,115-118,119,120,123].

Fourth, to maximize liquidity and prevent cost differences to borrowers based only on liquidity, we would recommend that all securitizations allow a mix of all categories of loans, and that the risk-retention requirement for any securitization be computed on a weighted-average basis using the loan balances at each level of risk-retention. An additional strong argument against creating separate QRM and non-QRM pools is that the liquidity difference itself would create a substantial value difference between the two types of loans, thereby encouraging the very gaming that would dilute the meaning of QRM. In addition, the creation of a spectrum of risk-retention requirements based on loan risk scoring rather than a two-category approach would further reduce the incentives for gaming and better align risk retention with risk [106-110].

Fifth, we believe that vertical retention by securitizers does not provide much economic benefit, but does create great economic cost. If securitizer risk retention is required, it should be a pro-rata portion of the junior bonds. That is the bonds that bear the bulk of the credit risk. We propose that securitizers hold 25% of the first loss (horizontal risk) and a smaller portion of the senior exposure. Thus if the risk retention requirement was 2%, the firm would be required to hold a 25% pro rata share of the first 4% of credit losses and 1.052% of the remaining 95%. Such a form of retention would provide economic motivation to control structural/legal risk and encourage appropriate servicer selection, but would still allow for credit risk transfer. If needed, higher levels of retention could be created by increasing the size of the first loss class(es). For example, a 5% risk retention could be created by retaining 25% of the first 10% and 2.78% of the senior 90% [19, 26, 27].



Thank you for the opportunity to provide comments. We welcome any questions or any further opportunity to elaborate upon the proposals we have described in this letter or in the attached papers.

Sincerely,

Andrew Davidson, President
Andrew Davidson & Co., Inc.

Enc: Origination Risk Paper
QRM Paper

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Welcome to the Pipeline! AD&Co's monthly newsletter focused on recent trends, changes and advances in the mortgage investor's market.

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the PIPELINE

Strategy Corner: Regulatory Insights

Origination Risk in the Mortgage Securitization Process: An Analysis of Alternate Policies*

By Andrew Davison and Eknath Belbase

*This is a shortened version of a draft submitted to the FDIC/Fed joint conference on housing and mortgage markets (Oct 25-26, 2010). The full paper can be obtained from Andrew Davidson, andy@ad-co.com or Eknath Belbase, eknath@ad-co.com.

Abstract

In this policy paper, we examine three approaches to containing origination risk in MBS: *skin-in-the-game, reps-and-warranties* and a concept we introduce called an *origination certificate*. We evaluate these policy options using the criteria of cost, effectiveness, and robustness to securitization models and benefits to borrowers. Skin-in-the-game, which is perhaps the easiest policy to implement, appears to be the least useful. The traditional reps-and-warrants approach works for the GSEs but is not robust to other forms of non-agency securitization. The origination certificate approach has the potential to be the most effective across a range of securitization models but would require the greatest set-up costs.

Introduction

For the purposes of this paper, we define **origination risk** to be the risk of breaches of underwriting standards, misrepresentations, fraud, poor data quality and legal violations. Legal violations include laws on usury, truth in lending, real estate settlement procedures, predatory and abusive lending, consumer credit protection, equal credit opportunity, and fair housing and disclosure.

Origination risk is a subset of credit risk, which can be broken down into systematic, diversifiable and origination risks. Systematic risks relate to changes in home prices and employment and other macro economic factors that affect the nation as a whole or large areas. Diversifiable risks are the risks related to individual borrowers, such as job loss, death and divorce that can lead to defaults. It can extend up to regional risks related to natural phenomenon (hurricanes) and regional economic downturns. Origination risks are the risks that the amount of credit risk created was greater than expected due to misrepresentations, fraud and mistakes. Systematic and diversifiable risks can be held and managed by third parties. Origination risk can only be reduced by improving the loan production process.

Some Policy Options

Currently, investor requirements to reduce origination risk are supported by representations and warranties that provide for the originator to repurchase loans if these requirements are not met. This type of *loan re-purchase* approach has been most effective as implemented by the GSEs. An additional concept, especially needed when there are multiple intermediaries between originator and investor, is *assignee liability*. This means that certain subsets of the origination risk can be assigned to loan purchasers further down the securitization process than the originator.

The skin-in-the-game approach would require security issuers to retain vertical, horizontal or hybrid positions in the capital structure of the securities they issue. This is an indirect approach to controlling origination risk as it relies on the security issuer managing its exposure to originators, presumably using some other mechanism; it only has a direct bearing on origination risk when the originator is the security issuer.

