

# Outlook on US Housing Finance

## Putting The Puzzle Together



- **We see 5 forces of change in the mortgage industry** – At \$10 tril, the US housing finance system is one of the largest markets in the world and is undergoing extraordinary change, which we call the 5 forces: GSE reform, new regulations, higher costs and capital, plus the transition from a refi to a purchase market. We address the 5 forces and how we see them impacting the economics of the business and competitive landscape.
- **Housing is unlikely to see any material benefit from looser mortgage underwriting** – In January 2014, the Ability-to-Repay (ATR) rule will require lenders to make a good faith determination that a borrower can repay their mortgage. Loans that meet the standards of a Qualified Mortgage (QM) are provided a legal safe harbor against lawsuits from defaulted borrowers. GSE conforming mortgages are exempt from ATR for 7 years, so they should be the “lower bound” for underwriting, but lenders are applying stricter standards (via credit overlays) to mitigate uncertainties of GSE putback risk and ATR implementation. Thus we expect only limited loosening in underwriting standards. Since banks want the legal safe harbor, they are unlikely to originate non-QM loans due to unfavorable risk/reward (in case of a default and borrower sues under ATR, the CFPB est costs are \$65-140k vs \$2k in profit). Only exception being jumbo space with very little credit risk. To satisfy affordable housing goals for loans that do not satisfy QM/GSE standards, we believe govt support will need to continue to play a key role through FHA.
- **GSE reform must include a govt backstop; mortgage spreads to tick higher** – We do not see a specific trigger for GSE reform, but it seems likely due to bipartisan support to reduce taxpayer exposure. One avenue to bring in private capital is through balance sheet retention, and banks are retaining adjustable rate mortgages (est ROE of 12-13%), but have significantly less appetite for 30-yr fixed rate (~80% of market) due to interest rate risk. In order to maintain the 30-yr, GSE reform will need to require a securitization solution and include an explicit government backstop to maintain the TBA market, which is essential to mortgage market liquidity. We believe the proposal of having private capital absorb the first 5-10% loss and government taking the tail risk is feasible and should only have a limited impact on mortgage spreads (10-40 bps) since an argument can be made that the GSEs are no longer underpricing credit risk with g-fees at ~60 bps (vs ~20 bps pre crisis). This is also supported by recent pricing of credit risk sharing deals and that jumbo rates are currently below conforming mortgages.
- **Private label MBS best suited to serve jumbo prime segment** – We believe the private label market can be viable for pristine credit jumbo loans, but outside of that there are too many investor concerns when credit risk is introduced (ie eminent domain, rep & warranty). We address how PLS profitability is marginal at best today (including impact of higher subordination), and show that economics still favor GSE execution.
- **We address whether mortgage banking is a good business** – In general, large banks have historically priced the origination business to be a breakeven standalone business in order to get attractive servicing rights and customer relationships. We see only minor changes in this business with retail channel gaining share and broker channel shrinking, and non-banks going after niche non-QM markets. With higher capital requirements, we estimate bank servicing ROEs fall to ~15% (vs 40% pre-crisis) and banks will optimize by selling non-core/delinquent MSRs. Non-banks with scale will be the beneficiaries, earning ~20% ROEs. Lastly, we see opportunities in credit risk mgmt for fixed income investors to participate in risk-sharing deals with potential returns of ~7.5% vs 5-6% for securities of similar quality, a potentially large opportunity for mortgage insurers, and niche lenders with superior analytics to identify attractive risk/reward in non-QM space.

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### See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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## Contents

<b>Executive Summary</b>	<b>4</b>
<b>Five Forces of Change</b>	<b>13</b>
Force 1: Reduced Government Involvement	14
Force 2: Ability-to-Repay/QM Rule	24
Force 3: Higher Capital	28
Force 4: Transition from Refi to Purchase Market	31
Force 5: Higher Compliance Costs	34
<b>Direction of GSE Reform</b>	<b>37</b>
<b>Return of Private Label Securitization</b>	<b>41</b>
<b>Mortgage Underwriting Standards</b>	<b>49</b>
<b>Implications for Mortgage Banking Business</b>	<b>55</b>
Origination	56
Servicing	61
Credit Risk Management	66
<b>Appendix: Details on GSE Reform Proposals and Ability-to-Repay Rule</b>	<b>71</b>
<b>Appendix A-1</b>	<b>77</b>

## Table of Figures

Figure 1. The US housing finance system is a ~\$10 tril market	4
Figure 2. Government has played a dominant role in mortgage finance post-crisis	14
Figure 3. The GSEs (including Ginnie Mae) control 65% of the US mortgage market between retained mortgages and credit guarantees on MBS	14
Figure 4. FHFA has more than doubled g-fees compared to pre-crisis	15
Figure 5. The goal is for the Common Securitization Platform to replace the GSE back-office securitization functions, while other aspects of GSEs will be replaced by private capital	17
Figure 6. Freddie Mac tested the first credit-risk sharing deal in July, selling some of the subordinate M-1 and M-2 tranches	18
Figure 7. Mortgage insurance industry is dominated by a handful of players	19
Figure 8. Banks can earn a ~12-13% return retaining 5/1 adjustable rate mortgages	20
Figure 9. Treatment of compensation significantly disadvantages the broker channel	26
Figure 10. Refi volumes have been elevated at >65% of total post-crisis	31
Figure 11. Origination volume is expected to decline over 30% in '14 as growth in purchase is not enough to offset drop-off in refi	31
Figure 12. Purchase volumes closely track changes in home prices	32
Figure 13. Large refi share doesn't always translate to purchase share	33
Figure 14. Channel mix for the top 10 mortgage lenders	33
Figure 15. Cost to originate per loan has increased 24% from 2Q10 to 2Q13	35
Figure 16. QE1 announcement resulted in significant tightening in mortgage spreads, but QE3 had a more muted impact	40
Figure 17. Of the 40 private label deals done post-crisis, Redwood Trust has been the biggest issuer	42
Figure 18. Non-agency spreads remain wide, making issuance unattractive	42
Figure 19. Higher subordination requirements have had large negative impact on private label securitization economics	47
Figure 20. In the current environment, GSE securitization is slightly more profitable than private label securitization	48
Figure 21. Subprime/Alt-A comprised over 30% of total MBS originations in 2005-2006 vs 0% today	50
Figure 22. National FICO score distribution	51
Figure 23. FICO scores on GSE purchases were 710-730 pre-crisis, but have risen to 760 since 2008	51
Figure 24. LTVs on GSE purchases trended up to 75% pre-crisis, but have improved to sub-70% since 2008	51
Figure 25. Refinance share declined to ~51% of originations in 3Q13, and latest MBA forecast is for it to be 40% of originations in 2014-15	53
Figure 26. Fed surveys indicate a small fraction of lenders are loosening residential mortgage standards	53
Figure 27. Avg FICO/ LTVs show slight easing of underwriting for conventional purchase mortgages...	54
Figure 28. ...but DTIs aren't moving, implying that lenders are locking-in 43% DTI caps, with some margin of safety	54
Figure 29. The retail channel has gained market share at the expense of the broker channel	56
Figure 30. On a GAAP basis, PHH's mortgage production business made \$97 mil in YTD13	57
Figure 31. Pre-tax cash flows on PHH's origination business have been negative 8 of the last 11 quarters	57
Figure 32. PHH's margin on the sale of mortgages was 215 bps in 3Q13, excluding the value of the servicing and credit costs	58
Figure 33. Wells Fargo's internal stats show cross sell potential from mortgage is limited	59
Figure 34. Gain on sale margins remain significantly higher than pre-crisis levels	60
Figure 35. We do not expect big changes to origination market share rankings	60
Figure 36. Diagram of mortgage servicing business	61
Figure 37. We estimate bank ROEs for servicing have fallen from 40% to ~13% due to higher costs and capital requirements	61
Figure 38. There has been a clear shift in market share for servicing to non-banks over the past couple years	62
Figure 39. Ocwen's delinquency percentage (90+ Days) by portfolio	63
Figure 40. Non-banks can generate an attractive ~20% ROE on troubled/highly delinquent loan servicing	64
Figure 41. Market share of non-agency subprime servicing has shifted to non-banks over the last 3-4 years	65
Figure 42. Of the \$10 trillion mortgage market, the government only holds 20%...	66
Figure 43. ...but holds 62% of the credit risk via credit guarantees on agency MBS outstanding	66
Figure 44. The credit risk of mortgages sold in the recent STACR deals exhibited attractive yields vs assets with equivalent levels of credit risk.	67
Figure 45. A scale back by the FHA could potentially increase the revenue pool for private mortgage insurers by ~25%	67
Figure 46. The FHA has expanded beyond low income borrowers, which can be seen by higher FICO scores from 1Q07 to 2Q13	68
Figure 47. The FHA captured market share post-crisis thru low downpayments, low premiums, and expanding its customer base...	68
Figure 48. ...But more recently, the FHA appears to be scaling back its size, as market share has declined from 80% in 2010 to 53% in 2Q13	68

## Executive Summary

**Figure 1. The US housing finance system is a ~\$10 tril market**

	Total 3Q13	YoY Growth
<b>Residential Mortgage</b>		
Residential Mortgage Loans	2,865	(1%)
Home Equity Loans	715	(9%)
Agency MBS	5,465	4%
Fannie Mae	2,744	4%
Freddie Mac	1,526	1%
Ginnie Mae	1,400	8%
Other	(206)	
Non Agency MBS	819	(15%)
Alt-A	266	(13%)
Option ARM	107	(13%)
Prime	173	(14%)
Subprime	292	(6%)
Other adjustment	(19)	
<b>Subtotal</b>	<b>9,864</b>	<b>(1%)</b>

Source: Citi Research, Federal Reserve Flow of Funds, FDIC, SIFMA, Haver, FNMA and FRE filings

The ~\$10 tril U.S. housing finance system is facing significant uncertainty as several major forces come to bear, including both finalized and yet-to-come regulatory and political actions. In this report, we attempt to tackle the key questions on investors' minds regarding the future of US housing finance, including: 1) is mortgage banking a good business? 2) what is the likely structure of the future system and what is the role for the US govt vs private capital?; 3) what would it take to bring private capital back into the market?; 4) what are the implications on availability of mortgage credit?; and 5) how are business models likely to evolve and which firms will fare best in the new environment?

**1) We see five major forces driving significant change in the mortgage market going forward** – In our view, the confluence of five key forces will significantly impact the mortgage market over the next several years:

■ **Force 1: Momentum on GSE reform has picked up as the govt has been taking >85% of the credit risk on new originations, which is unsustainable** – Since 2009, Fannie Mae, Freddie Mac, and Ginnie Mae (FHA/VA) conforming loans have comprised 85-90% of mortgage originations, while agency MBS has accounted for 95-99% of total MBS issuance in this period. The GSEs and Ginnie Mae control ~65% of the US mortgage market between retained mortgages and credit guarantees on MBS outstanding, up from ~50% in 2006. Politicians unanimously agree that the current system overexposes taxpayers to the housing market and thus there has been momentum on reform.

- **GSE credit risk guarantee fees are coming closer in-line with what private market would demand...** – The FHFA has more than doubled the GSEs' guarantee fees (g-fees) from 20-25 bps pre-crisis vs ~60 bps today in an effort to charge more in line with what the private market would demand. In Dec 2013, the FHFA announced a 10 bps hike which will become effective in Apr 2014, bringing the g-fee to ~70 bps. (Note: this increase was put in place by prior FHFA Director DeMarco and it is expected that new Director Mel Watt would seek to postpone/eliminate it). Using data from the recent GSE risk sharing deals, Citi agency MBS research estimates that g-fees of 50-70 bps are what the private market would demand, in-line with today's levels.
- **...but it is operationally daunting to enact meaningful reform near-term, and expect the mortgage market will stay largely "status quo"** – Reform is difficult in near term as the infrastructure being built for future mortgage securities issuance is a technically complex multi-year effort and the structure for the government to offload credit risk needs to be established and tested.
- **Govt involvement in the housing market is necessary to maintain the 30 yr fixed rate mortgage and to meet affordable housing goals** – Policymakers are intent on maintaining the 30 year fixed rate mortgage (FRM) with no prepayment penalties to make homeownership affordable for Americans. With estimated returns of shorter duration mortgages like 5/1 ARMs in the 12-13% range, banks will hold these loans on balance sheet, but there is little interest to retain a significant amount of 30-year FRMs due to interest rate risk. Thus in order to keep this key product intact, it will require a capital markets solution (ie securitization) and a govt backstop which facilitates liquidity via the TBA market. In addition, the government will need programs in place to lend to low income borrowers, as private capital will be discouraged from doing so under the QM Rule. Policymakers appear sensitive to this issue as GSE reform proposals largely leave the FHA intact.

- **Force 2: We believe Ability-to-Repay/QM will lock-in today's tight underwriting standards** – The finalized Ability-to-Repay rule released in January 2013 requires lenders to make a good faith determination that a borrower can repay their mortgage before granting it. Loans that meet the standards of a Qualified Mortgage (QM) are presumed to meet this requirement and are provided a legal safe harbor against lawsuits from defaulted borrowers. Since lenders will want the legal safe harbor to protect against litigation risk, we expect QM to set the size of the mortgage market going forward. The risk/reward is not favorable for lenders to extend mortgages outside of QM and high net worth non-QM due to lack of safe harbor. The CFPB estimates that QM legal costs can reach ~\$65-140k on a \$210k mortgage compared to only ~\$2k in revenues from originating that mortgage origination today.
  - **>95% of originations today would qualify for QM ...** – GSE-conforming and FHA/VA loans have comprised 85-90% of post-crisis originations and qualify as QMs during an exemption period that spans up to 7 years. Of the 10-15% of non-conforming loans being originated today, CoreLogic data shows that only ~20% do not qualify as QM; half due to non-compliant product types (ie interest-only, term over 30 years, or negative amortization) and the other half due to DTI ratios over 43%.
  - **Lack of QM status will not hinder jumbo interest-only originations to high net worth/private banking clients** – We expect banks to continue originating non-QM mortgages for high net worth clients, as they are comfortable with the credit risk of these borrowers and their strong financial profiles make it difficult for them to sue on the basis of ability-to-repay.
- **Force 3: Higher capital requirements** – Between Basel 3 capital rules and the SLR, banks will be required to hold more capital against MSRs and mortgages.
  - **Mortgage servicing rights are treated more punitively under Basel 3** – Basel 3 rules impose higher risk-weights on mortgage servicing rights (250% vs 100% under Basel 1) and also place a 10% limit on the amount of MSRs includable in Tier 1 common equity and a 15% limit when combined with deferred tax assets and investments in financial institutions.
  - **Balance sheet retention of mortgages is not materially affected by the proposed SLR rule** – We do not believe the Supplementary Leverage Ratio (SLR) will materially raise the capital requirements for mortgages as the higher capital requirement (5-6% capital held against mortgages vs 4% previously under a risk-weighted approach) will be offset by the fact that preferred equity is included as part of capital in calculating the leverage ratio.
    - **One impact from SLR may be reduced demand from mortgage REITs,**
      - We expect that the cost of repo financing will increase due to the SLR. This will negatively impact the profitability of mortgage REITs which rely on repo to finance investments.
- **Force 4: The ~75-100 bps rise in mortgage rates has quickly reoriented the market from refi to purchase** – Refi volumes comprised 70-75% of originations in 1H13 but due to the increase in interest rates since May 2013, refis are projected to decline to ~40% of the mix in 2014. And the business model to access borrowers is very different in a purchase vs refi market.
  - **Pool of refi-eligible mortgages has declined by >50%** – Based on CoreLogic and Freddie Mac data, only ~35% of prime loans are eligible to be refinanced today vs ~90% at the beginning of 2013.

- **Access to borrowers is key to succeeding in a purchase-oriented market**  
– Purchasing a home is a high-touch transaction because it is a complicated process and a major financial decision. It is critical for lenders to have strong relationships with real estate agents because they are gatekeepers to for-purchase borrowers, as they guide them through the buying process.
- **Force 5: Higher compliance costs for origination and servicing** –The Dodd-Frank Act has raised compliance requirements with increased documentation of borrower income and additional steps in the underwriting process, which has driven the cost to originate a loan up 24% since 2Q10. On the servicing side, costs have increased 78% from 2010 to 2012 per MBA/Stratmor data.
- **Barriers to entry on origination remain low ...** – There are some economies of scale due to compliance, but overall there do not appear to be significant barriers to entry. Cost structures seem to be variable and smaller players have options to further adjust their cost structures via outsourcing, which will allow smaller banks to continue to compete. One consultant we spoke with believes that \$100 mil in monthly originations are adequate to compete.
- **...But we do see economies of scale in servicing** – Economies of scale remain important in servicing where costs to comply with industry regulations, as well as the skills needed to hedge MSR values and service delinquent servicing present barriers to entry. Bank servicers are trying to combat rising costs by selling delinquent servicing to specialized servicers as well as selling servicing for non-core customers that they cannot cross-sell.