Finally, we introduce the notion of an origination certificate. An origination certificate would be a guaranty or surety bond issued by the originating lender and broker. The certificate would verify that the loan was originated in accordance with law, that the underwriting data was accurate, and that the loan met all required underwriting requirements. This certificate would be backed by a guarantee from the originating firm or other financially responsible firm and would travel with the loan over its life. The seller must provide a means of demonstrating financial responsibility, via either capital or insurance, for the loans to be put into a securitization. There should be a penalty for violations of reps and warrants beyond repurchase obligations and tracking of violations of reps and warrants available to all investors.

Before developing and applying an evaluation framework, it is worth noting that these policy options have very different forms of *fraud penalty*, i.e. the losses that the seller would incur in the event of loan fraud. The penalties are (1) proportional to all losses under the skin-in-the-game proposal, and only apply in the event of credit losses, so that in good states of the economy the penalty for fraud can be close to zero, (2) limited to loan put-back under the standard rep-and-warrant approach[1] and can in principle apply regardless of whether there are any credit losses and (3) would consist of loan put-back plus a fine under the origination certificate, and as with the standard approach apply regardless of whether or not the fraud results in a credit event.

Examination of Options

The criteria by which we evaluate these approaches are as follows:

(1) Cost: Which approach is economically most efficient and increases mortgage rates least?

(2) Effectiveness: Which approach most directly addresses origination risk?

(3) Robustness: How well does each option perform under a variety of different industrial organization models for the origination through securitization process? For example, does it allow a variety of different originator types to exist?

(4) What is best for borrowers?

[1] The only exception to this might be the termination of a seller-servicer relationship by a GSE for an egregious pattern of violations over time.

First, we address the last three criteria; then, we examine costs using a simple mathematical model.

Discussion of Options

Both the origination certificate and the traditional rep-and-warranty violation based re-purchase approach directly address and separate origination risk from other forms of credit risk. In contrast, requiring originators to hold vertical or horizontal slices of capital structure risk requires them to hold capital not just for origination risk, but also for other forms of credit risk. Additionally, when the security issuer is one or more steps removed from the origination process, requiring the issuer to hold both origination and economic credit risk means that the issuer will have to fall back on legal protections it obtained in its purchase contracts. Since the chain of loan sellers could potentially be long, it is clear that the origination certificate is nothing but a standardized mechanism to allow these legal protections to transfer with the loans without any loss of "legal fidelity." Therefore, we believe that the origination certificate is the most direct approach to address origination risk.

We believe that the directness with which the certificate addresses origination risk and its enhanced transferability implies that it is also a more robust approach. For example, Fannie Mae and Freddie Mac have greater ability to enforce representations and warranties than typically found in private label securities. This is because the GSEs generally deal directly with the firm who originated the loans, they have rights to seize servicing, they have an ongoing relationship with the seller of loans and they have minimum capital requirements. Additionally, they typically do not re-sell loans for others to securitize. Therefore, the traditional rep-and-warrant enforcement approach favors the agency securitization model.

On the other hand, the origination certificate approach would function equally well regardless of whether agency securitization or non-agency securitization dominated. Additionally, even in the agency model, an origination certificate backed by a surety bond could result in lower counterparty risk than that the GSEs currently bear to the weakest sellers, assuming that the surety bond was backed by capital exceeding the value of seized servicing. Finally, we note that the transferability of a standardized origination certificate would also permit multiple degrees of separation between originators and security issuers, allowing a range of industrial organization models for non-agency securitization.

Next, we consider the recourse that borrowers have in the event that their legal protections (e.g. fair lending, usury, predatory lending) are violated under the different models. Under both the skin-in-the-game approach and the traditional rep-and-warranty enforcement approach, there is no standard recourse for borrowers to follow. If the responsibilities for those violations have been assigned to the issuer or any intermediary other than the originator, then those responsible for those violations have their liability capped at the premium over par at which the loans were first sold. If those liabilities have remained with the originator, then the borrower has no recourse in the event of originator bankruptcy. We believe that the origination certificate rectifies both of these shortcomings. For example, penalties for particular types of violations could be specified, with the explicit penalties potentially much larger than in the other approach. We believe this flexibility would ultimately benefit borrowers.

Analysis of Costs

Finally, we address the economic cost of the various approaches using a one period model, including for two forms of risk retention – pro-rata and first loss. Loans are originated at the beginning of the period; at the end of the period, there are two economic states. In the good economic state, there are limited losses on loans while in the bad economic state (which has low probability) there are more severe losses. The

model also considers two types of loans: a well-underwritten loan and a fraudulent loan. The proportion of fraudulent loans can be varied, as can the costs of underwriting/fraud detection and the profitability of each type of loan to the originator. The primary output metrics of the model are the profitability of originator and the investor as a function of the quantity of fraudulent loans originated. We omit many of the details in this version of the paper (interested readers may examine the full paper) and focus on the results of applying this model.

Table 1. Example Input Assumptions

		Loan Meets Underwriting	**Fraudulent Loan**
Volume	V	100	25
Profit	p	1%	3%
Value Market Up/Stable	s	0.5%	-2.0%
Value Market Down	d	-2.0%	-20.0%
Probability Down	Prob(d)	10%	
Cost of Underwriting	c(u)	-0.25%	
Cost of Indentifying Fraud	c(f)	-0.50%	
Collection Haircut	h	75%	
Sample	S	Min 10%	Max 50%
Fraud Fine	F	-10%	
Seller Capital	C	5%	

The economics to the buyer and seller can be computed for the stable and down scenarios and are shown in Table 2.

Table 2. Economics to Seller and Buyer

	Stable	Down	Weighted
Probability	90%	10%	
Seller Economics			
Meets Underwriting	1.00	1.00	
Underwriting	-0.25	-0.25	
Fraudulent	0.75	0.75	
Rep/Warrant Losses	-0.38	-3.75	
Fraud Fine	0.00	0.00	
Loss Limit	0.00	0.00	
Net Profit	**1.13**	**-2.25**	**0.79**
Buyer Economics			
Buyer Volume			
Return	0.00	-5.60	
Cost of Identifying on Losses	0.00	-0.03	
Rep Collection	0.30	3.00	
Fraud Fine Sample	0.00	0.00	
Collection	0.00	0.00	
Seller Loss Limit	0.00	0.00	
Net	**0.30**	**-2.63**	**0.01**

In Table 3, we repeat the calculation for a range of fraudulent loan rates and examine the impact on seller and buyer profitability.

Table 3. Impact of Fraud Rate on Profitability

	$ Amount of Fraudulent Loans				
Profit	0	5	10	50	100
Seller	0.75	0.76	0.77	0.83	1.40
Buyer	0.25	0.19	0.14	-0.16	-0.61

Under our assumptions, the profitability of the seller increases as the proportion of fraudulent loans and increasing the amount of capital only has a marginal impact on the seller of fraudulent loans. This is because the seller only "pays" for fraud in the down scenario, which has low probability. With a fine added for fraud, there is a disincentive for fraud even with minimal capital. However, that disincentive disappears once the capital is exhausted. Thus, the seller profit declines with the first $10 of fraudulent loans, but increases when the level of fraud is high. With more capital, the disincentive for fraud is extended.
The clear implication of this analysis is that implementing a fine for fraudulent loans, independent of the realized loss on the loans provides a better mechanism for countering fraud.

Our analysis can be extended to contrasting the impact on the seller of risk sharing (both the first loss and pro rata formulations) versus enforcement of reps and warrants. Under the pro rata method, there is little incentive to reduce fraud. Under the first loss method, there is a significant incentive to reduce fraud, but there is also significant risk to the seller even if there is no fraud (a feature we noted previously in our discussion of directness). In this way, the originator retains significant capital risks.[2] The Rep/Warrant method provides the strongest disincentive against fraud, a feature that the origination certificate would inherit.

Conclusion

Skin-in-the-game, which is perhaps the easiest policy to implement, appears to be the least useful. This is because it does not directly address origination risk, combining other forms of credit risk with origination risk, and because it lacks a pure fraud penalty. This combination of risk exposures results in inefficient use of capital and the highest costs of the options we have examined. The traditional reps and warrants approach works for the GSEs because it does directly address origination risk, and due to the long-term nature of seller-servicer relationships, contains an implicit form of fraud penalty for egregious serial sellers of fraudulent loans. However, this approach is not robust to other forms of non-agency securitization. The origination certificate approach has the potential to be the most effective across a range of securitization models, because it directly addresses origination risk, contains a fraud penalty and is carried with the loans over their life. However, because the concept has not been implemented to date, it would require the greatest set-up costs.

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[2] While higher levels of capital serve to reduce risk, they do not come without cost. Increasing capital levels beyond that required for bearing credit risk has a direct impact on the cost of mortgages. If the cost of equity is about 25% per year, increasing required capital for the originator from 1% to 4% would raise mortgage rates by about 100bp.

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Welcome to the Pipeline! AD&Co's monthly newsletter focused on recent trends, changes and advances in the mortgage investor's market.

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Strategy Corner: Credit Insights

Assessing the Credit Profile of Proposed Qualifying Residential Mortgages

By Richard Ellson, Ph. D., Will Searle, and Dan Szakallas

Introduction

Section 15G of the Dodd-Frank Act stipulates that federal agencies (OCC, FRB, FDIC, SEC, and FHFA) issue regulations that require ABS securitizers to retain 5% of the securitized assets as a form of risk retention. The agencies are also required to provide an exemption to this retention, and in the case of home mortgages, the exemption applies to "Qualifying Residential Mortgages" (QRMs). The proposed QRM guidelines were released on March 29, 2011, and comments are due on June 10, 2011.