**2) While there is no trigger for GSE reform in near term, it does seem likely due to bi-partisan support** – Despite Congress' recent push to advance GSE reform, we do not expect significant changes to the market over the next 3-5 years due to the dominance of the GSEs in today's market, their financial contributions to the federal deficit, and infrastructure and operational uncertainties which will take years to resolve. However, we see GSE reform being pushed through in longer term due to willingness from the policymakers to reduce taxpayer exposure.

- **GSE reform may result in mortgage rates ticking 10-40 bps higher** – As noted above, the govt historically subsidized the mortgage market by underpricing its g-fee, but at ~60 bps today, Citi Research estimates that g-fees are roughly in-line with what the private market would charge in a stable environment like today. With the g-fee roughly in-line and jumbo mortgage rates below conforming mortgage rates, we believe the govt subsidy is relatively low today, but a reduced govt role post-reform may ultimately cause mortgage rates to rise by 10-40 bps depending on the environment.
- **GSE reform in the form of Corker-Warner is unlikely to significantly change economics of the business with exception of benefitting smaller players** – While most banks would prefer to maintain the status quo, if the Corker-Warner bill were passed, we believe the mortgage market would largely look like it does today (30-yr FRMs intact, functional TBA market) without any major winners or losers. Smaller mortgage players should benefit from the Common Securitization Platform as it will enable them to access capital markets funding directly, which would give them an alternative method of secondary market execution. Today, smaller originators must sell their mortgages as whole loans.

**3) We believe the future private label securitization market can only absorb a small piece of the QM market, but will be able to continue to support the jumbo prime segment of the MBS market** – We believe the private label



securitization (PLS) market will largely look like it does today: viable for the segment of the market represented by prime jumbo loans, but not an option for QM (due to limited appetite for credit risk and a number of investor overhangs) or low income non-QM (due to litigation risk on top of credit risk/investor overhangs).

■ **PLS will continue to be sustainable for the jumbo segment, the only space where there has been issuance post-crisis...** – The only private label issuance that has been done since the crisis has been backed by jumbo mortgages of pristine credit quality. Issuance has been limited due to lack of profitability, but after speaking with industry participants, there seems to be plenty of demand to take on more jumbo MBS supply due to the limited credit risk.

■ **...but it can only support a sliver of QM execution due to lack of investor capacity to bear additional credit risk, coupled with a long list of investor overhangs** – We do not believe private label securitization can be a viable solution for the broader swath of the market comprised of QM loans because there is not enough appetite from investors to bear the credit risk. For example, we estimate that the AAA investors (ie insurance, pension funds) burned during the crisis have decreased their holdings of non-agency bonds by 90% from ~\$440 bil to ~\$40 bil. Furthermore, there is a long list of private label MBS investor overhangs (ie protection from eminent domain seizures and standardization of reps and warranties) that remain outstanding from the crisis and it is unclear to us how they get resolved.

■ **PLS is also not a solution for low income non-QM segment** – Due to litigation risk, banks will be unwilling to originate and securitize low income, non-QM mortgages. Thus we believe the govt will continue to “pick up the slack” in this segment through FHA/Ginnie Mae, similar to what we are seeing today.

**4) We expect only slight loosening from today’s tight mortgage underwriting standards** – We expect mortgage underwriting standards to loosen naturally on the margin as the refi wave subsides and lender capacity constraints ease; however, there is unlikely to be a meaningful loosening because banks will maintain credit overlays to address GSE putback risk and upcoming Ability-to-Repay implementation.

■ **In the near term, the end of the refi boom will lead to some easing in lending standards** – The refi boom led to origination capacity constraints, which caused lenders to focus on the easiest to complete mortgage applications (ie the most credit worthy borrowers). As the market transitions to purchase, we expect lending standards to loosen on the margin, mostly in FICO scores. We estimate that if GSE purchased mortgages revert to pre-crisis levels, mortgage credit could loosen by 15%.

– **Lenders are implementing more stringent overlays than required by GSEs to mitigate putback and Ability-to-Repay/QM risks** – Based on our conversations with mortgage underwriters and analysis of GSE purchase requirements relative to reported credit statistics, we believe that today’s tight mortgage lending standards are due to lenders overlaying more stringent underwriting to deal with uncertainties over GSE putback risk and upcoming Ability-to-Repay implementation and thus will not loosen by the full ~15% suggested by FICO scores.

• **There has been more loosening in jumbo than in conforming mortgages** – A number of lenders have reduced downpayment requirements on jumbo mortgages from 20% to 15%. Credit metrics on closed conforming mortgages do not indicate much loosening.

- **Longer term, mortgage credit will likely remain tight due to GSE putback risk and QM rule** – Over the longer term, we believe mortgage credit will remain tight as lenders include a "margin of safety" credit overlay on mortgage originations to address GSE putback risk and Ability-to-Repay/QM risks. These risks are likely to intensify going forward as the GSEs have adopted a "zero defect policy" on purchased loans and Ability-to-Repay is expected to usher in a new wave of litigation.
  - **Further tightening is likely if GSE reform passes or QM's GSE exemption expires** – Loans with DTI ratios >43% are temporarily considered QMs for up to seven years through 2021 if they are eligible to be purchased/insured by the GSEs/other government agencies and do not have risky product features.
  - **Newly-confirmed FHFA Director Mel Watt may seek to clarify GSE putback risk**– Rep. Mel Watt was confirmed as FHFA Director in Dec 2013 and it is expected that he will take actions to increase mortgage credit availability, likely by clarifying GSE rep and warranty claims. Our conversations with industry experts suggest that it would be difficult for Mr. Watt to do this as the GSEs and DoJ continue to aggressively go after banks on rep and warranty claims. Also, while fear of rep and warranty claims are a primary driver of today's tight credit overlays, QM is the other major bound on the mortgage credit box, especially longer-term when the GSE exemption expires.
- **Homebuilders are negatively impacted overall due to tighter credit availability, but this is only one factor holding back housing demand** – We estimate that new and existing home sales (\$) transactions which drive the purchase mortgage market will rise by ~10% per year in 2014 and again in 2015. While existing sales make up over 80% of new and existing home transactions (\$), the depressed and recovering new home market should fuel the majority over the coming 2 years. We see currently tight mortgage lending standards as one important constraint to the pace of the new home construction/sales rebound, but three other constraints are just as, and if not, more important. More specifically, we believe the following 3 key issues need to be addressed before we return to a (demographics-based) mid-cycle housing start level of ~1.4 mil by 2015E vs 0.9 mil in 2013E. First, we need stronger buyer confidence, and importantly, household income growth, which has shown virtually no (inflation-adjusted) growth relative to the mean since 1980. Second, we need favorable housing affordability and we have that. Housing affordability is currently ~25% better than the mean since 1980 as a function of sub-7% 30-year fixed mortgage rates (note: currently running at ~4.5%, and each 50 bps rise in the 30-year requires 5% income growth to offset). Third, the homebuilding supply chain including land development and labor supply needs to mend post the financial crisis, which has been occurring slowly.
  - **Changing mortgage lending standards likely will be no meaningful catalyst for the homebuilders in either direction** – In the near-to-medium term, the builders may benefit from some marginal loosening around the edges in lending standards for conventional purchase mortgages. However, as we identify in this report, we do not expect the conventional purchase mortgage market to ease the full 15% that it has tightened since the late '90s due to the upcoming implementation of Ability-to-Repay/QM. Further, we do not expect more lenient subprime/Alt-A lending to return which made up 19-34% of mortgage originations in 2004-07, and the cessation of subprime/Alt-A originations should permanently shrink the pool of qualified homebuyers relative to the past housing bubble.



**5) Mortgage banking is not a very attractive business** – There are three avenues of value creation in the mortgage business: 1) origination, 2) servicing, and 3) credit risk management. In general, banks historically ran mortgage origination as a breakeven standalone business in order to help capture the servicing and customer relationships. Servicing has attractive returns, but has become less attractive due to higher costs and capital requirements. We do anticipate opportunities on the credit risk management side as private capital can generate attractive returns from increased balance sheet retention, investment in GSE risk-sharing deals, and potentially private mortgage insurance opportunities.

■ **Origination – banks run origination at marginal profitability to generate servicing rights and customer relationships, which will likely continue going forward** – Although mortgage origination can be profitable, banks historically ran it at marginal profitability to get attractive servicing rights and customer relationships. The business may appear more profitable on a GAAP accounting basis because a portion of the gain on sale includes the value of the mortgage servicing rights, but by removing the MSR gain to isolate the value of originating/selling a mortgage, it can be seen that origination is negative cash flow at the time of sale. Origination cash flows were positive for a period in mid-2012/early-2013 as the refi wave led to origination capacity constraints, but margins will revert to lower levels as volumes decline and competition increases.

– **Origination market share is unlikely to change materially going forward** – We expect banks to continue to dominate in the QM space, but to optimize by focusing on retail and exiting non-core third-party origination channels. Some non-bank servicers have diversified into origination (eg OCN, NSM) to capture the gain on sale of origination and the volume synergies of refinancing existing servicing customers, but we believe the value proposition for these players will be difficult as they cannot offer relationship-based pricing vs banks. Thus non-banks will likely take share mostly in the non-QM space where banks pare back. The market share of the top ten mortgage lenders was ~40% in 2000 and grew to ~80% in 2010, but is down to 53% as of 3Q13 as banks have pared back and we expect stabilization from here.

– **Channel mix will likely continue to shift toward more profitable retail channel and away from broker** – Going forward, banks will continue to focus on the retail channel, and we also expect the correspondent channel to remain viable as both a source for CRA lending and as an option to source additional volumes when the spreads are attractive.

- **Retail channel will continue to be the dominant origination channel** – The retail channel is the preferred channel of mortgage origination because it is the most profitable (as the economics are not shared with a third-party) and the lender interacts with the borrower directly, which enables better underwriting. We note that retail origination is the highest fixed cost channel and smaller mortgage players may outsource their fulfillment operations.
- **Correspondent channel will remain viable as a source of loans to fulfill CRA needs** – Banks are increasingly narrowing their mortgage operations to core customers within the QM box and thus they are not focused on sourcing loans to meet Community Reinvestment Act requirements. FHA originations are not the solution, so correspondent lenders will be the source for these loans. Also, while the correspondent channel is limited in profitability during normal times, it offers a low-cost “call option” to source additional volumes when spreads are attractive.

- **Broker channel (10% of originations today vs 20-30% pre-crisis) will likely shrink further** – Over the last six years, large cap banks have exited the broker channel due to lack of control and oversight over the underwriting quality of brokered originations. The Ability-to-Repay rule will further shrink the channel because it counts compensation paid to brokers (ranges from 50 to 200 bps or more) toward the 3% cap on pts and fees, which disadvantages the broker channel vs other channels.
- **Servicing – higher capital reqs have reduced servicing ROEs from over 40% to ~13% for banks, leading to sales of delinquent/non-core MSR** – Higher risk-weightings on MSRs have caused servicing ROEs for banks to decline from over 40% to ~13%, which is causing them to optimize profitability by selling delinquent/non-core servicing rights. Smaller banks such as Flagstar also seek MSR sales as an avenue for capital relief. Non-banks are well-positioned to capture this share as they can generate a ~20% ROE on credit sensitive/delinquent servicing. Economies of scale remain important in servicing, as margins on individual loans are thin and personnel/operational costs are high.
  - **Banks will look to optimize servicing profitability via non-core MSR sales...** – We expect banks will seek to optimize servicing profitability by focusing their servicing businesses on conventional, performing mortgages for core long-term customers and selling MSRs on high-cost delinquent loans and/or non-core customers where there are limited cross-sell opportunities. Smaller banks will also seek MSR sales as a means for capital relief.
  - **...And we expect this to benefit non-banks with scale that have an economic advantage and no capital requirements** – Non-bank specialty servicers have built their business models on high-touch delinquent loan servicing and some players like OCN have cost advantages due to off-shoring and technology platforms. Non-bank servicers are also unburdened by capital constraints. We estimate that non-banks can generate an attractive ~20% ROE on credit sensitive/delinquent servicing and expect them to continue taking share from banks that are scaling back. The market share of NSM, OCN, and WAC has quadrupled from ~3% in 4Q11 to ~12% in 3Q13.
- **Credit risk management – there are potential opportunities** – Historically, the GSEs have not appropriately priced for the credit risk, but with g fees now closer to 60 bps, we believe this will start to crowd-in private capital. While we do not expect this to lead to a significant increase in private label securitization, we do believe the increased role of private capital will take the form of increased balance sheet retention, fixed-income investor interest in risk sharing deals, opportunities for private mortgage insurers, and non-QM investments.
  - **Balance sheet retention – We estimate a decent ~12-13% ROE for holding a mortgage, but there are natural limits due to interest rate risk** – After adjusting for the prepayment optionality in agency MBS and credit costs of holding a mortgage, we estimate that holding a mortgage generates a ~12-13% ROE. While there is significant demand and capacity for banks to add mortgages to their balance sheets, there is limited appetite for the 15- and 30-year fixed-rate mortgages.
  - **Credit loss sharing instruments offer attractive returns for fixed income investors** – Based on analysis from Citi Research's non-agency MBS team, the 1<sup>st</sup> mezzanine tranche of Freddie Mac's first risk-sharing deal has a relatively higher yield (3.67% on a loss-adjusted basis) relative to other asset classes of similar credit quality, such as Investment Grade Corporate bonds,

BBB Corporates, re-securitized prime MBS securities. The 2<sup>nd</sup> mezzanine tranche is also attractive (loss-adjusted yield of 7.56%) relative to other high yield assets with equivalent levels of credit risk.

- **Scaling back the FHA will provide opportunities for mortgage insurers, but they will not be able to capture all of the ceded market share** – As the FHA scales back, private mortgage insurance can step in to fill some of the void, as it is already doing (see Figure 45). Reform and policy goals can be expected to force the FHA to focus on lower income borrowers, which may create an opportunity for private insurance to gain share in the higher income, more creditworthy borrowers the FHA no longer serves. We estimate that if FHA/GNMA loans return to 5% of industry originations as they were pre-crisis, this could represent a \$1.3 bil annual revenue opportunity for private mortgage insurers, which is ~25% of 2012 industry revenues.
- **Non-QM lending may be an opportunity for non-banks that have the right business model** – With many of the players focused on the QM space due to litigation risk, there is a potential opportunity on the non-QM lending for non-bank niche lenders (potentially backed by private equity players) to develop a business model to monetize what should be fairly large spreads. For example, this space may be a natural fit for delinquent servicers that can develop robust predictive models that can forecast a borrower's propensity to default.