The proposed QRMs are approached from two directions. First, so-called "non-traditional" loan characteristics are prohibited. These include IOs, negative amortization, and ARMs with significant reset risk from higher rates. The second element focuses on "conservative" underwriting standards.

- Debt to Income: Max 28% front-end and 36% back-end
- Maximum combined LTV of 80% for purchase, 75% for refinancing, and 70% for cash-out refinancing
- A 20% down payment is required→mortgage insurance is not permitted as a mitigant, as it is viewed as protection to investors (diminished loss severity) versus diminished default risk which is the goal of the underwriting standards
- Borrowers cannot have a 60-day delinquency in the prior 2 years

There is an alternative proposal that is more flexible.

- Debt to Income: Max 33% front-end and 41% back-end
- Maximum combined LTV of up to 90% on purchase, 80% on rate refinancing, and 75% for cash-out refinancing
- Down payment of 10% + closing costs is required with no seller paid closing costs
- Payment shocks are limited to 20%. However, the issue of teaser rates/ARMs was not explicitly mentioned.

In our judgment, these proposals are too focused on the retention of credit risk to the exclusion of defects in the origination process. In other words, is the maximum LTV the problem, or is it the appraisal process? If market participants had confidence in the underwriting data (full documentation) and this was combined with enforceable reps and warranties (backed by capital), would this not be sufficient for 90% LTV loans and higher DTI? We discussed these issues in a prior *Pipeline* article[1], which compared various ways of containing origination risk, including the "skin in the game" and "origination certificate" methods.

If the more rigorous criteria are adopted, what does the QRM universe look like, and what is the likely credit performance of QRM loans? How would less stringent criteria compare? To answer these questions, we evaluated Freddie Mac loans that were originated from 2006 to through March 2011. The loans originated after 2008 are generally viewed as "pristine" given the greater attention to and more stringent underwriting standards compared to what prevailed during the housing bubble period.

Profile of Qualifying Residential Mortgages—Proposed Regulations

We looked only at the fixed-rate universe and followed the proposed guidelines with the exception of front-end DTI (we only had back-end) and borrower payment history. As a proxy for an untarnished payment history, we set a minimum FICO of 690 – the same proxy as was used by the Credit Risk Retention NPR.

For the period from 2006-2011, slightly more than a third of loans would be QRMs under the proposed guidelines. However, there is a dichotomy between the 2006-8 and 2009-11 periods. In the earlier period, the percentage of QRMs ranged from 23.9% (2007) to 29.4% (2006). The fact that 2007 had the lowest percentage of QRMs should not be surprising to anyone involved in the market.

In contrast, the percentage of 2009-11 loans that were QRM eligible was noticeably higher—39% to 41.1%. Among other factors, one can infer that underwriting standards are more stringent. Furthermore, loan level pricing increases by the GSEs have become a more prominent factor in the origination process. Both the inferred increase in underwriting standards and increased GSE pricing may have contributed to the increased percentage of Freddie Mac guaranteed loans that were QRM eligible.

Figure 1. Freddie Mac QRM-Qualifying Loans by Origination Year

FIXED	LOAN COUNT AS OF 3/11	QRM QUALIFIED	
ORIG_YEAR			
2006	1,604,247	471,722	29.4%
2007	1,862,997	446,053	23.9%
2008	1,494,559	410,776	27.5%
2009	2,059,950	847,456	41.1%
2010	1,685,153	669,239	39.7%
2011	508,748	198,617	39.0%
TOTAL	9,215,654	3,043,863	**33.0%**

[1] "Origination Risk in the Mortgage Securitization Process: An Analysis of Alternate Policies" by Andrew Davidson and Eknath Belbase

Divergent views are likely with respect to the "correct" percentage of QRMs. In other words, is approximately 40% too much or too little for the risk retention exemption? To investigate the scope of the QRM universe under less restrictive criteria such as the alternative proposal, we relaxed the DTI, OCLTV (combined LTV at origination), and FICO parameters, approximating the alternative QRM criteria.

It is clear that relaxing the Refi OCLTV constraint results in the largest increase in QRMs. Raising the DTI to 40% provided a 4.7% boost to 43.8%, but increasing the "Non-Cashout Refi" OCLTV to 90% resulted in a 12.5% increase to 51.5%. Allowing all OCLTVs to be raised to 90% and DTI to 40%, while lowering FICO to 660 minimum, results in roughly 2/3 of the loans qualifying as QRMs.