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## Five Forces of Change

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## Force 1: Reduced Government Involvement

**Figure 2. Government has played a dominant role in mortgage finance post-crisis**

	Govt as % of Total	
	MBS Issuance	Originations
2004	54%	46%
2005	45%	38%
2006	44%	36%
2007	62%	52%
2008	95%	81%
2009	97%	90%
2010	95%	90%
2011	98%	84%
2012	99%	87%

Source: Citi Research, Inside Mortgage Finance

Note: securitizations include Fannie Mae, Freddie Mac, and Ginnie Mae MBS issuance; originations include GSE-conforming and FHA/VA loans

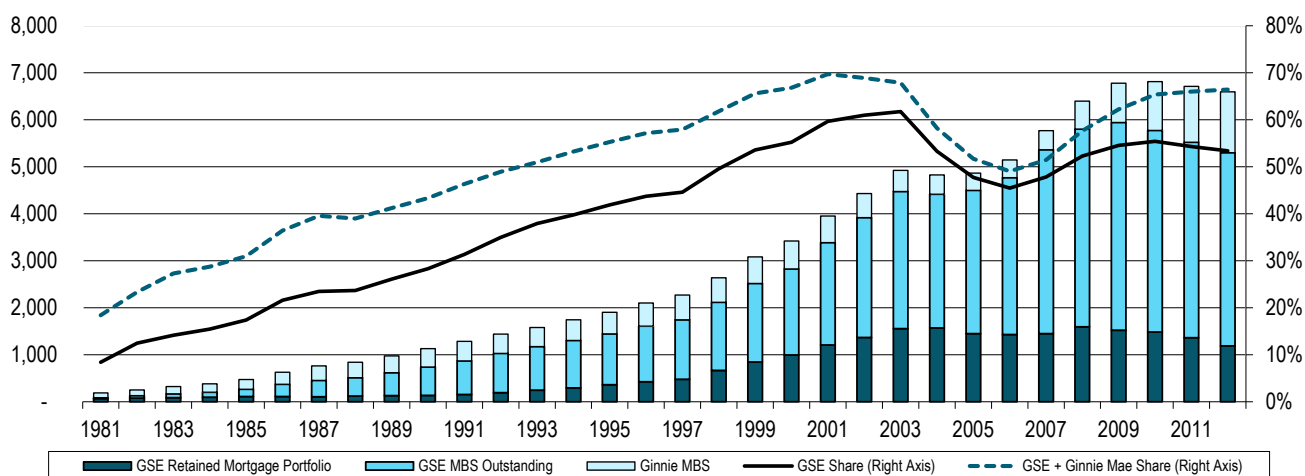
The government plays an enormous role in today's mortgage market – as we show in Figure 2, government MBS issuance has dominated the market post-crisis at 95-99% of total MBS originations and government guaranteed/insured mortgages have represented 85-90% of total originations. We also show in Figure 3 that between their MBS guarantee books and retained mortgage portfolios, the GSEs account for >50% of the total US mortgage market (note: >65% if Ginnie Mae is included).

There is agreement that the current system overexposes taxpayers to mortgage risk and as a result there has been momentum on housing finance reform, including two proposed GSE reform bills in Congress and the Administration's published Core Principles on GSE Reform.

**Two housing finance reform plans in Congress** – In 2013, the Corker-Warner Bill and the Hensarling/PATH Act were introduced to tackle housing finance reform. The main difference between the two proposals is the role of the government in the market – the Corker-Warner Bill retains a catastrophic government backstop guarantee after private capital absorbs the first 10% of losses and gets wiped out, while the Hensarling/PATH Act completely removes government backstops. We note that the Corker-Warner Bill is widely expected to be the precursor for a final Senate GSE reform bill by Senate Banking panel leaders Tim Johnson and Mike Crapo. We discuss both proposals in detail in the Appendix.

**Administration's Core Principles on GSE Reform** – In August 2013, President Obama released his Core Principles of GSE Reform factsheet. We believe the most important aspect of the President's plan is that he maintains the government's role as the final backstop guarantor of the housing finance system after private capital gets wiped out. Other key elements of the plan include: (1) a common securitization platform; (2) preservation of the 30 yr fixed rate mortgage; and (3) continued government support of FHA/VA lending.

**Figure 3. The GSEs (including Ginnie Mae) control 65% of the US mortgage market between retained mortgages and credit guarantees on MBS**



Source: Citi Research, FHFA 2012 Annual Report to Congress, SIFMA



“Our markets perform so well in large part because credit risk associated with mortgage default is assumed by the GSEs. Investors from around the world allocate trillions of dollars of capital to our market because it only involves interest rate risk.”

Jerome Lienhard, CEO of SunTrust Mortgage, in testimony before the US Senate Committee on Banking, Housing and Urban Affairs on Sept 12, 2013

Figure 4. FHFA has more than doubled g-fees compared to pre-crisis

**FHFA Average Estimated Single-Family Guaranty Fee**

	Upfront	Ongoing	Total
2007	4	17	21
2008	9	14	23
2009	9	13	22
2010	10	14	24
2011	12	15	26
1Q12			29
2Q12			40
3Q12			42
1Q13			54
2Q13			57
3Q13			59

Source: Citi Research, Fannie Mae and Freddie Mac 2010 and 2011 Guarantee Fee Report for 2007-2011 data; Fannie Mae 10-Qs post-2012

Note: split btwn upfront/ongoing g-fees was disclosed in special Congressional reports; updated data are not available

**We see 3 key elements to housing finance reform.** While a lot of work remains to be done, we believe there is a general consensus that the main elements of housing finance reform should include: 1) private capital absorbing credit losses; 2) an explicit catastrophic government guarantee behind private capital taking first-loss (which would keep the 30-yr fixed-rate mortgage product intact – historically the majority of US mortgage originations); and 3) maintaining government FHA/VA programs for first-time homebuyers and low- and moderate-income borrowers.

## Private capital needs to absorb credit losses

### 1) There is plenty of demand for private capital to assume the interest rate risk on agency MBS as long as there is an explicit guarantee on credit risk... –

It is important to note that the GSEs only guaranteed the credit risk, and that there has always been plenty of demand from private capital to absorb the interest rate risk on agency MBS without taking any credit risk. The GSEs charge a guarantee fee (g-fee) to provide credit risk insurance on agency MBS. In other words, the GSEs bear the credit risk of the underlying pool of mortgages in exchange for g-fee payments. The g-fee is not a fixed amount; it has both seller- and loan-specific components. The seller-specific component is collected over the loan's life, while the loan-specific components are charged upfront.

### 2) ...and in the past, the GSEs underpriced g-fees, disregarding the risks they were assuming... –

During the pre-crisis housing boom, the GSEs purchased and securitized increasingly risky mortgages, but only charged g-fees of 20-25 bps which in hindsight were too low to compensate for the credit risk they were assuming. The FHFA, the regulator for Fannie Mae and Freddie Mac, directed the GSEs to increase g-fees in 2Q12 and 4Q12 (by 10 bps on average both times) with the intention of bringing the g-fee closer to the credit risk pricing that would be required by private sector providers. Today, the average g-fee on new mortgage purchases is ~60 bps, which is more than double the rate that was charged pre-crisis (see Figure 4). In Dec 2013, the FHFA once again announced a 10 bps g-fee hike which will become effective in Apr 2014.

### 3) ...but g-fees are closer to private market pricing today, implying there is no significant government subsidy... –

Based on conversations with bank executives and g-fees implied by the recent GSEs risk-sharing deals, we believe that today's g-fee of ~60 bps is in-line with what the private market would demand.

■ **Implied g-fees from GSEs' recent risk-sharing deals suggests that at ~60 bps today, g-fees are in-line with what the private market would demand–** In 2013, Fannie and Freddie both issued mortgage risk-sharing bonds to share credit risk with private investors. Freddie Mac sold \$500 mil of bonds in July and \$630 mil in Nov (called STACRs – Structured Agency Credit Risk), while Fannie Mae conducted its \$675 mil issuance in Oct (called CAS – Connecticut Avenue Securities). The GSEs retained the first 30 bps of credit risk on each transaction, but sold off the next 270 bps. Using pricing data on these transactions, Citi's agency MBS research team estimates that the implied private market g-fee on the deals was ~47-53 bps (see [Nov 22, 2013, "Agency MBS Weekly"](#) pgs 4-6). The caveat is that the deals offloaded only a small sliver of losses. If the credit exposure sold was significantly higher, the return that investors would demand would also be higher. Thus Citi Research estimates that the fair value of the g-fee is somewhere between 50-70 bps.

“These changes will move Fannie Mae and Freddie Mac pricing closer to the level one might expect to see if mortgage credit risk was borne solely by private capital.”

-Edward DeMarco, acting director of the FHFA, after announcing a 10 bps increase in g-fees

“Pricing on all of the [GSE risk-sharing] transactions this year has been attractive, suggesting that each may be scalable to a significant degree.”

-Wanda DeLeo, Deputy Director at the FHFA, in Dec 10, 2013 testimony to US Senate Committee on Banking, Housing and Urban Affairs

■ **Jumbo mortgage rates lower than conforming mortgage rates provides further evidence that g-fee is appropriately priced** – As g-fees have continued to increase since 2012, the jumbo-conforming spread (ie the interest rate differential between jumbo mortgages vs conforming mortgages) has tightened to historical lows (and intermittently turns negative) vs ~25 bps historically. For example, as of Dec 9, 2013, Wells Fargo reported a 4.5% mortgage rate for 30-year jumbo mortgages vs 4.75% for 30-year conforming. Our conversations with industry participants suggest that this phenomenon is due to the fact that higher g-fees have caused conforming loans to be less attractive to originate and sell to the GSEs.

4) **...And we believe there would be sufficient demand from private capital...** – Under the Corker-Warner Bill, the leading GSE reform proposal, private capital would need to take 10% of the first-loss credit risk on govt-backed MBS before the govt steps in. Using simple math, based on 2012 agency MBS issuance of ~\$1.6 bil, this implies that the government would need to sell ~\$160 bil of credit risk into the market, or ~\$13 bil per month. We believe there is ample private market appetite for this given it represents just a fraction of pre-crisis non-agency MBS issuance. We also note that many industry participants view 10% as too high, as the GSEs' cumulative credit losses through the biggest financial crisis since the Great Depression may only have been ~5% at a maximum. Thus the private market may ultimately need to absorb much less than ~\$13 bil.

5) **...but while pricing and demand may be there, it is operationally daunting to establish the infrastructure for reform.** We believe the most significant hurdles to GSE reform are the details on how the infrastructure would work operationally and the structure of how credit risk is shared with private capital.

■ **Infrastructure being built for future mortgage securities issuance is complex and progress has been limited** – The major role played by the GSEs is providing credit enhancement on MBS, but they also perform key securitization functions that are important to MBS issuance. In transitioning toward GSE reform, the FHFA has been developing the Common Securitization Platform (CSP) since Feb 2012 to perform all of the back office securitization functions that the GSEs currently handle, including mortgage data verification, publishing of disclosures, security issuance, and a number of other automated security administration and servicing functions (see Figure 5). The project is technically complex due to its scale and scope and will be a multi-year undertaking with many cycles of incremental development followed by testing and industry feedback. To date, it does not seem like the FHFA has made significant progress on the project, as the FHFA originally declared that by year-end 2012, a CSP development plan would be finalized, but key elements of it were left unfinished and were pushed out to year-end 2013. The only demonstrable progress to date is that the GSEs formed a joint venture in Oct 2013 to work on this initiative (Common Securitization Solutions, LLC). Furthermore, the FHFA continues to search for key executives to lead the initiative. Recent press reports indicate that the CEO candidate list has been narrowed but recruitment efforts are ongoing<sup>1</sup>.

<sup>1</sup> Nov 8, 2013 WSJ article: “Fannie, Freddie Venture Has CEO Shortlist”

Figure 5. The goal is for the Common Securitization Platform to replace the GSE back-office securitization functions, while other aspects of GSEs will be replaced by private capital

Functions remaining with the GSEs to be eventually replaced by private capital	Common Securitization Platform (CSP)
<b>Credit Enhancement</b>	<b>Master Servicing</b>
<b>Primary Servicer</b>	<b>Issuance:</b>
<b>Sourcing:</b>	Security Issuance
Borrower	Initial Disclosure
Originator	Data Validation
Aggregator	<b>Bond Administration:</b>
Collateral Management	Bond Administrator
<b>Capital Markets:</b>	On-going disclosure
Broker/Dealer	Trustee
Investor	

Source: Citi Research, FHFA

■ **Another hurdle is establishing and testing the structure by which the govt offloads the first 10% of credit risk to the private market** – The Corker-Warner proposal leaves it open to interpretation how the first 10% of losses will be shared with private capital, making credit enhancement or bond guarantor options possible. Regardless of the ultimate structure, it is an unprecedented exercise that will require extensive testing, especially considering that it will replace govt agency MBS issuance of over \$1 tril per annum. Our view is that Credit-Linked Notes (similar to the GSEs' recent STACR/CAS deals) will be the predominant structure, supplemented by mortgage insurance.

– **We believe the predominant structure for GSEs to share credit risk is through credit enhancement similar to recent GSE risk-sharing deals...** –

In our view, the predominant structure for the GSEs to share the first 10% of losses with the private market is through credit-enhanced risk-sharing bonds similar to the recent Fannie and Freddie STACR/CAS issuances. The Federal Mortgage Insurance Corporation (FMIC) established under Corker-Warner would continue to insure mortgages sold into the TBA market (discussed below), which will keep that market intact. The FMIC could then sell credit-linked notes (CLNs) for 10% of the risk into the private market. The CLNs will be synthetic securities, linked to, but not directly backed by, the underlying mortgages, and will derive their value from the performance of the underlying mortgages.

• **Recent credit-risk sharing deals to test the market have been successful...** – The two credit-risk sharing deals from Freddie Mac (STACR) and one from Fannie Mae (Connecticut Avenue Securities) have been successful as the deals were over-subscribed and are trading at a ~10-15% premium to par. In Figure 6 below, we show details on Freddie's first risk sharing deal from July. The GSEs retained the 30 bps first-loss piece (represented by Class B-H), sold most of the M-1 and M-2 pieces that absorb the next 270 bps of losses, and retained the senior-most piece (represented by Class A-H).

Figure 6. Freddie Mac tested the first credit-risk sharing deal in July, selling some of the subordinate M-1 and M-2 tranches

Freddie Mac's first STACR deal - maturing July 2023

Class	Notional (\$ mil)	Credit Enhancement	Wtd Avg Life (Yrs)	Spread Over 1 Month LIBOR
A-H	\$21,907	3.00%		
M-1	\$305	1.65%		
M-1 (sold to investors)	250		2.19	340 bps
M-1H (retained by Freddie)	55			
M-2	\$305	0.30%		
M-2 (sold to investors)	250		8.21	715 bps
M-2H (retained by Freddie)	55			
B-H	68	0.00%		
<b>Total</b>	<b>\$22,584</b>			
Amount Sold (M-1, M-2)	\$500			
% of Underlying Sold	2.2%			

Source: Citi Research, Freddie Mac

- ...and we believe there is enough demand for the credit risk that needs to be sold as this solution is scaled up** – Critics of the deal will point to the fact that the GSEs did not sell the riskiest tranche (30 bps first-loss piece represented by Class B-H) and that the bonds only represented ~2% of the overall pool of loans underlying the securities, so this particular structure may not be scalable. However, as discussed above, we believe there is plenty of appetite for the credit risk given it represents just a fraction of pre-crisis non-agency MBS issuance. Furthermore, although the risk-sharing deals sold less than 3% of credit risk to the private market, we believe there is appetite to absorb the 10% first-loss envisioned under Corker-Warner because the probability of the securities ever approaching 10% losses is very low. As mentioned previously, the GSEs' cumulative credit losses through the financial crisis may only have approached ~5% at a maximum.
- The risk-weighting assigned to the security type will be an important factor as to whether banks can invest in them** – Credit-linked note structures are treated as derivatives under Basel 3, which would be a very punitive risk-weighting relative to an agency MBS (20% risk-weight) that banks are used to purchasing. It remains to be seen whether there is an exemption granted for CLNs issued by a government entity, which would enable broader access to the banks in the future. Otherwise, the investor base would be limited to fixed-income investors.
- It was initially a hurdle to get the deals rated, but this will be overcome with more programmatic issuance** – According to conversations with industry participants, it was a challenge for the GSEs to get its inaugural risk-sharing deal rated because it was a new class of synthetic risk transfer securities that is different than the more traditional RMBS configuration that the industry was more familiar with. Freddie Mac's first STACR deal ultimately ended up unrated, which prevented investors such as insurance companies from participating in the deal.

Figure 7. Mortgage insurance industry is dominated by a handful of players

( \$ bil)	GSE Market Share
Radian	21.9%
MGIC	21.1%
United Guaranty	20.4%
Genworth	14.2%
PMI	7.5%
Republic	6.1%
Others	8.8%
<b>Total</b>	<b>100%</b>

Source: Citi Research, Fannie Mae and Freddie Mac 10-Qs

- **...and supplemented by insurance from bond guarantors, but there will be a limit due to concentration/counterparty risk** – Another option would be for the Federal Mortgage Insurance Corp (FMIC) to insure all bondholders, keeping the pass-through structure for MBS in place today, and then purchase reinsurance on 10% of the MBS. For example, FNMA recently purchased reinsurance on a \$5 bil pool of loans in October from NMIC and FRE purchased \$20 bil of reinsurance in November from Arch Capital. However, we believe the GSEs will only pursue a sliver of this option as it would concentrate the credit risk in a limited numbers of counterparties – the top 4 mortgage insurers (Radian, MGIC, United Guaranty, and Genworth) account for ~75-80% of the market (see Figure 7).
- **Senior/subordinate structure to offload 10% first-loss credit risk is unlikely in our view due to funding delays with sub tranches** – The FHFA has floated the idea of offloading 10% first-loss credit risk via a credit-enhanced senior/sub MBS structure (similar to the non-agency MBS market). The TBA market would remain intact if the senior piece was wrapped with a govt guarantee, but funding issues would arise as the subordinate tranches must be sold into the private market. For example, implementing a senior-sub structure under Corker-Warner would require the MBS to be structured as 90% senior/10% subordinate. The senior tranches could be sold into the highly liquid TBA market, but the subordinate tranches would be sold into a less liquid private market where investors would need to conduct due diligence on the credit characteristics of the mortgage pool. Originators would have to wait to receive the proceeds on the sale of the subordinate tranches, reducing the funding available for additional lending and restricting the availability of credit in the mortgage market.

**6) In the meantime, we do not expect a significant return of private capital to the mortgage market under new FHFA Director Mel Watt** – Prior FHFA Director Ed DeMarco was intent on reducing the footprint of the GSEs in the mortgage market (via g-fee hikes and lower conforming loan limits), but conversations with industry experts suggest that new Director Mel Watt is not as focused on downsizing the GSEs and thus will not seek changes to g-fees or loan limits. This is supported by Mr. Watt's announcement that he would delay implementation of DeMarco's latest g-fee hike and LLPA increase<sup>2</sup>, which were surprise announcements days ahead of Watt's confirmation. Thus we believe the mortgage market will stay largely "status quo" until GSE reform is enacted.

<sup>2</sup> In Dec 2013, under direction of prior FHFA Director Ed DeMarco, the FHFA increased upfront loan-level price adjustments (LLPAs), which are upfront charges on mortgages to compensate for the creditworthiness of borrowers.

**“It is critically important that the transition to a more sustainable housing finance system preserves the elements of our housing finance market that work today, including access to a 30-year fixed mortgage product... The transition should also ensure continued access to the “To Be Announced” or “TBA” market...”**

**-Michael Stegman, Counselor to the Treasury Secretary on Housing Finance Policy, in Oct 2013 Politico Panel Discussion**

**Figure 8. Banks can earn a ~12-13% return retaining 5/1 adjustable rate mortgages**

5/1 ARM rate (1)	3.10%
- Borrowing costs (2)	1.50%
- Est. convexity risk (3)	0.10%
<b>NIM</b>	<b>1.50%</b>
Revenue	37.5
LLP	3.1
Credit costs (4)	0.13%
Expenses	15.0
Efficiency ratio (5)	40%
Pretax	19.4
Net Income @ 35% tax rate	12.6
<b>ROE</b>	<b>12.6%</b>
<b>ROA</b>	<b>0.50%</b>

Tier 1 common ratio 8.0%

Source: Citi Research

(1) Est based on WFC, JPM, and BAC's conforming 5/1 ARM rate as of Dec 2013

(2) 5-yr swap rate per Bloomberg

(3) Per Citi agency MBS research

(4) Citi Research est; for example, JPM targets 10 bps of normal credit costs for prime mortgages

(5) Per 2012 MBA/Stratmor survey data

## Explicit government guarantee

In fully-privatized mortgage markets outside of the US, including those in Australia, Spain, and Ireland, the predominant mortgage products tend to be shorter- and medium-term adjustable rate mortgages, which are a good fit for bank funding profiles<sup>3</sup>. In contrast, the US housing finance market is characterized by a 30 year fixed rate mortgage with no prepayment penalty that is not a desired asset for bank balance sheets. If one of the goals of housing finance is to maintain the fixed rate mortgage with no prepayment penalty, then we believe there will need to be an explicit government backstop in order to preserve the execution in this market.

The PATH Act proposed by House Republicans would remove all government backstops on the housing market (outside of affordable housing programs), creating a fully privatized market does not seem to us to be a viable solution. While this would obviously reduce meet policy goals of reducing risk to taxpayers, removing all government support would effectively mean the end of the TBA market because it introduces credit risk into the equation for investors. The end result would likely be higher mortgage rates as originators price-in interest rate risk that they cannot effectively hedge.

### 1) Private market can provide for adjustable-rate mortgages without government support, but they represent less than 20% of the market... –

Banks are already retaining 5/1 mortgages on their balance sheets. However, this only represents a sliver of the market – according to Fed data, ARMs represented ~20-25% of mortgage originations over the last 10-15 years<sup>4</sup>.

### ■ Banks can earn a decent ~12-13% ROE by retaining a 5/1 ARM on balance sheet today –

As we lay out in Figure 8, we believe banks can earn a decent ~12-13% ROE on a 5/1 ARM today. Our assumptions include: today's national average 5/1 ARM rate of 3.1% (average of WFC, JPM, and BAC's 5/1 ARM rates), funding costs of ~1.5% based on 5-yr swaps plus ~10 bps to adjust for convexity risk (per Citi agency MBS research), est annual credit costs of ~12.5 bps, and assumed upfront origination costs (per MBA/Stratmor survey data). Based on these estimates, we calculate an ROE of ~12-13% based on ~25x leverage (ie 50% Basel 3 risk-weighting x assumed 8% B3 Tier 1 common).

### 2) ...and there is limited bank appetite for 30-yr fixed-rate mortgages (~75-80% of total), which necessitates securitization and a govt backstop for liquidity –

The US housing finance system is unique in that 30-yr fixed rate mortgages comprise ~80% of the market. Banks are not interested in these products because they are a poor match for their funding profiles, but they are made viable by the govt's support for the securitization of these products through the GSEs and liquidity via the TBA market. By packaging 30-yr mortgages into MBS, banks can effectively transfer the interest rate risk of the products to investors such as pension funds or life insurance companies that are better suited to match their longer duration liabilities with these longer duration assets and do not want to take credit risk.

### ■ The TBA market plays an essential role in mortgage market liquidity –

The TBA (To-Be-Announced) market is a very liquid market for agency MBS where >90% of agency MBS trading volume occurs. It is a forward market where participants trade contracts to receive or deliver agency MBS in the future. It

<sup>3</sup> See pg 18 in Sept 2010 Research Institute for Housing America report titled “International Comparison of Mortgage Product Offerings”

<sup>4</sup> See pgs 2-3 in Dec 2010 Federal Reserve Bank of NY report titled “Why is the Market Share of Adjustable-Rate Mortgages so Low?”



plays an essential role in improving liquidity for mortgage markets because it allows mortgage originators to sell their mortgages on a forward basis to other market participants. In other words, by entering into a TBA contract as the seller, an originator can lock-in the price it will receive for delivering a pool of MBS backed by mortgages that may not even have been originated yet. This reduces risk because originators are able to lock-in a selling price for new mortgages before they even close the loans. This hedging/risk management benefit is ultimately passed through to borrowers in the form of lower mortgage rates.

- **Govt guarantee is essential to TBA market liquidity because it removes credit risk** – The govt guarantee is essential to the TBA market's liquidity because it removes all credit risk, which leaves investors exposed only to interest rate risk. This broadens the investor base to include, for example, foreign investors that only want exposure to interest rate risk and are not interested in speculating on credit risk.
- **Govt support is also essential to standardization in the TBA market** – Liquidity in the TBA market is aided by the fact that both the traded MBS and the underlying mortgages must meet GSE-specified guidelines in order to be eligible for delivery into a TBA contract, which results in standardization and “fungibility” of the assets traded in the market. This dynamic facilitates liquidity in the market and improves the hedging function for lenders because they are able to see timely and reliable market prices.
- **Fed estimates that TBA market's role as liquidity provider/risk transfer mechanism results in a subsidy of 10-25 bps to mortgage rates** – According to a 2013 Fed paper<sup>5</sup>, the liquidity benefits of a mortgage being deliverable into a TBA contract result in a 10-25 bps “subsidy” to mortgage rates, with even more of a benefit during periods of market stress/disruption. In order to estimate the subsidy effect, the paper looks at the difference in mortgage rates between TBA-eligible mortgages vs mortgages that were not eligible for TBA delivery, but were still eligible to be purchased by the GSEs.

## Affordable housing

An obstacle to reducing government involvement in the mortgage market is the desire of policymakers to make housing affordable for low income borrowers. Affordable housing has been a long-held social policy goal in the United States, and legislators have put in place FHA/VA financing programs and required the GSEs to purchase a minimum amount of low income loans to promote this goal. We do not see how the government can exit the housing market as private capital would be unwilling make loans to low income borrowers due to the challenges of meeting QM requirements. However, the affordable housing market will see some change as the GSEs are reducing their targets for lending to low income borrowers, leaving the FHA (which is overseen by the Department of Housing and Urban Development) and other government programs (such as the VA and USDA) as the support for the low income segment.

**1) The government cannot exit the market for affordable housing because private capital is unwilling to take this risk due to the QM Rule** – Private capital will not fill the void of lending to low income borrowers if the government pulls back from the mortgage market. In order to achieve safe harbor status on their loans under the Qualified Mortgage Rule, lenders will be held to strict underwriting

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<sup>5</sup> May 2013 Federal Reserve Bank of NY report: “TBA Trading and Liquidity in the Agency MBS Market”

standards (see Force 2: Ability-to-Repay/Qualified Mortgage Rule). This will prevent lenders from issuing loans to less creditworthy borrowers with lower incomes, which will have difficulty meeting ability-to-repay and DTI requirements. In order to promote affordable housing goals, the government will have to have programs that provide financing to low income borrowers.

- **FHA/VA/USDA programs have a singular goal of supporting underserved borrowers** – FHA/VA/USDA programs each support underserved borrowers by insuring mortgages made by lenders to homebuyers with low downpayments and below-average credit profiles. Borrowers looking for financing can make a downpayment as little as 3.5% of the mortgage's value (96.5% LTV) and allows up to 90% LTV for borrowers with FICO scores as low as 500 (note: borrowers with a FICO of 580 are eligible for the FHA's low downpayment of 3.5%). The insurance provided by the FHA removes the credit risk for the lender, increasing the lender's willingness to extend credit to borrowers they otherwise would not lend to. The VA also provides financing to low income borrowers, although unlike FHA loans which are 100% guaranteed by the government, the VA only guarantees a percentage of the loan based on the loan size, type of loan (construction, condo, etc.), and the Veteran's entitlement eligibility.

**2) The GSEs are scaling back from serving low income borrowers, which will leave the FHA as the primary affordable housing lender** – The GSEs were originally created to maintain liquidity and stability in the secondary market for mortgages. However, a secondary mission of the GSEs is to support low income borrowers. Since 1992, FNMA and FRE have been required by Congress to purchase a set amount of loans to low income borrowers. The FHFA, as regulator of the GSEs, sets goals each year for how many loans the GSEs must purchase from low income borrowers. In November of 2012, the FHFA lowered the requirements for loans to low income borrowers, citing previously established benchmarks were too high and that an improving housing market should allow low-income borrowers to find affordable financing in the private market. The new rules require the GSEs to purchase at least 23% (vs 27% previously) of their loans to single families earning no more than 80% of the median income in their area, and 7% (vs 8% previously) to single families earning no more than 50% of the area median income. Reducing the GSEs affordable housing targets will leave the FHA as the primary lender to low income borrowers, along with existing VA and USDA programs.

- **Strong growth in Fannie/Freddie MBS from 2000-2007 was helped by the government's affordable housing policies...** – Fannie and Freddie MBS grew 13% and 11%, respectively, during the 2000-2007 cycle. Under legislation enacted by Congress in 1992, 30% of the GSEs' mortgage purchases were required to be "affordable housing" loans (ie subprime and other risky loans) to borrowers that were at or below the median income in their communities. The quota was raised to 40% in 1996, 42% in 1997, 50% in 2000, and 55% in 2007 (the FHFA began to lower the goals in 2009 to 43% and then down to 35% in 2010). The government's push to increase homeownership among low-income borrowers caused the GSEs to purchase and securitize loans with lower underwriting standards leading up to the crisis.

- **Proposals on GSE reform would relieve the GSEs of their mission to support low income borrowers** – The Corker-Warner proposal on GSE reform put forth in the Senate would relieve the GSEs of their policy goal to support low and middle income borrowers. Instead, a Market Access Fund would be created and administered by HUD to focus on low to moderate income borrowers. The Market Access Fund would be financed by a 5-10 basis point fee on loans securitized by the FMIC, the successor to the GSEs, to help maintain access to affordable rental housing, make grants to state housing agencies, and fund borrower counseling programs.

**3) While there have been proposals to reform the FHA, there are no plans to end the FHA** – While there are concerns about the financial stability of the FHA neither the Senate nor the House have called for an end to the FHA. The FHA Solvency Act, which has already passed through the Senate Banking committee, seeks to raise capital and premium requirements to improve the FHA's financial viability. The House PATH Act proposes the FHA be restricted to first time and low to moderate income borrowers, would reduce insurance coverage from 100% of the loan to 50%, and create a double reserve fund to protect taxpayers from losses.

- **A negative FHA capital reserve ratio forced a \$1.7 bil capital injection from the Treasury, leading to calls for reform** - Losses on troubled loans during the crisis reduced the FHA's capital reserve ratio to -1.4%, as reported to Congress by HUD in November 2012, well below the 2% minimum mandated by Congress. This forced Treasury to contribute \$1.7 bil of capital in September 2013 to shore up the FHA's capital position. This has led to calls for reform to improve the FHA's financial stability. A bill was passed by the Senate Banking Committee in July 2013 that would require the FHA to achieve a capital ratio of 3% in ten years and 1.25% in fiscal 2016, hiking premiums if necessary. The bill currently awaits broader consideration in the House and Senate.

## Force 2: Ability-to-Repay/QM Rule

The CFPB finalized the Ability-to-Repay rule on January 10, 2013, which implements sections 1411 and 1412 of the Dodd-Frank Act. It will become effective on January 10, 2014. The rule is an effort to prevent a repeat of the lending conditions that contributed to the financial crisis (ie consumers getting loans that were beyond their means to repay or loans with risky features such as negative amortization or teaser rates).

In simple terms, the rule requires lenders to make a good faith determination that a borrower has the ability to repay a mortgage before granting it. This would be required on all mortgages going forward, but there is an exemption for certain loans that meet the requirements of a Qualified Mortgage (QM). QMs are presumed to meet the ability-to-repay requirement and are granted a certain level of protection from lawsuits.

### Implications of QM

“The problem is the liability at the end if you have to foreclose and go against the people - the downside risk is massive, that we don’t believe there’s going to be a lucrative market that is willing to take that risk to do non-QM loans because of the potential downside risk at foreclosure because of the fees and penalties and charges that get blown back on the lender.”

-Mike McQuiggan, CEO of Tri-Emerald Financial Group, on Citi’s Housing Finance Outlook & QM Update Call on Jan 15, 2013

**There are three basic requirements to qualify for QM** – The three requirements to qualify for QM treatment are: 1) the borrowers’ debt-to-income (DTI) ratio cannot exceed 43%; 2) the loan must not have risky features such as negative amortization, interest-only payments, balloon payments, terms exceeding 30 years, or be a no-doc loan with unverified income or assets; and 3) points and fees cannot exceed 3% of the loan value. We note that there are no LTV caps on QM, which was something that the mortgage insurance industry had clamored for.

- **There is a 7 year exemption for GSE loans...** – Loans with DTI ratios >43% are temporarily considered QMs if they are eligible to be purchased by the GSEs or other government agencies and do not have risky features (as specified in QM requirement #2 above). This temporary provision is valid for seven years through 2021, or until the govt agencies issue their own QM rules or if the GSEs’ conservatorship ends, whichever comes first.
- **...And FHA loans are permanently exempt** – In Dec 2013, HUD finalized its own QM definition, which makes FHA loans permanently exempt from the Ability-to-Repay rule. Details of HUD’s QM definition are in the Appendix.

**1) With the exception of lending to high net worth borrowers, banks will stick to QM** – We believe that the most important aspect of the Ability-to-Repay rule is the QM safe harbor provision, which grants lenders legal protection from ability-to-repay litigation if the mortgage fits the criteria outlined above. Other than for high net worth borrowers, lenders are unlikely to risk originating loans outside of QM because the potential downside from a lawsuit makes the risk/reward unfavorable. Lenders will continue to do non-QM loans for high net worth clients due to relationships and low credit risk. It is also more difficult for high net worth clients to sue on the basis of an ability-to-repay violation given their financial profiles.