Table 2. QRM Qualifying Loans by Credit Characteristics

2011	508,748	198,617	39.0%	0.0%	IO Period allowed
	508,748	222,627	43.8%	4.7%	ODTI raised to 40%
	508,748	206,214	40.5%	1.5%	FICO lowered to 660
	508,748	202,074	39.7%	0.7%	Purchase OLTV raised to 90%
	508,748	220,208	43.3%	4.2%	"Cash-out" refi OCLTV raised to 90%
	508,748	262,002	51.5%	12.5%	Refi OCLTV raised to 90%
	508,748	283,593	55.7%	16.7%	**ALL** refi OCLTV's raised to 90%
	508,748	320,480	63.0%	24.0%	**ALL** refi OCLTV's raised to 90% **AND** ODTI raised to 40%
	508,748	334,166	65.7%	26.6%	**ALL** refi OCLTV's raised to 90% **AND** ODTI raised to 40% **AND** FICO lowered to 660

The next step is to evaluate the credit risk of the proposed QRMs. We then compare this to the credit risk of QRMs using our proxy for the alternative proposal.

A Profile of Credit Performance

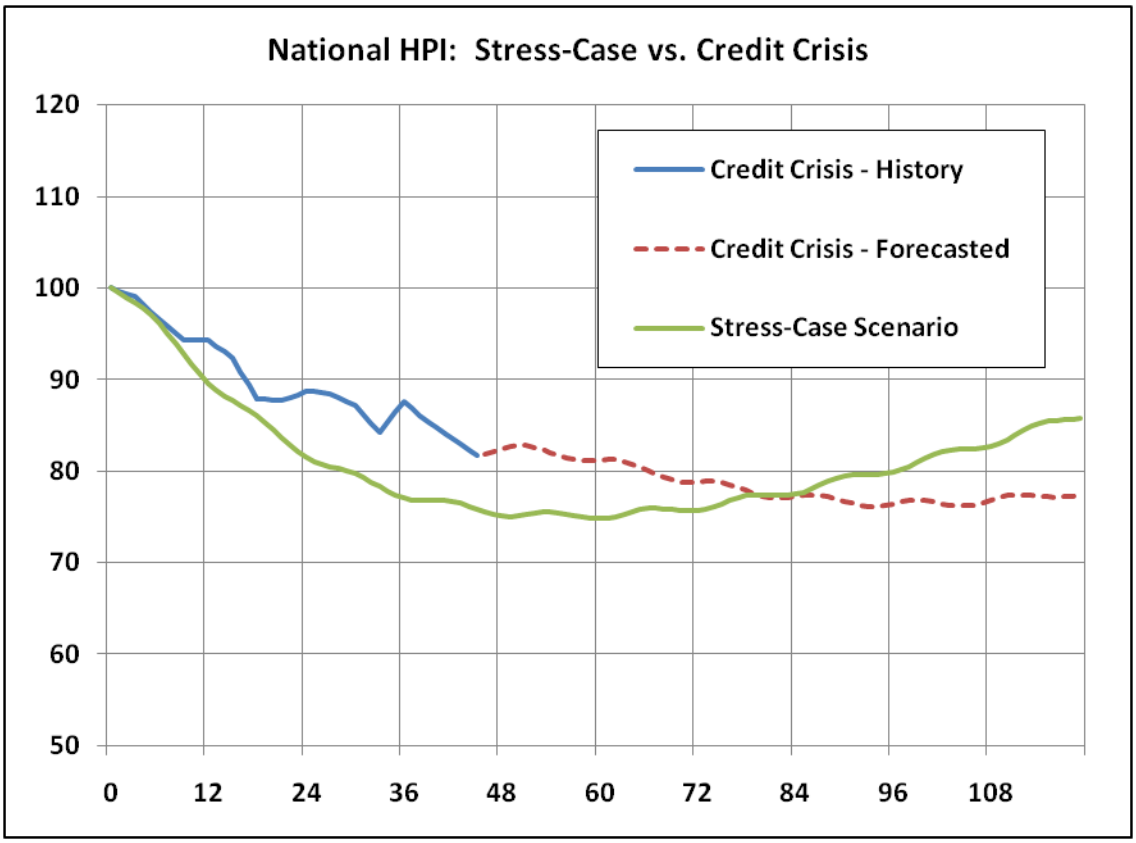
To evaluate the credit risk we calculated cumulative weighted-average pool losses (CL) across a range of scenarios using our residential mortgage credit model LoanDynamics™.

There are a number of parameters in each scenario, but for simplicity we will highlight the HPI assumptions. The total number of scenarios is 20, and they range from optimistic to severe stress. Accordingly, the 2-year national FHFA Purchase-Only HPIs range from +18% to -29%. The maximum HPI declines go from -4% in scenario 7 to -38% in the most severe stress scenario.