“Ocwen has no plans for entering the non-qualified mortgage lending market... [W]e believe the potential penalties for originating non-QM loans are substantial, and we are not willing to accept such risk on our balance sheet.”

-Ocwen, quoted in Dec 10, 2013 IMFnews excerpt

■ **Risk/reward for non-QM loans is unfavorable due to potential litigation costs of ~\$65-140k vs ~\$2k in origination profit** – Within the Ability-to-Repay rule, the CFPB estimates that the litigation costs and penalties for a \$210k non-QM loan may range from ~\$65-140k – consisting of ~\$35-90k in legal fees and ~\$30-50k in penalties<sup>6</sup>. This compares with a net origination profit of only ~\$2k per mortgage today (according to the Mortgage Bankers Association), which clearly makes the risk/reward of doing non-QM loans unfavorable.

■

<sup>6</sup> Pgs 583-589 of CFPB’s finalized Ability-to-Repay rule

- **QM safe harbor provides strong protection from litigation risk...** – For mortgages that meet the QM requirements, the Ability-to-Repay rule provides a “conclusive presumption” that the lender has satisfied their obligation to assess the borrower’s ability-to-repay, which grants the lender a strong defense against litigation and likely discourages lawsuits in the first place.
- **...but it is not a guarantee due to subjectivity in calculating the DTI ratio** – One of the QM criteria is that the borrower’s monthly debt-to-income ratio cannot exceed 43%. The calculation of this ratio is governed by Appendix Q, which will likely be a fertile ground for legal challenges due to its subjectivity and lack of firm quantitative guidelines. Our conversations with industry experts suggest that some of the most subjective aspects of Appendix Q include: 1) how to determine whether a borrower’s income is “stable” and 2) how to establish an earnings trend for borrowers with non-standard incomes, e.g. commissions, overtime, bonuses, part-time non-primary jobs, etc.
- **We believe lenders have established underwriting overlays to protect their QM safe harbors** – We believe that one of the reasons for tight mortgage underwriting standards today is that lenders have established stringent requirements to ensure that their QM safe harbors are protected in the event of a legal challenge. Lenders have been extremely scrutinizing on income documentation and the calculation of the DTI ratio to ensure that there is limited room for subjective interpretation.
- **CFPB Director has sought to assuage lender fears of QM litigation** – Speaking at the MBA’s Annual Convention in Oct 2013, CFPB Director Richard Cordray attempted to debunk industry fears that QM would usher in a new wave of litigation. Mr. Cordray’s main point of disagreement with legal pundits is that he believes the 43% DTI cap is fairly straightforward to calculate and to defend in court. It remains to be seen whether this holds true.

“... [W]e left little room for legal challenges to whether a given mortgage is a QM. We purposely drew bright lines to define the contours of a Qualified Mortgage... If those lines were not drawn as sharply as they are, then much would have remained to be fought out in the courts for years and years before the definitions were clear. We crafted the rule to avoid that result, which is why critics are now forced to dream up hypothetical factual disputes about whether debts and income were correctly calculated in their efforts to criticize the rules or sow anxiety about them.”

-Richard Cordray, CFPB Director in prepared remarks at the MBA’s Annual Convention on Oct 28, 2013

- 2) **We expect QM to have a limited effect on the market near-term because >95% of today’s mortgages already qualify for QM** – We do not expect QM to have a significant impact on originations because Citi’s MBS research team estimates that over 95% of post-crisis mortgage originations fall under QM criteria (see Jan 11, 2013, “Mortgage Credit Weekly” pgs 2-4).
- **Other estimates of the QM-eligible market are ≥95%** – According to the CFPB, over 95% of the current market is eligible for QM treatment<sup>7</sup>. Wells Fargo, the largest mortgage originator with ~23% market share, stated at a recent Citi conference that 98% of its current mortgage originations are QM-eligible.
- **Longer term, mortgage market will likely be smaller when the GSE exemption expires, as only ~75-80% of originations will be QM-eligible** – Within the Ability-to-Repay rule, the CFPB estimates based on 2011 data that 78% of mortgages would have qualified as QMs (76% were eligible for QM safe harbors; 2% were eligible for QMs with rebuttable presumptions)<sup>8</sup>. The CFPB also estimates based on 2011 data that 18% of mortgages had DTIs above 43%, but were eligible to be purchased/guaranteed by the GSEs/govt agencies<sup>9</sup>. According to an Inside Mortgage Trends analysis, 13.5% of loans securitized by the GSEs in 4Q12 had DTIs above 43%<sup>10</sup>. Due to lack of data, however, the

<sup>7</sup> Pg 593 of CFPB’s finalized Ability-to-Repay rule

<sup>8</sup> Pgs 577-578 of CFPB’s finalized Ability-to-Repay rule; based on 2011 data

<sup>9</sup> Pg 593 of CFPB’s finalized Ability-to-Repay rule; based on 2011 data

<sup>10</sup> Pg 20 of Inside Mortgage Finance’s “Guide to the Ability-to-Repay Rule and Qualified Mortgages”

CFPB notes that these estimates do not exclude loans that would have fallen out of QM due to the points and fees requirements. We also note that mortgage industry experts we have spoken to estimate that 80-85% of mortgages being done are QM-eligible even absent the GSE exemption.

- **CFPB estimates that 70% of mortgages originated in 1997-2003 would have been QM-eligible** – The CFPB estimates the following within the Ability-to-Repay rule: 1) 70% of mortgage originated in 1997-2003 would have qualified as QMs absent temporary GSE/govt agency exemptions; 2) of the 30% of QM-ineligible loans, 22% fail one of the QM underwriting criteria; and 3) 8% are either insufficiently documented or were adjustable rate mortgages with teaser rates that are disallowed under the final Ability-to-Repay rule<sup>11</sup>.

**3) 3% cap on points and fees will cause broker channel to rethink ancillary/affiliated services** – QM's 3% cap on pts and fees includes compensation paid to brokers (we use 100 bps of the loan amount for illustrative purposes<sup>12</sup>), but does not count compensation paid to loan officers in a retail channel origination. We show in Figure 9 that after accounting for the most common mortgage closing fees on a \$200k loan, a broker channel origination only has ~\$1,200 of "room" left under the 3% cap to charge for other mortgage closing services (such as title insurance) that may be provided by the broker or by an affiliate. Our conversations with industry participants suggest that brokers may have to exit these businesses/relationships or charge for the services in other ways, e.g. baking it into higher mortgage rates, which puts the channel at a disadvantage.

Figure 9. Treatment of compensation significantly disadvantages the broker channel

	Retail Origination	Broker Origination
<b>3% cap on \$200k loan</b>	<b>\$6,000</b>	<b>\$6,000</b>
Application fee	\$365	\$365
Lender origination fees	\$1,730	\$1,730
Appraisal and credit report fees	\$672	\$672
Mortgage broker comp @ 1.0%		\$2,000
<b>Est. total points &amp; fees</b>	<b>\$2,767</b>	<b>\$4,767</b>
<b>3% cap vs est. total points &amp; fees</b>	<b>\$3,233</b>	<b>\$1,233</b>

Source: Citi Research, Federal Reserve, Bankrate

**4) The QM Rule discourages lending to low income borrowers through ability-to-repay and DTI requirements** – We believe the QM Rule discourages lending to low income borrowers, as it will be more difficult to prove a borrower's ability-to-repay, as well as meet the maximum 43% debt-to-income requirement, on loans to low income borrowers.

- **QM rule will make it difficult for banks to meet CRA and Fair lending requirements** – Banks need to meet two lending requirements - The Community Reinvestment Act (CRA) and Fair Lending. The CRA encourages banks to

<sup>11</sup> Pg 577 of CFPB's finalized Ability-to-Repay rule

<sup>12</sup> Our research indicates that mortgage broker compensation may range from 50 bps to upwards of 200 bps depending on the services that the broker provides and how the broker gets paid. Brokers may be paid by the borrower in the form of upfront "points" on the loan amount or by the lender through the yield-spread premium, which is passed-through to the borrower in the form of a higher mortgage rate.



originate mortgages to low- and moderate-income borrowers which are likely to fall outside of the QM box. The Fair Lending/disparate impact doctrine stipulates that seemingly neutral lending practices may be considered discriminatory and illegal if it has an adverse impact on a minority group. As the QM rule makes it tougher to lend to low income borrowers, it will likely make it more difficult for banks to meet both of these requirements, and has created some concern among the banks at a time of heightened scrutiny. The CFPB announced in April 2012 that it would use all available legal avenues – including the disparate impact doctrine – to sue lenders that discriminate against certain groups of borrowers.

- **Non-bank specialty lenders will be a source for CRA loans.** – While FHA mortgages will serve most of the low-income non-QM segment, it cannot be the sole solution for banks' Community Reinvestment Act (CRA) requirements due to the FHA compare ratio constraint. Thus there is an opportunity for non-bank specialty niche lenders to provide the CRA loans which cannot be sourced through FHA, though our conversations with market participants suggest that this opportunity will be relatively small. It is difficult to size this space given the lack of clarity around what CRA lending requirements are, as they differ by region and a bank's CRA activities are measured relative to peers in its geographic area.
- **Banks are subject to a 150% FHA compare ratio cap** – The compare ratio measures the percentage of a bank's default rate on FHA loans vs the local market's default rate. For example, if a bank has a 10% default rate on FHA loans in New York vs 5% for all loans in New York, the lender's compare ratio would be 200%. Banks with compare ratios in excess of 150% are not eligible for FHA approval. Due to the low credit quality of CRA borrowers, banks will likely exceed the 150% compare ratio cap if these loans are sourced via FHA, which would cause banks to lose their FHA approvals.
- **A bank can meet its CRA requirements but still be susceptible to a Fair Lending violation** – A bank could lend to a certain amount of low- and moderate-income borrowers, but still violate fair lending if their lending activity statistically discriminates against certain racial groups. For example, one industry participant provided the example that some Asian banks that serve Asian-American communities can meet their CRA requirements, but may fail Fair Lending requirements since they lend to only Asian borrowers.
- **Regulators have stated that Ability-to-Repay/QM should not interfere with affordable housing policies, but we believe it is wishful thinking** – In Oct 2013, five regulatory agencies issued a joint press release to assert that the Ability-to-Repay/QM rule will not result in disparate impact claims. The regulators did not go so far as to provide a fair lending safe harbor, however, and also admitted that "implementation of the Ability-to-Repay Rule...and other changes in economic and mortgage market conditions have real world impacts and that creditors may have a legitimate business need to fine-tune their product offerings over the next few years in response." Thus we believe it is wishful thinking that regulators believe banks' fair lending concerns are alleviated by such a statement.

## Force 3: Higher Capital

Final Basel 3 rules, the QRM Rule, LCR and the proposed Supplementary Leverage Ratio (SLR) are forcing banks to re-think their mortgage banking businesses, and in some cases aiding the growth of non-bank competitors. In other cases, higher capital requirements on banks could have indirect consequences on agency mortgage REITs. Below we walk through the changes to capital requirements from these three rules, the impacts to date, and potential impacts going forward.

**1) New rules will have a neutral to marginally negative impact on bank capital requirements to hold mortgages** – Mortgage loans will have the same risk-weights under Basel 3 as under Basel 1. However, the SLR may raise capital requirements slightly.

■ **The concern had been that Basel 3 would raise the capital requirement for loans, but the risk-weighting did not change under the final rules** – Under the US Basel 3 NPR released in June of 2012, regulators had proposed basing risk-weightings for mortgage and HELOC loans off of loan-to-value at origination and underwriting and product features. However, industry concerns that the new risk-weightings could restrict lending to some creditworthy borrowers led regulators to revert to the risk-weightings under the Basel 1 rules:

- **First lien loans not 90+ days past due receive a 50% risk weight**
- **All other residential mortgage exposures receive a 100% risk-weighting** – All other residential mortgage exposures, including non-performing loans and junior lien one-to-four family loans receive a 100% risk weight.

■ **SLR may force banks to hold slightly more capital** - The SLR was proposed in July 2013 and the ratio is calculated by dividing Basel 3 Tier 1 capital by total assets (with certain adjustments). The SLR disregards the riskiness of assets and risk-weights all assets at 100%. The capital requirement previously was 4% (8% Tier 1 Common and a 50% risk-weight). The SLR will require banks to hold 5% capital at the holding company level against mortgages (6% at the subsidiary level). However, we note that the SLR is based on Tier 1 Capital, which includes Preferred Equity lessening the impact from the higher asset weighting.

**2) MBS are subject to punitive treatment under proposed LCR rule**– Under the proposed Liquidity Coverage Ratio rule, agency MBS are subject to 15% haircuts while non-agency MBS are not includable in the ratio at all. Risk-weightings of MBS have changed from an approach based on ratings under Basel 1 to an approach that looks at underlying collateral quality under Basel 3, leaving the effect unclear.

■ **Proposed LCR rule subjects Fannie/Freddie MBS to punitive 15% haircut and 40% cap** – In Oct 2013, the Basel Committee proposed the Liquidity Coverage Ratio (LCR) rule, which will require banks to hold enough “high quality liquid assets” (HQLAs) to ensure that it has enough liquidity to withstand a 30-day stressed event. The proposal requires banks to maintain a minimum LCR of 100%. Fannie/Freddie MBS are classified as Level 2A assets that are includable in HQLAs but are subject to a 15% haircut. In addition, Level 2A and 2B assets in aggregate cannot comprise more than 40% of a bank's total HQLAs. The proposed LCR also does not allow non-agency MBS to be includable as HQLAs

■ **Risk-weightings on MBS portfolios will be largely unaffected by Basel 3 rules** – Risk-weightings on agency MBS (which on average constitute ~88% of MBS holdings for banks in our coverage based on Y-9C data) are not treated as securitizations and are still weighted at 20% under Basel 3, the same as under Basel 1. In addition, investment grade non-agency MBS are expected to be largely unaffected by the move from a ratings based approach under Basel 1 to a formula-based approach that looks at the risk-weight as a function of the delinquencies, seniority position in the structure, and cash credit enhancements.

- **However, sub-investment grade non-agency MBS will see a marginal positive benefit under Basel 3** – Under a ratings-based approach a security would have received a significantly higher risk weight for each one notch downgrade (i.e. 100% risk-weighting for a BBB security would have become 200% when it moved to BB). Now a bank does not need to worry about the downgrade, instead just seeing a small increase in risk-weights as quality of underlying risk-weights deteriorates. According to industry experts we have spoken with, this change may actually lower the risk-weights on sub-investment grade non-agency MBS currently held in some portfolios.

**3) Capital requirements are higher for servicing rights, which will likely lead banks to scale back on the margin**– While there was no impact for mortgages held on balance sheet, the final Basel 3 rules did significantly increase the risk-weighting of mortgage servicing rights (MSRs) for the banks, and also limited the amount of MSRs includable in Tier 1 Common Equity.

- **MSRs now have a 250% risk-weighting under Basel 3 rules vs 100% under Basel 1...** – Under the final Basel 3 rules, MSRs receive a 250% weighting in the calculation of risk-weighted assets. Under Basel 1, the risk weight was 100%. Assuming a minimum Tier 1 common ratio of 8%, the change in risk-weights means that banks have to hold 20% capital against MSRs vs 8% under Basel 1.
- **...And MSRs can only make up 10% of Tier 1 Common ...** – New Basel 3 rules limit MSRs that are includable in Tier 1 Common. Mortgage servicing rights cannot make up more than 10% of Tier 1 Common and MSRs, deferred tax assets, and financial institutions cannot make up more than 15% of Tier 1 Common combined. While most banks would not face MSR deductions from Tier 1 Common currently, it could limit growth of MSR portfolios going forward.
- **Banks could relieve pressure on capital by selling MSRs without downsizing the servicing business, as Flagstar recently did** – In December 2013, Flagstar Bancorp sold \$40.7 bil of MSRs to Two Harbors Investment Corp. The deal will move the MSRs off Flagstar's balance sheet, freeing up capital. However, Flagstar will retain the sub-servicing contract, which means they will receive a fee for continuing to service the loan, without having the risk from changes in interest rate/pre-payment environments. Keeping the servicing also positions them well for any future refinancing activity that may come from servicing customers refinancing existing loans. Two Harbors, which invests, finances, and manages mortgage-backed securities, can use the MSRs as a hedge against agency MBS within their investment portfolio without having to perform the servicing on the loan.