For purposes of this analysis we chose both a base-case and stress-case HPI scenario. The base-case forecast is our standard base-case scenario that we publish quarterly[2]. For the stress-case forecast, we chose the scenario that most closely replicates the HPI declines experienced since the credit crisis started in May 2007. Figure 2 compares the chosen stress-case scenario (scenario 15) to this "Credit Crisis" HPI scenario. The "Credit Crisis" HPI starts in May 2007, and concatenates the historical HPI declines experienced to date with our base-case HPI forecast. Both the stress-case and "Credit Crisis" forecasts have approximately 25% peak-to-trough HPI drop, although both the trough and recovery occur earlier in the stress-case scenario.

[2] For the latest forecast please see "The 2010 Q4 HPI Data: Is it a False Signal?"

Figure 2. Stress-Case HPI Comparison



The CL forecasts are provided in Figure 3 below. Approximately 20,000 randomly selected fixed-rate 2011-vintage QRM loans were run through LDM to determine the pool's CL. In the base case, CL were only 28 bps. In the stress-case CL were only 1.69%. In order for CL to reach 5%, the maximum national HPI decline would have to be approximately 37% with 28% of the decline occurring over the next 2 years – a scenario significantly worse in both magnitude and timing than a repeat of the current credit crisis. Thus, QRM loans would appear to have modest credit risk.

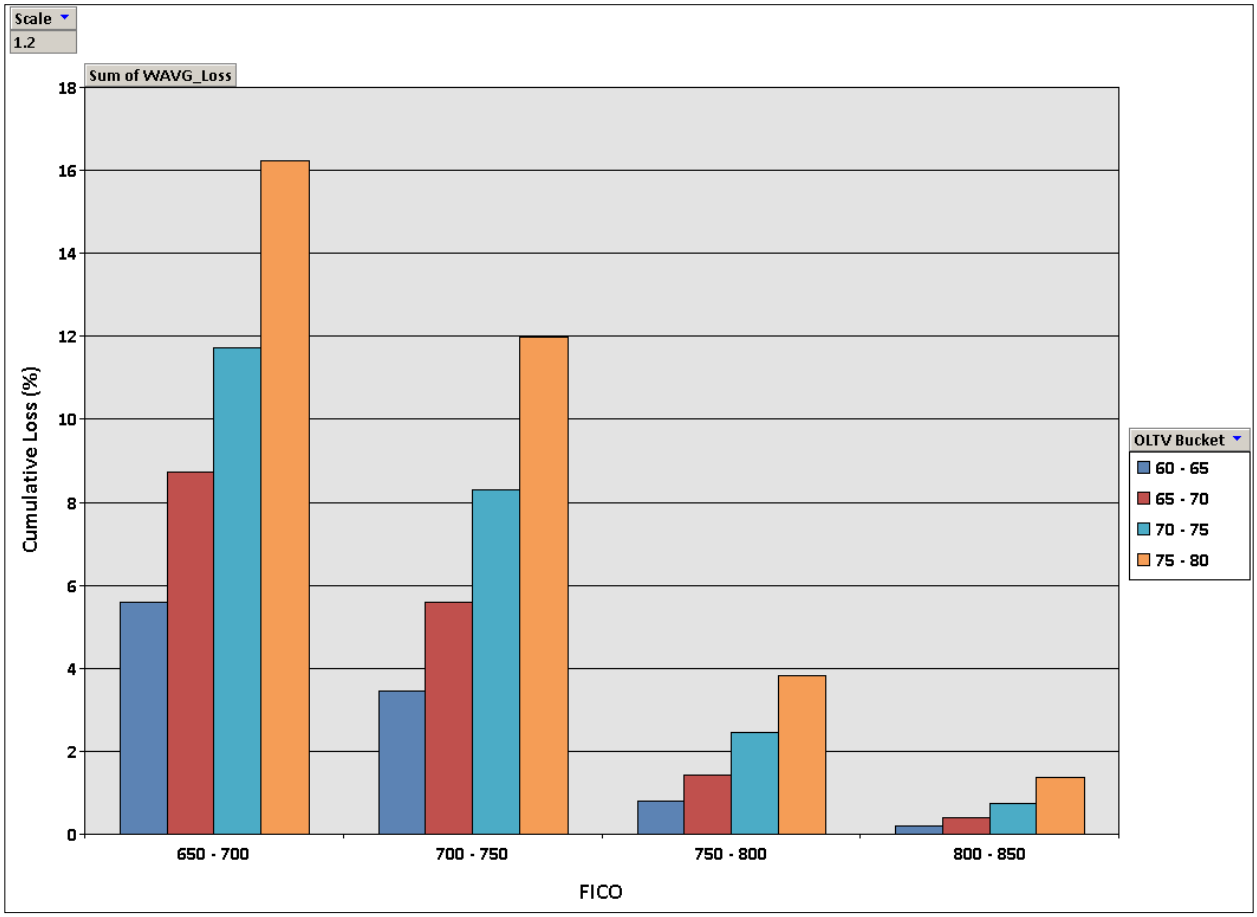
Figure 3. Cumulative Pool Losses by Scenario – Proposed QRM