**4) We do not expect the Risk Retention/QRM rule to significantly impact the mortgage origination market...** – In August, six agencies issued a joint re-proposal of the Risk Retention/Qualified Residential Mortgage (QRM) Rule, which requires a securitizer to retain a 5% interest in RMBS securitizations. There is an exemption from this requirement if the underlying collateral is entirely comprised of QRMs. As a result of this rule, securitizers will either: 1) be forced to hold the 5% securitization interest on balance sheet, pressuring their capital positions, or 2) avoid securitizing non-QRM loans to avoid the requirement. However, we don't expect this rule to have a significant impact on the industry as the definition of QRM was aligned with QM, which will allow banks to securitize all of mortgage they are willing to make under QM.

- **...As the broader definition of QRM vs the original proposal lessens the impact of the rule** – Originally, a QRM was much more narrowly defined,

requiring a DTI cap of 28% on mortgage debt (front-end DTI) and 36% on all debt (back-end DTI) vs just a 43% back-end DTI under QM. QRM also had loan-to-value requirements of 80% for purchases, 75% for refinances, and 70% for cash out refinances vs no LTV requirements under the QM rule. This led to concerns that the tighter definition could reduce the availability of mortgage credit because lenders would be unwilling to make loans they could not securitize. Aligning the definition of a QRM with a QM will allow securitizers to securitize all the mortgages they are willing to make under the Ability-to-Repay rule. .

**5) The proposed Supplementary Leverage Ratio (SLR) will also raise the cost of financing for agency mortgage REITs** – The SLR will lead banks to re-think how they allocate balance sheet, switching focus from maximizing ROE to ROA. Banks are likely to shrink their secured financing/repo books which have low ROAs and are mainly used to drive trading and underwriting fees. An affected party from a pullback in repo supply could be mortgage REITs, which may not be able to drive enough trading and underwriting revenue to incentivize dealers to extend financing.

■ **However, we don't expect SLR to have a large impact on the mortgage market as mortgage REITs only account for 5% of the market** – The concern is that lower agency MBS demand, as higher financing costs limit the growth of mortgage REITs, could result in higher mortgage rates for borrowers and lower origination volumes. However, reduced mortgage REIT demand is unlikely to have a meaningful impact on mortgage rates. Even when a very large buyer (the Fed) exited the market after QE1 ended, mortgage rates only increased a maximum of ~30-40 bps. While Mortgage REITs have increased their MBS holdings from \$160 bil at the end of 2009 to \$460 bil at the end of March 2013, REITs only account for ~5% of total agency MBS holdings vs ~15% for the Fed.

## Force 4: Transition from Refi to Purchase Market

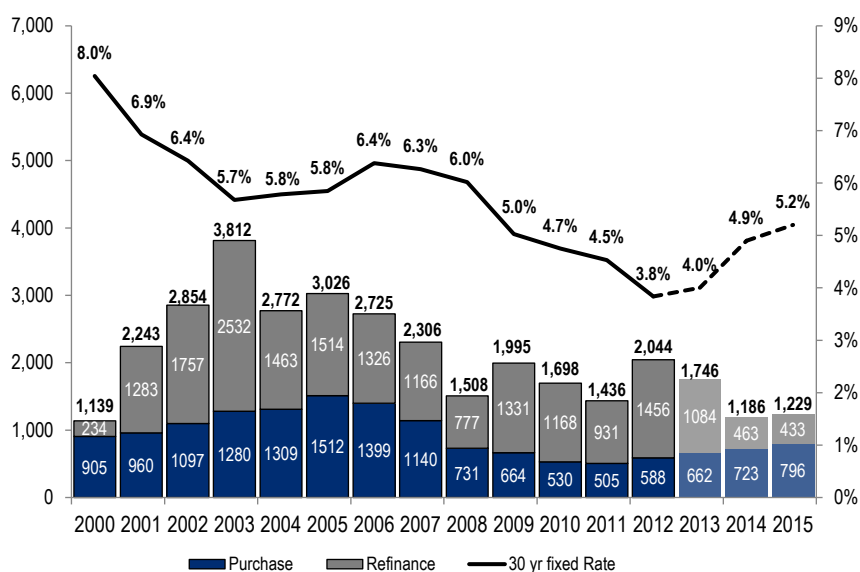
Figure 10. Refi volumes have been elevated at >65% of total post-crisis

	Refis as % of Total
2004	52%
2005	50%
2006	49%
2007	52%
2008	51%
2009	69%
2010	67%
2011	65%
2012	72%
1H13	72%

Source: Citi Research, Inside Mortgage Finance

The prolonged period of low interest rates post-crisis resulted in a refi boom as refinancing volumes dominated mortgage originations over the last several years. As we show in Figure 10, refis have accounted for >65% of total mortgage originations since 2009. The government's Home Affordable Refinancing Program (HARP) also provided an extra boost to refis. Higher rates, however, spell the end of the boom as borrowers have less incentive to refinance their mortgages when mortgage rates rise. The Mortgage Bankers Association forecasts for total volumes to fall over 30% y/y in 2014 as growth in purchase volumes will not be enough to offset the drop-off in refis (see Figure 11).

Figure 11. Origination volume is expected to decline over 30% in '14 as growth in purchase is not enough to offset drop-off in refi



Source: Citi Research, Mortgage Bankers Association

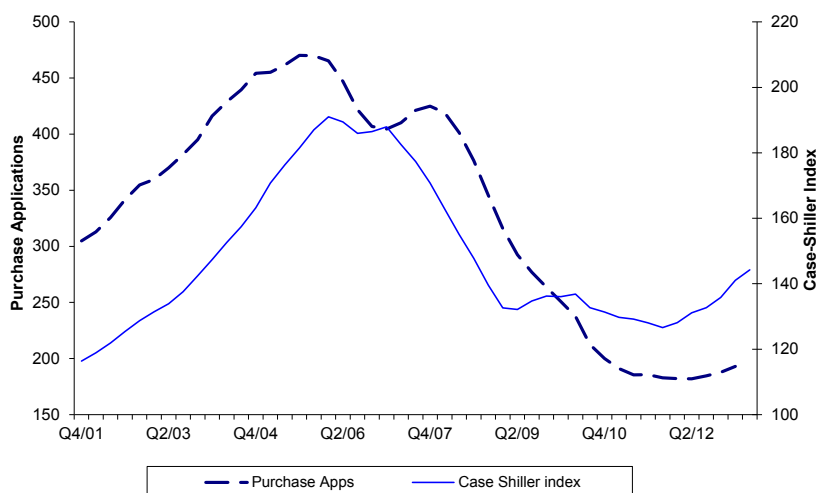
## Wind-down of the Refi Boom

The refi wave over the last two years is receding as mortgage rates, the primary driver of refi activity, continue to tick up. Today's national average 30 yr fixed mortgage rate of ~4.5% is up ~75-100 bps vs the rates in late 2012/early 2013, which has caused the pool of loans with an incentive to refinance to shrink.

- **MBA forecast expects overall industry originations declining >30% in 2014 driven by refis** – Refis have accounted for 65-70% of post-crisis originations supported by record low interest rates.
- **Only 35% of prime loans were eligible to be refinanced when mortgage rates were ~4.3% vs 90% in the beginning of 2013** – Citi's MBS research team estimates based on CoreLogic and Freddie Mac data that 35% of prime loans were eligible to be refinanced in mid-July vs 90% at the beginning of 2013 (See [Jul 18, 2013, "Mortgage Credit Weekly"](#) pgs 4-5).
- **JP Morgan estimates that higher mortgage rates have cut the refi opportunity by >50%** – At a recent investor conference, JP Morgan presented a similar analysis and highlighted that the move in mortgage rates from 3.5% to 4.5-5% has cut the refi opportunity by >50%.

- **Purchase volumes provide a partial offset** – The Mortgage Bankers Association's forecast calls for purchase volumes to increase 13% in 2013 and 9% in 2014. We show in Figure 12 that purchase volumes track changes in home prices. With economists forecasting mid-single digit increases in home prices over the next several years, purchase volumes are likely to grow.

Figure 12. Purchase volumes closely track changes in home prices



Purchase volumes based on rolling four quarter average to remove seasonality.

Source: Citi Research, Mortgage Bankers Association, Case-Shiller Index

“According to numerous reports, the [HARP 2.0] program is failing to serve homeowners who are severely underwater, the very constituency it was designed to support... It is clear to us that HARP 2.0 is not serving the homeowners it was designed to serve. It is also clear that the homeowners who the program does manage to serve are not being served well or even fairly.”

-May 25, 2012 Letter from 50 House Democrats to Treasury Secretary Tim Geithner and FHFA Acting Director Edward DeMarco

- **HARP has been extended, but we don't expect it to boost refi volumes** – Although the FHFA extended HARP for two years through year-end 2015, the program has largely fallen short of expectations since inception and as rates rise, there is even less incentive for borrowers to participate. According to Citi's MBS research team, the pool of HARP-eligible loan balances has declined by ~25-30% since the beginning of 2013 (See [Dec 6, 2013, "Agency MBS Outlook"](#) pgs 36-37).
- **Rep. Mel Watt's appointment as FHFA Director raises the possibility that HARP will be expanded, but it is unlikely to have a material effect** – Rep. Mel Watt was appointed FHFA Director in Dec 2013 and it is widely expected that he will expand the HARP program, likely by extending the cutoff date. According to Citi's MBS research team, extending the cutoff date by 12 months would only increase the universe of HARP eligible loans by ~12% at today's mortgage rates (see [Dec 6, 2013, "Agency MBS Outlook"](#) pgs 36-37).
- **Brief background on HARP** – HARP is a federal program setup by the FHFA that started in Mar 2009 and will expire in Dec 2015, which allows borrowers to refinance their mortgages even though the credit quality of these borrowers is lower than what conforming lenders typically require. In order to qualify for a HARP refinancing, the mortgage must have an LTV >80% and the loan must have been originated prior to May 31, 2009.



Figure 13. Large refi share doesn't always translate to purchase share

	Refi		Purchase	
	Mtges (\$ bil)	Market Share	Mtges (\$ bil)	Market Share
Wells Fargo	138	19%	86	30%
JPMorgan	77	11%	30	11%
Quicken	47	7%	2	1%
BofA	43	6%	6	2%
Citi	33	5%	6	2%
US Bank	27	4%	14	5%
PHH	20	3%	8	3%
Flagstar	19	3%	4	1%
SunTrust	13	2%	5	2%
Fifth Third	12	2%	3	1%
<b>Top 10</b>	<b>429</b>	<b>60%</b>	<b>164</b>	<b>58%</b>
<b>Grand Total</b>	<b>713</b>		<b>282</b>	

Source: Citi Research, Inside Mortgage Finance as of 1H13

Figure 14. Channel mix for the top 10 mortgage lenders

	Retail (%)	Wholesale (%)
Wells Fargo	56%	44%
JPMorgan	52%	48%
Quicken	100%	0%
BofA	100%	0%
Citi	84%	16%
US Bank	29%	71%
PHH	89%	11%
Flagstar	5%	95%
SunTrust	54%	46%
Fifth Third	53%	47%

Source: Citi Research, Inside Mortgage Finance as of 1H13

## Implications of transition to purchase market

The business models that thrive in a refi-heavy market are very different from ones that can succeed in a purchase-oriented market.

■ **Relationships and efficient processes/systems are important in a purchase-oriented mortgage market** – We believe that the drivers of success in a purchase-oriented mortgage market are: 1) access to borrowers and 2) efficient processes and technology which enable faster time-to-closing on the mortgage.

- **Having access to borrowers will be key...** – Purchasing a home is a high-touch transaction because it is a complicated process and a major financial decision in someone's life. Real estate agents are often the first point-of-contact in the for-purchase mortgage market and homebuyers usually lean on them for guidance through the entire purchasing process – including choosing which mortgage lender to choose. In contrast, the refi process is a relatively low-touch transaction which only requires a completed application and updated financial documentation. This has enabled some originators to succeed over the last few years during the refi boom with a low touch model.
- **...which is achieved with a strong local network ...** – In order to gain share in a for-purchase market, lenders need to have relationships with real estate agents. Our findings indicate that ~45% of realtors successfully control or influence the homebuyer's choice of mortgage provider. Also, 70-75% of real estate agents have a partnership with often just one mortgage provider<sup>13</sup>.
- **Realtor relationships can come in one of two forms** – Lenders can establish and maintain relationships with realtors through a formal strategic alliance whereby the lender becomes a preferred mortgage partner to a realtor group (e.g. PHH's J/V with Realty). Another method is to have a large branch network with well-trained mortgage loan officers that are actively engaging real estate agents in the community.
- **...or with exposure to the correspondent channel** – Mortgage servicers are well positioned to refinance their customers' mortgages, but the wholesale channel typically do not have servicing portfolios and thus for-purchase mortgages are larger part of their business. Inside Mortgage Finance reported in 2Q13 that correspondents had a significantly higher mix of purchase loans (~35%) than retail originators (19%).
- **Automation and technology could be a competitive advantage going forward** – Homebuyers are eager to complete the process as soon as possible so that they can move in, which means that a quick time-to-close is an important factor in maintaining customer satisfaction. Furthermore, real estate agents value short cycle times because it enables them to earn their commissions more quickly. There is less emphasis on time-to-close in a refi transaction because the borrower already owns the home and is simply trying to save money. Incorporating increased compliance requirements into antiquated systems can be complex and costly. Those banks with better technology that can more easily update their systems for these requirements can cut down on closing times and improve productivity. PNC recently noted that closing times on mortgage loans through their new seamless delivery system have fallen to 40 days vs 47 days under applications still going through the old system and 53 days for the industry average.

<sup>13</sup> Based on survey results from RISMedia and Campbell Communications

## Force 5: Higher Compliance Costs

Costs to originate and service mortgages have been rising for the banks and other players in the industry due to the increased cost of compliance as a result of regulations enacted under Dodd-Frank. While economies of scale remain important in servicing, they are less important in origination, where cost structures are highly variable for both fully integrated players, as well as smaller banks, who have options to either reduce cost structures through centralization or increase variability through outsourcing. As a result, although there has been some concern that higher costs to originate could force smaller players without significant volume to exit the market, we believe this is unlikely to happen. The need for specialized skill sets in personnel, regulatory approvals, among other factors make economies of scale important to servicers. Bank servicers are attempting to combat higher costs by selling MSRs on delinquent loans and MSRs to service non-core customers to non-bank servicers in order to optimize profitability.

**1) Costs of both originating and servicing loans have increased due to higher compliance requirements** – The CFPB's Supervision and Examination Manual is over 1,000 pages long and serves as the "checklist" that firms must abide by in order to demonstrate compliance with Dodd-Frank. In addition, in Jan 2013, the CFPB issued a number of rules affecting the industry, including: mortgage origination standards (Ability-to-Repay), loan officer compensation, loan servicing standards, appraisal disclosure and delivery standards, appraisal requirements for subprime mortgages, escrow requirements, and high-cost mortgage originations. The increased compliance requirements have created extra steps in the origination and servicing processes, decreasing productivity and raising costs.

■ **Costs to originate loans have gone up 24%, or 7% annually, for the industry since the passage of Dodd-Frank due to higher compliance costs** – The Dodd-Frank Act has raised compliance requirements for lenders, requiring increased documentation of borrower income and additional steps in the underwriting process. From 2Q10 (when Dodd-Frank was passed) to 2Q13, the cost to originate a loan has increased 24% based on MBA/Stratmor data for small and mid-sized lenders. Some examples of higher costs include:

"Everything has moved to a much more rigorous underwriting environment, and every data point in every application is verified, checked and documentation is gone over multiple times."