Scenario	WAVG Loss	2-Year HPI Change	Maximum HPI Decline
1	0.04	18	-
2	0.05	14	-
3	0.07	10	-
4	0.09	7	-
5	0.12	4	-
6	0.16	2	0
7	0.21	-1	-4
8	0.28	-3	-7
9	0.36	-5	-10
10	0.46	-7	-12
11	0.59	-9	-15
12	0.77	-11	-17
13	0.98	-13	-20
14	1.25	-15	-22
15	1.69	-18	-25
16	2.25	-20	-28
17	2.95	-23	-31
18	3.80	-25	-33
19	4.82	-27	-36
20	6.03	-29	-38

Scenario 8 = Base-Case Scenario
Scenario 15 = Stress-Case Scenario

Our analysis is not complete, however. Before we conclude that all QRM-qualifying loans have minimal credit risk, we must profile CL across loan and borrower credit characteristics. Figure 4 below provides a simple stratification of CL for the same pool by FICO and OLTV in the stress-case scenario. Note that while the pool's weighted-average CL is just 1.69% (Scenario 15 in the table above), losses for the riskier subsets of the pool are much higher. For example, CL are greater than 5% for loans with FICO between 690 and 700, across all OLTV buckets greater than 60. CL reach 16% for the 75-80 OLTV bucket.

Figure 4. Stress-Case CL by FICO, OLTV – Proposed QRM



Note: All of the loans in the 650-700 FICO bucket have a FICO > 690

This analysis demonstrates that while stress-case losses on an "average" QRM-qualifying pool that looks like recent Freddie Mac origination should remain well below the 5% risk-retention threshold, it is possible to create QRM-qualifying pools with considerably higher credit risk. In other words, most of the recently originated loans that meet the proposed QRM standards have minimal credit risk. Some such loans, however, have fairly significant levels of credit risk. QRM does not distinguish between the two sets. On the other hand, there are likely to be some loans that have lower than average credit risk, but do not meet the strict QRM guidelines. These loans would be subject to 5% risk retention requirements despite their low risk levels.

Next, we replicate this analysis on an "Alternative" pool that mimics the QRM alternative proposal. We create the sample pool in the same way as with the QRM pool, but with expanded criteria that includes loans with higher LTVs and DTIs. So we again evaluate approximately 20,000 randomly selected 2011-vintage Freddie Mac loans. Many of the loans from the QRM pool may also be included in the Alternative pool. This is fine: We will evaluate both the effect of the change in pool composition on aggregate losses and the marginal losses of the higher-LTV loans.

Figure 5 below shows CL on the Alternative pool for each of the 20 scenarios. Unsurprisingly, the inclusion of higher-LTV loans leads to higher losses than the QRM pool. Base-case CL are 40 bp (28 bp for the QRM pool) and stress-case CL are 2.35% (1.69% for QRM). 5% CL are reached when home prices drop 33% nationally, with 25% of the decline occurring within 2 years.

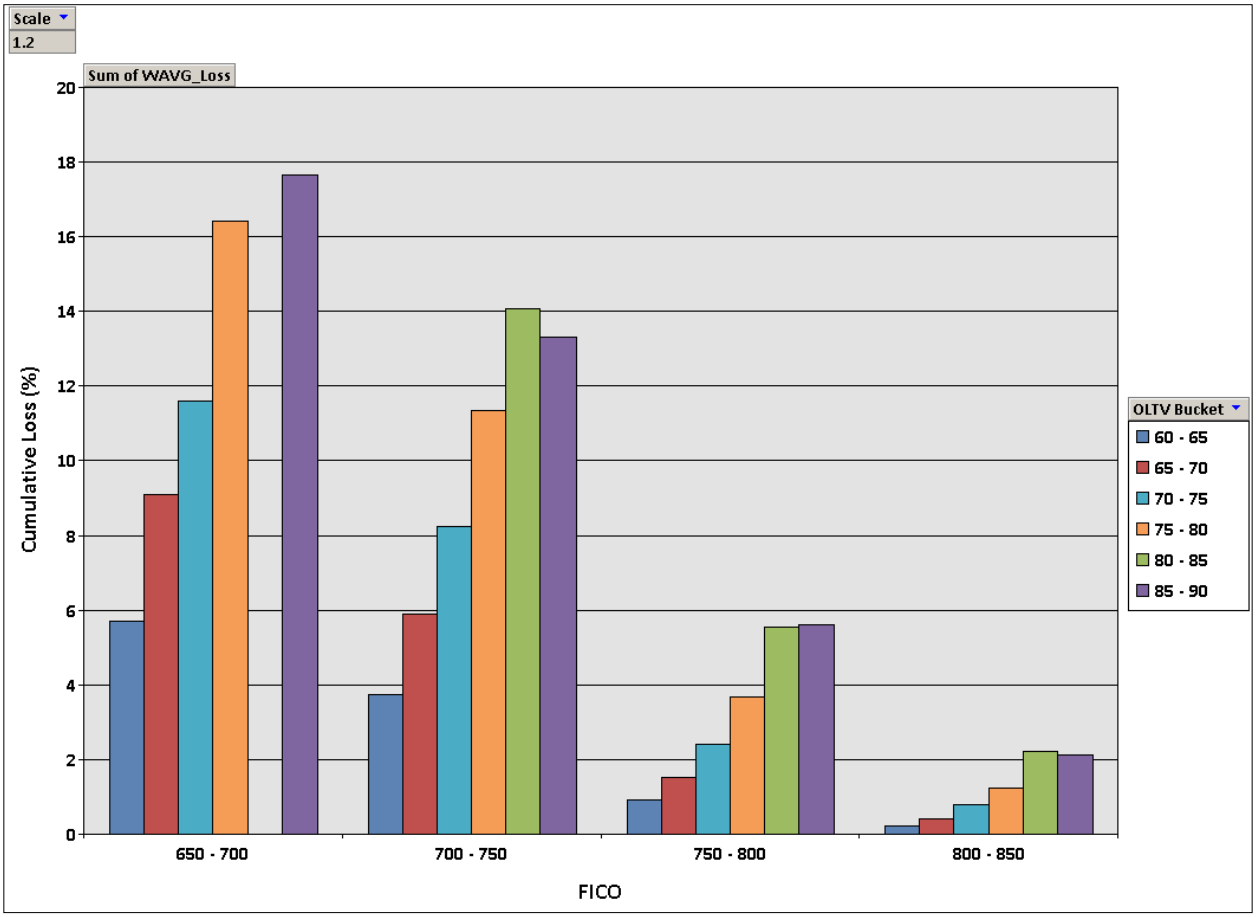
Figure 5. Cumulative Pool Losses by Scenario – Alternative QRM

Scenario	WAVG Loss	2-Year HPI Change	Maximum HPI Decline
1	0.05	18	-
2	0.07	14	-
3	0.10	10	-
4	0.14	7	-
5	0.18	4	-
6	0.23	2	0
7	0.30	-1	-4
8	0.40	-3	-7
9	0.52	-5	-10
10	0.66	-7	-12
11	0.85	-9	-15
12	1.09	-11	-17
13	1.39	-13	-20
14	1.75	-15	-22
15	2.35	-18	-25
16	3.10	-20	-28
17	4.02	-23	-31
18	5.13	-25	-33
19	6.43	-27	-36
20	7.95	-29	-38

Scenario 8 = Base-Case Scenario
Scenario 15 = Stress-Case Scenario

Figure 6 shows the stress-case CL by FICO and OLTV for the Alternative pool. CL for the 60 – 80 LTV loans are similar to the QRM pool. CL for the 81-90 LTV loans, which were included in the Alternative pool but excluded from the QRM pool, are higher than CL on loans with lower LTV. CL reach 17.5% for the 690-700 FICO, 85-90 LTV bucket. Interestingly, CL for the 85-90 LTV bucket are generally lower than the 80-85 bucket. This is because most of the former loans have 25% mortgage insurance (MI) coverage, while the latter have 12%.

Figure 6. Stress-Case CL by FICO, OLTV – Alternative QRM



Note: All of the loans in the 650-700 FICO bucket have a FICO > 690

Conclusions

Our results suggest that most of the recently originated QRM-qualifying loans have minimal credit risk. Base-case and Stress-case CL for loans with FICO > 750 and LTV < 75 are less than 28 bp and 3%, respectively. Some QRM-qualifying loans, however, have fairly significant credit risk – higher, indeed, than some non-QRM-qualifying loans (e.g., many of the IO loans in SEMT 2011-1). And the QRM proposal does not directly distinguish between the "risky" and "safe" loans; rather it uses a strict set of guidelines that do not necessarily reflect the markets best current understanding of credit risk. The proposal also utilizes a pass/fail methodology that may encourage gaming the rules on the margin. Loosening standards to those proposed in the Alternative proposal increases the universe of risky loans that are QRM-eligible.

We are concerned that the proposed QRM/Risk Retention proposal may not meet its desired goals unless there is confirmation that the underwriting data are correct. This certification of reps and warranties must be backed by capital. This concept was discussed in *Pipeline* Issue 89 (September 2010), which is referenced in footnote 1.