-Mike Fratantoni, Mortgage Bankers Association's Vice President of Single Family Research and Policy Development, quoted in Aug 12, 2013 US News article

- **Reduced underwriter productivity is illustrative of greater due diligence in mortgage origination process** – According to the MBA/Stratmor Peer Group Survey, underwriters for both large and small lenders processed only ~60 mortgage applications per month in 2011 versus ~190 in 2002<sup>14</sup>. This decrease in productivity demonstrates the extra steps that lenders have been taking to ensure that their loans are free of defects, which is a qualitative measure of tighter mortgage lending standards.
- **The appraisal process requires extra steps that have resulted in increased costs** – Prior to Dodd Frank, mortgage lenders had relationships with select appraisers which resulted in shorter waiting periods and discounts on pricing for higher volumes of business. Lenders now must have appraisers randomly selected for them by an independent third party. This has resulted in higher costs as the discounts have gone away, and increased waiting periods due to the extra step in the process, reducing productivity.
- **Increased disclosure has resulted in closing delays and increased the time spent on a single loan** – New rules enacted under Dodd-Frank require that all fees on the loan must be disclosed at the application stage and cannot be changed at the time of settlement. If certain fees, for example, attorney's

<sup>14</sup> Slide 7 from Apr 2013 Jay Brinkmann presentation titled "Mortgage Lending in 2014 and Beyond: What Are the Drivers?"

fees, are changed after the initial disclosure a new loan package may need to be sent to the client, or if fees cannot be determined with certainty, it may hold up the processing and closing of the loan. All of this results in reduced productivity and higher costs for lenders.

Figure 15. Cost to originate per loan has increased 24% from 2Q10 to 2Q13

	(On a Per-Loan Basis)		
	Personnel Expenses	Other Origination Expenses*	Total Origination Expenses
2Q 2010	3,017	1,660	4,677
2Q 2011	3,561	2,083	5,644
2Q 2012	3,246	1,882	5,128
2Q 2013	3,808	2,010	5,818
% change 2Q10-2Q13	26%	21%	24%
CAGR: 2Q10-2Q13	7%	6%	7%

\*Includes occupancy and equipment, professional fees, and other production expenses and corporate allocations

Source: Citi Research, Mortgage Bankers Association Performance Reports

■ **Servicing costs per loan have increased 78% from 2010 to 2012 due to higher servicing standards under the consent order** –As a result of these rules, the cost of servicing a loan for the industry has increased 78% from 2010 to 2012, based on MBA/Stratmor data. This only includes direct servicing expenses (compensation & equipment) and does not include servicing foreclosed loans and real estate owned servicing. For example, servicers have added additional staff to respond to written customer inquiries within tighter deadlines. Servicers now must acknowledge they have received a written request from a customer within 5 days (vs 20 previously) and provide a written response within 30 days (vs 60 previously).

– **The proposed QRM could also raise servicing costs by holding servicers to higher standards** – The Qualified Residential Mortgage rule will also require servicers to meet higher servicing standards, such as taking steps to mitigate the risk of default on the mortgage by taking loss mitigation actions through loan modifications or other actions. These actions typically increase costs for servicers as servicers need to devote personnel to these efforts and take longer to complete than a foreclosure on the property.

**2) Rising compliance costs will not force players to exit the origination business as banks can increase the variability of the cost structure** – Based on conversations with industry participants, we believe there are some economies of scale in origination largely due to compliance and legal staffing, but overall there do not appear to be significant barriers to entry in the business. One long time industry consultant we spoke with believes that \$100 mil in monthly originations and \$15-20 mil in equity are adequate to compete in mortgage origination. Cost structures among the larger originators seem to be fairly variable and smaller players have options to further reduce or adjust their cost structures. This will allow smaller banks to continue to offer mortgage as a product to their customers, although it will somewhat reduce the profitability of their origination business.

■ **The origination business has a fairly variable cost structure...** – Although cost structures vary by bank, we believe overall costs are fairly variable. A chart presented by WFC at a 2012 analyst conference suggests that ~75% of costs in its retail origination business are variable, though we believe a portion of these costs are headcount-related which can be taken out with a lag<sup>15</sup>. One regional bank we spoke with which outsources some, but not all fulfillment, noted that their cost structure was highly variable, resulting in origination costs per loan remaining within a +/- 10% band. Given the variability of costs, scale is not an important differentiating factor in mortgage.

■ **...And banks are further increasing variability** – Banks have options to further increase the variability of their cost structures. Although these options come with an associated cost, reducing profitability, it will allow them to continue to offer mortgage as a product for their customers. Centralizing has allowed banks to reduce costs of staff and office space, while outsourcing has allowed them to build more variability into the cost structure. IBM and EMC are among the companies providing mortgage fulfillment services. For example, IBM launched a mortgage fulfillment outsourcing business in 2007, geared towards small and mid-size lenders who pay on a transaction-by-transaction basis.

**3) Economies of scale remain important in servicing** – Economies of scale remain important in servicing where margins on individual loans are thin. For example, regulations require servicers to have backup sites in case of emergency to ensure timely servicing. In addition, personnel costs can be high as a number of skill sets are needed to run a servicing business (such as personnel with the skills and analytics to hedge changing MSR values). Scale can benefit servicers as well by giving them pricing power with vendors who supply credit reports or flood certifications. Also, the servicing of delinquent loans can account for a significant portion of the cost of servicing alone as it requires additional personnel and costs that may not be recovered in a loan modification or foreclosure.

■ **Selling delinquent servicing** – Selling delinquent servicing can help some servicers reduce costs. According to an MBA/Stratmor study, Foreclosure and Other Real Estate Owned expenses represented 30% of total servicing expenses in 2012. There are servicers, such as Nationstar and Ocwen who specialize in servicing delinquent loans and believe they can do this at a lower cost than other servicers. Some banks have been selling delinquent servicing to these specialty servicers to reduce costs. Bank of America sold servicing on \$306 bil of loans in January of 2013, as part of an effort to reduce servicing costs.

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<sup>15</sup> Slide 17 of 2012 BancAnalysts Association of Boston Conference presentation

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## Direction of GSE Reform

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**Despite Congress' push to advance GSE reform, we do not expect significant changes to the market over the next several years** because the system in place favors maintaining the status quo. However, we believe the GSE reform is a likely outcome over the longer term because there is political will to make changes to today's housing market structure.

**1) We see limited probability that GSE reform will happen over the next 3 years...** – We believe there is limited urgency for policymakers to enact GSE reform in the near-term (ie over the next 3 years). We expect the market to largely remain status quo with the GSEs continuing to function in their current role. The industry will need time to digest the implementation of Dodd-Frank regulations and higher capital requirements and there are also a number of other practical factors which make near-term reform difficult, including:

- **Dominant role of GSEs in today's market makes reform difficult in the near-term...** – Given the dominant role the GSEs play in the mortgage market today, sweeping housing finance reform could have a negative impact on a mortgage market that is still in the midst of recovery. As we illustrated previously, the GSEs and FHA/VA-conforming loans have borne the credit risk on >80% of all mortgage originations since 2009. Also, GSE-conforming loans are temporarily included in the QM safe harbor under the CFPB's Ability-to-Repay rule for a period of up to seven years, which grants lenders protection from lawsuits.

- **...and the GSEs' strong financial performance has been alleviating pressure on the federal budget...** – After the GSEs were taken into conservatorship in 2008, Treasury injected nearly \$188 bil into the companies to keep them afloat in exchange for senior preferred shares. The Treasury amended the preferred stock agreements in 2012 to effectively force the GSEs to pay out all of their quarterly profits to Treasury<sup>16</sup>. Due to the strong financial performance of the GSEs over the last several quarters, they are projected to pay back their entire draw from Treasury by early 2014. The GSEs' profits are only a fraction of the \$680 bil fiscal deficit for fiscal 2013, but it is a source of income that would need to be replaced in the event reform was pushed through.

- **...and operational and implementation hurdles will take multiple years to address before reform can be enacted** – As discussed in Force 1, we believe the ultimate structure of GSE reform must include a govt backstop behind private capital taking first-loss of credit risk. Practical implementation of this structure will be operationally complex and will require significant work to get there.

**2) ...but longer-term we believe GSE reform will get pushed through due to political momentum and our view that current government subsidy on mortgage rates is manageable** – While we have not been able to identify a "trigger", we do believe there is a strong probability that policymakers will enact GSE reform over the longer term.

- **Policymakers continue to work on GSE reform proposals** – Based on conversations with DC contacts, a number of legislators continue to push forward on separate proposals for GSE reform. For example, Rep. Maxine Waters (D-CA) is creating her own proposal which is expected to create a new securities issuer to replace the GSEs with a co-operative ownership structure. The entity will have an insurance fund funded by the industry and backstopped by an explicit

<sup>16</sup> The 2012 Amendments changed the dividend payment amount to be based on the GSEs' positive net worth (ie assets less liabilities) every quarter. The GSEs must pay to Treasury the amount of positive net worth in excess of \$3 bil in 2013, with the net worth buffer declining by \$600 mil annually until it reaches zero in 2018.

guarantee. Senators Tim Johnson (D-SD)/Mike Crapo (R-ID) and Rep. John Carney (D-DE) are also working on proposals that are expected to have elements similar to Corker-Warner. Rep. John Delaney (D-MD) is working on a proposal that would require mortgage securitizations to be backed by private insurance with an option to supplement this with government reinsurance.

- **GSE reform may cause mortgage rates to rise, but we believe it may not be as much as many expect** – Opponents of GSE reform point to potentially higher mortgage rates as a reason for why it is politically untenable to enact reform. Our best estimate is that there is limited evidence of a significant GSE subsidy in today's market, which implies that GSE reform would not meaningfully raise mortgage rates. As we stated in Force 1, g-fees are in-line with what the private market would demand and policymakers are intent on maintaining the TBA market, which means there is no subsidy from either of these items.
- **QE tapering will raise overall interest rates, but there is limited evidence based on mortgage spreads that there is a big subsidy** – Since late 2008, the Fed has conducted three rounds of Quantitative Easing (QE). Based on observed agency MBS spreads vs avg 5-yr and 10-yr Treasury rates<sup>17</sup>, QE1 had a large subsidy effect during the depths of the financial crisis but the Fed's more recent QE3 has a minimal impact because the market is increasingly pricing-in the end of the program.
- **QE1 caused MBS spreads to tighten ~100-150 bps...** – The announcement of QE1 provided reassurance to the market that the govt was willing to step in to prevent the mortgage market from freezing. Figure 16 shows the Fed's QE1 announcement in Nov 2008 resulted in agency MBS spreads tightening ~60-70 bps within 1-2 months post-announcement and a further ~60-70 bps when the Fed announced an extension in March 2009.
- **...But QE3 is not having a significant subsidy effect on mortgage spreads** – Leading up to QE3 announcement, agency MBS spreads fell dramatically, but have since rebounded to a range of 100-150 bps which is relatively comparable with pre-QE3 levels and "normal" levels in the early-2000s (see Figure 16). This leads us to believe that there is no meaningful QE3 subsidy on mortgage spreads. Even after the Fed announced in Dec 2013 that it would trim its QE3 purchases starting in Jan 2014, mortgage spreads actually drifted lower. According to Citi's Credit and Muni Strategy teams, while demand will obviously fall sharply with tapering, supply is also projected to fall as Treasury issuance is expected to hit a five-year low in 2014 and Treasury maturities are expected to reach their highest level in history (see [Dec 5, 2013, "Putting Tapering into Perspective"](#)).

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<sup>17</sup> Though it is an imperfect proxy, we use agency MBS spreads (rather than plain mortgages spreads) in an attempt to better reflect the "market pricing" of a mortgage.



**Figure 16. QE1 announcement resulted in significant tightening in mortgage spreads, but QE3 had a more muted impact**



Source: Citi Research, Bloomberg data as of Dec 24, 2013

Note: the spread presented is the yield on current coupon Fannie Mae MBS vs the avg of US Govt 5 and 10 yr rates (to match MBS duration)

**3) We do not see GSE reform causing significant changes to the market, but smaller players will benefit from enhanced access to capital** – Although most bank executives we spoke with view status quo as the preferred reform scenario, we believe that if Corker-Warner were passed as-is, the mortgage market will look largely like it does today without any major winners or losers. With the exception of having private capital bear more of the credit risk, policymakers appear intent on largely maintaining the market structure as-is (30-yr fixed-rate mortgage intact, functioning TBA market). The one change we expect is that the future Common Securitization Platform should benefit smaller mortgage lenders as they will be able to access the capital markets directly whereas today, they must sell their production as whole loans. This would give them an alternative choice for secondary market execution.

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## Return of Private Label Securitization

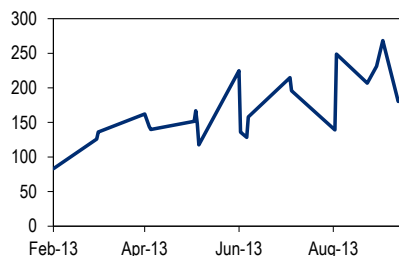
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**Figure 17. Of the 40 private label deals done post-crisis, Redwood Trust has been the biggest issuer**

Issuer	Amount (\$ mils)	Market share
Redwood Trust	8,172	49%
Credit Suisse	4,872	29%
JPMorgan	1,404	8%
EverBank	611	4%
PennyMac	550	3%
Nomura	440	3%
Shellpoint	261	2%
Other	434	3%

Source: Citi Research, Bloomberg

**Figure 18. Non-agency spreads remain wide, making issuance unattractive**



Source: Citi Non-Agency MBS Research

Note: estimated new issuance spread at pricing

**“The current RMBS bid is not competitive with the whole-loan bid...”**

**-Bob Magee, CIO of Shellpoint Partners, quoted in Oct 22, 2013 Bloomberg article**

**We believe the future private label securitization market can only absorb a small piece of the QM market, but will be able to continue to support the jumbo prime segment of the MBS market** – We believe the private label securitization (PLS) will largely look like it does today: viable for the segment of the market represented by jumbo loans, but not an option for all QM (due to a number of investor overhangs) or low income non-QM (due to litigation risk on top of credit risk/investor overhangs).

At the peak of the housing market in 2005-2006, private label MBS issuance reached over \$1 tril per year (on par w/ agency MBS), comprised of ~\$800-\$900 bil of subprime/Alt-A issuance and over \$200 bil of jumbo issuance. Post-crisis, private label issuance has been non-existent at less than \$17 bil, bringing down the current value of non-agency MBS to \$886 bil vs \$1.8 trillion in 2008. Issuance has been brought to market by only a few specialty players, including Redwood (RWT), and by large banks that are gauging appetite and testing execution (see Figure 17).

**1) Jumbo is the only sign of life in the private label securitization market and will continue to be viable in the future...**

– Post-crisis, only private label issuance backed by jumbo mortgages with pristine credit quality has been able to get done. Average down payments are in excess of 30%, borrower’s FICO scores are 750+, and all mortgages are fully-documented. Investors have felt comfortable bidding for these securitizations due to limited credit risk. After speaking with industry participants, there seems to be plenty of capacity to take on more supply.

■ **We have seen limited jumbo issuance because of challenges to profitability**– Issuers remain hesitant to bring supply to the market as deal economics are not as lucrative as they once were. Currently, jumbo securitization is not the best form of execution. It is more profitable to sell the whole loans without packaging them into bonds. As seen by the recent Shellpoint issuance cancellation, there is more profit to be made in selling the whole loans. Banks are desperate for low credit risk, high yielding assets. Banks continue to want to hold these loans on balance sheet and are reluctant to securitize them.

– **Non-agency MBS spreads remain wide, which makes issuance unprofitable** – At the beginning of 2013, non-agency MBS spreads were equal to agency MBS spreads, making the issuance of non-agency attractive, however, ‘taper talk’ caused non-agency spreads to widen out significantly more than agency MBS spreads as investors became risk averse (see Figure 18). This has made the economics of securitizing non-agency loans less attractive. As spreads widen, it becomes less profitable for a private label issuer to do a securitization because it reduces the excess interest spread, which is selling at a multiple of 4-5x the coupon per our industry contacts. The securitizers need to sell the excess interest spread (also known as the interest-only or “IO” tranche) in order for PLS to make economic sense.

• **For example, Shellpoint recently canceled its planned non-agency MBS issuance citing unattractive profitability** – In Oct 2013, Shellpoint pulled its planned \$250 mil prime jumbo MBS issuance, citing that selling the whole loans was more profitable than securitization. Using a similar analysis as in Figure 19, Citi’s non-agency MBS strategy team estimates that if Shellpoint had executed the securitization, the net profit would have been de minimis at ~5c on the dollar (see [Oct 24, 2013, “Mortgage Credit Weekly”](#) pgs 3-4). In contrast, the general appetite for whole loans continues to be quite strong as evidenced by the historically tight jumbo-conforming spread (difference btw 30-year fixed and 30-year jumbo mortgage rates).

- **Ratings agencies are requiring thicker credit protection pieces within private label deal structures, also reducing profitability for issuers...** – After being severely criticized for AAA ratings that failed to adequately account for risk during the crisis, the “pendulum” in risk tolerance at ratings agencies has swung to a very conservative stance. Today, ratings agencies mandate high levels of credit enhancement (represented by the percentage of a deal that is allocated to a subordinated buffer class) to give greater protection for AAA tranches and have adopted a conservative posture on the collateral for the securitizations. Industry participants we spoke to noted that expanding the “collateral box” to allow for investment properties and second homes would be contributors to growing the private label securitization markets.
- **Ratings agencies are requiring 7% subordination vs 3% previously** – Pre-crisis subordination was in the 3% range, meaning 97% AAA and 3% subordinate securities. Post-crisis, the subordination requirement has increased to the 7% range, which is at odds with the fact that all post-crisis issuance has been comprised of ultra-prime collateral. This weighs on the profitability of the deal because the riskier subordinate tranches are offered at a discount to increase the yield, which reduces the net proceeds. Using the same framework as laid out above, our example in Figure 19 illustrates that by raising the subordination requirement from 3% to 7%, the gross margin on a securitization drops from ~130 bps to ~50 bps.
- **FHFA has raised g-fees to make PLS more competitive vs agency execution, but we believe g-fees need to increase by at least another 10 bps for PLS market to approach GSE execution** – DeMarco has continually raised guarantee fees in an effort to stimulate private capital in the mortgage market. By raising the g-fee, the FHFA has hoped to narrow the cost between what Fannie and Freddie charge lenders on insured loans and what private lenders would pay to securitize loans into PLS. According to our analysis, the spread between agency and jumbo non-agency execution profitability has narrowed, but agency execution is still marginally better by ~60 bps (see Figure 20). While not an exact science, using this same analysis if we raise g-fees by ~10 bps profitability is comparable. Outside of these pristine credit quality jumbo mortgages though, profitability favors agency execution.
- **Longer term, we believe strong demand for jumbo MBS will continue to support the PLS market** – Pristine credit quality means that investors are not concerned about the long list of overhangs that plagued the market during the crisis. There is continued demand from insurance companies, foreign governments, and asset managers for high quality non-agency MBS and we do not believe this appetite should wane going forward.
- **Lower conforming loan limits will broaden the non-agency jumbo pool** – To qualify as a mortgage that is eligible for GSE purchase, the loan balance must be below the conforming limit which is set annually by the FHFA (\$417k nationally and \$625.5k in high cost areas). In Dec 2013, the FHFA put out a plan for commentary that would reduce the conforming loan limit to \$400k nationwide and to \$600k in high-cost areas, which would affect ~9% slice of the market<sup>18</sup>. While these loans would expand the pool of eligible mortgage for non-agency execution, we believe instead these loans would most likely be retained on balance sheets in this low rate environment. This is consistent with the trend that we have seen post-crisis: for example, of the ~\$590 bil jumbo

<sup>18</sup> According to Inside Mortgage Finance, in 2Q13, loans between \$400-417k accounted for ~7% of GSE purchases and loans over \$600k accounted for ~2%.

originations done post crisis, only \$17 bil have been securitized, meaning ~95% of jumbo originations have been retained on balance (vs over 50% in 2007).

- **Increase in LLPAs likely has no impact on PLS and will only raise mortgage rates for the bulk of the market** – In Dec 2013, the FHFA increased upfront loan-level price adjustments (LLPAs), which are upfront charges on mortgages to compensate for the creditworthiness of borrowers. Based on conversations with industry participants, we believe this change was an effort to raise mortgage rates on agency mortgages so that it is more attractive for borrowers to take out privately-funded mortgages (either via PLS or balance sheet retention). According to the MBA, the LPA increase will raise agency mortgage rates by 20-40 bps on borrowers in the bulk of the mortgage market (FICOs btw 680-760, 80-95% LTV). We do not believe this change will drive a meaningful increase in PLS due to the reasons outlined above, and furthermore, new FHFA Director Mel Watt has expressed his concern with this strategy and has stated that he will seek to delay these increases.

**2) ...But in order for the private label securitization market to absorb more credit risk, we believe a number of investor overhangs must be resolved** – Based on conversations with industry participants, in order for investors to take on credit risk in private label securitizations, we believe that a number of issues need to be resolved which we lay out below. Although a much smaller market, CMBS issuance has reached \$92.9 bil vs only \$48.7 as of this time last year as investor overhangs regarding transparency and rating agency issues have been cleared up and we believe demonstrates the ability for some PLS to rebound once investor confidence is restored.

“Contract abrogation and rule change are among the main impediments to the securitization market’s growth... You can price for prepayment, default, and liquidity risk, but how can you price for, or hedge, eminent domain risk?”

-Michelle Russell-Dowe, Brookfield Investment Management’s Managing Director and Head of Securitized Products Investments, quoted in Sept 2013 Euromoney article

- **Investors fear losses arising from municipalities using eminent domain to seize underwater mortgages out of MBS pools** – Local governments have proposed using their eminent domain powers to seize and restructure underwater mortgages in order to help struggling homeowners. The key is that these mortgages may still be performing. The governments would pay fair market value for the mortgages and MBS investors would incur the write-offs as losses. For example, if the outstanding mortgage balance is \$250k and the city offers 80% (or \$160k), the MBS holders would incur a \$90k loss<sup>19</sup>. The City of Richmond, CA was the first to move forward with its eminent domain plan in Jul 2013, sending notices to holders of 624 underwater mortgages (444 of which are performing<sup>20</sup>) and reportedly offering 80 cents on the dollar for them. A number of other municipalities in CA, IL, MA, NJ, NV, and NY are also considering similar plans (see [Aug 8, 2013, “Mortgage Credit Weekly”](#), pg. 5).

- **Investors await outcome of Richmond case for precedent on eminent domain seizures** – Trustees Wells Fargo and Deutsche Bank filed a lawsuit in Aug 2013 on behalf of investors including Pimco, BlackRock, DoubleLine Capital, and Fannie/Freddie against the City of Richmond and Mortgage Resolution Partners (MRP), challenging their plan as unconstitutional and asking a federal court for an injunction to prevent the plan from moving ahead. In Sept 2013, US District Court Judge Charles Breyer dismissed the lawsuit because Richmond had not yet exercised its eminent domain powers to seize any mortgages. We note that the judge left the door open for the case to be revisited in the future. Separately, the FHFA and Freddie Mac have also threatened legal action against Richmond and MRP, as the GSEs were investors in the mortgages.

<sup>19</sup> In the Richmond, CA case, the municipality is reportedly offering 80% of the mortgage’s fair market value.

<sup>20</sup> Sept 2013 Euromoney article: “The Imminent Pain of Eminent Domain”

- **Proposed bill illustrates that legislators side with investors in opposing eminent domain seizures** – In July 2013, Representative John Campbell reintroduced the Defending American Taxpayers from Abusive Government Takings Act, which would amend the GSEs' charters to prohibit them from purchasing mortgages originated in counties where eminent domain was used to seize a mortgage within the prior 10 years. The bill currently awaits a vote in the House Committee on Financial Services. The Obama Administration has largely been silent on the issue, but recently, several Senators have sent letters to the HUD Secretary Shaun Donovan and Treasury Secretary Jack Lew urging them take opposition. Former FHFA Director Ed DeMarco was a strong opponent against eminent domain, but investors have yet to hear from newly-appointed FHFA Director Mel Watt on the issue.
- **Standardization of representations & warranties (R&W) and enforcement mechanisms would increase investor confidence and improve transparency** – Developing a commonly-accepted standard for R&W enforcement would improve transparency in the private label MBS market and streamline investors' diligence efforts. For example, Redwood deals don't contain sunset provisions, whereas JPM deals contain 3 yr sunset provisions, making the deals difficult to compare.
- **Investors remain wary of non-agency MBS wrapped by private mortgage insurance (PMI) due to their inability to pay on claims during the financial crisis** – In a nutshell, the severity of the housing downturn resulted in significantly worse-than-expected losses on the US mortgage insurers, which eroded their capital bases and led to regulatory takeovers or business activity restrictions. The end result is that PMI companies were unable to pay out on claims, leaving investors exposed to credit losses when they thought they were protected by PMI. Today, investors question what PMI's role is if it fails to provide protection during times of stress when it is needed most. For example, in MGIC 1Q09 earnings call, management noted that rescission rates increased from ~5% historically to 15%-20% leaving investors exposed to losses.
- **Adding to investor concerns, Ambac case calls into question the legal reach of PMI diverting cash flows from uninsured investors** – In Aug 2013, a Circuit Court in Wisconsin approved for Ambac (a mortgage insurer) to pay-out on claims using cash flows from the securitization waterfall that would have otherwise gone to the unwrapped tranches. In other words, the Court diverted cash flows from unwrapped investors to wrapped investors. This illustrates the complexity of PMI legal proceedings. Our conversation with a large investor with exposure to the unwrapped tranches vowed to never again invest in a deal that had PMI coverage.
- **Going forward, regulators are pressing to raise capital requirements for the PMI providers** – Regulators including the Basel committee, the National Association of Insurance Commissioners, and state insurance authorities have been pressing forward with initiatives to improve the regulatory capital framework for PMI providers. In addition to higher capital levels, regulators are also advocating for PMI companies to undergo regular stress tests. While these changes will improve the viability of PMI companies, it remains to be seen whether private label MBS investors embrace PMI going forward.
- **The leveraged buyer that existed pre-crisis does not exist anymore, reducing overall demand** – Market participants we spoke to suggest that the "leveraged buyer" that was prevalent pre-crisis now does not exist as 1) the cost to repo/finance non-agency MBS is 50-100 bps more expensive than agency

MBS financing and 2) they can't get enough leverage as regulatory policies are dampening leverage availability (ie the supplementary leverage ratio). This makes it harder for the institutional investors who were buying the AAA rated private label MBS to receive high enough returns.

**3) PLS also not a solution for low income, non-QM** – Low income, non-QM loans introduce significant litigation risk on top of investor overhang. The implication is that banks will not be willing to originate or securitize these loans as there is a high chance of lawsuits. Furthermore, the credit riskiness of these mortgages brings the long list of investor overhangs above into focus.

■ **The govt will have to remain the primary vehicle by which these loans are securitized** – As discussed in Force 1, banks will be unwilling to originate and securitize low income, non-QM loans and thus the govt will have to be the lender of last resort to pick up the slack. In our view, policymakers seem to be embracing this notion as all of the GSE reforms call for FHA/Ginnie Mae to remain intact, albeit with modest changes to improve their financial strength.



## Example of Mortgage Securitization Economics – Difference in Profitability w/ Lower Subordination

- **AAA securities comprise 93% today vs 97% pre-crisis** – If we assume that the AAA securities are issued near the market rate, they should be issued at par. In our example, the 93% of the deal that is comprised of AAA securities will bring in \$93.
- **Subordinate securities make up 7% of the deal today vs 3% pre-crisis** – The subordinate securities are in place to protect the AAA tranche from losses. Since the subordinated tranches take the first loss, they must offer an attractive yield to investors. The subordinated tranches combined are sold at ~80c on the dollar (a ~20% discount in order for the yield to be attractive to investors). We note that some investors find subordinate tranches attractive b/c if losses in the trust come in lower, the value of these securities will increase.
- **Interest-only (IO) securities take the remaining interest and are sold to monetize excess spread** – The difference between the net coupon on the loans (4.40%) and 1) the coupon on the AAA's that are priced at a lower coupon and 2) the coupon on the subordinates, creates the excess interest in the trust. These IO securities trade in the market place and are priced on average at 5x cash flow, or in this example ~\$1.9. The issuer can choose to retain the IOs.
- **Deal is ultimately sold with small gain, but profitability is lower with higher subordination** – After deal expenses, the securitization process generates a gain driven by the fact that the net coupon on the loans is higher than the coupon/yield that the market requires for securities. In this case, the gain is minimal and lower than securitization via agency MBS.

Figure 19. Higher subordination requirements have had large negative impact on private label securitization economics

### Current Environment - 7% Subordination

Underlying mortgage rate	4.65%						
Servicing fee	0.25%						
<b>Net coupon into securitization</b>	<b>4.40%</b>						
	A	B	C	D	E		
	Coupon	Yield	\$ Interest	% of deal	Sold at:	Issued Amount	
AAA securities	4.00%	4.00%	3.72	93%	100	93.0	=C * D
Subordinate securities	4.40%	5.50%	0.31	7%	80	5.6	=C * D
Interest only securities	0.40%		0.37		5	1.9	=B * D
<b>Net amount from Deal Issuance</b>			<b>4.40</b>			<b>100.5</b>	
<b>Gross margin</b>						<b>0.5%</b>	

### Comments

Per Bankrate: national average on 30 yr jumbo mortgage on 12/30/13

Coupon coming into the securitization

93% is amount of AAA permitted by rating agencies

Sub tranches necessary to protect AAA-rated securities from loss; sold at discount to provide sufficient yield for risk; currently priced at ~\$0.80 per industry participants

Cpn rate is difference btwn 4.4% net coupon and wtd avg rate paid out on the other tranches; currently priced at 5x the coupon per industry participants

**Deal should be sold above par to net a profit**

Net amount from deal issuance / 100 - 1 (assumes loans are purchased at par)

### Old Environment - 3% Subordination

Underlying mortgage rate	4.65%						
Servicing fee	0.25%						
<b>Net coupon into securitization</b>	<b>4.40%</b>						
	A	B	C	D	E		
	Coupon	Yield	\$ Interest	% of deal	Sold at:	Issued Amount	
AAA securities	4.00%	4.00%	3.88	97%	100	97.0	=C * D
Subordinate securities	4.40%	5.50%	0.13	3%	80	2.4	=C * D
Interest only securities	0.40%		0.39		5	1.9	=B * D
<b>Net amount from Deal Issuance</b>			<b>4.40</b>			<b>101.3</b>	
<b>Gross margin</b>						<b>1.3%</b>	

Per Bankrate: national average on 30 yr jumbo mortgage on 12/30/13

Coupon coming into the securitization

93% is amount of AAA permitted by rating agencies

Sub tranches necessary to protect AAA-rated securities from loss; sold at discount to provide sufficient yield for risk; currently priced at ~\$0.80 per industry participants

Cpn rate is difference btwn 4.4% net coupon and wtd avg rate paid out on the other tranches; currently priced at 5x the coupon per industry participants

**Deal should be sold above par to net a profit**

Net amount from deal issuance / 100 - 1 (assumes loans are purchased at par)

Source: Citi Research

# Mortgage Securitization Economics – GSE vs Private Label

Figure 20. In the current environment, GSE securitization is slightly more profitable than private label securitization

GSE securitization							Comments
Underlying mortgage rate	4.55%						Per Bankrate: national average on 30 yr conforming mortgage on 12/30/13
G-fee	0.60%						Guarantee fee paid to GSEs
Servicing fee	0.25%						
Net coupon into securitization	3.70%						Coupon coming into the securitization
	A	B	C	D	E		
	Coupon	Yield	\$ Interest	% of deal	Sold at:	Issued Amount	
AAA securities	3.70%	3.66%	3.70	100%	101.1	101.1	Price is linearly interpolated from the TBA prices of 3.5% and 4.0% cpn 30 yr mtgs on 12/30/13 (~\$99.66 and ~\$103.19 respectively)
							=C * D
Net amount from Deal Issuance			3.70			101.1	Deal should be sold above par to net a profit
Gross margin						1.1%	Net amount from deal issuance / 100 - 1 (assumes loans are purchased at par)
Private label securitization							Comments
Underlying mortgage rate	4.65%						Per Bankrate: national average on 30 yr jumbo mortgage on 12/30/13
Servicing fee	0.25%						
Net coupon into securitization	4.40%						Coupon coming into the securitization
	A	B	C	D	E		
	Coupon	Yield	\$ Interest	% of deal	Sold at:	Issued Amount	
AAA securities	4.00%	4.00%	3.72	93%	100	93.0	93% is amount of AAA permitted by rating agencies
Subordinate securities	4.40%	5.50%	0.31	7%	80	5.6	Sub tranches necessary to protect AAA-rated securities from loss; sold at discount to provide sufficient yield for risk; currently priced at ~\$0.80 per industry participants
Interest only securities	0.40%		0.37		5	1.9	Cpn rate is difference btwn 4.40% net coupon and wtd avg rate paid out on the other tranches; currently priced at 5x the coupon per industry participants
							=B * D
Net amount from Deal Issuance			4.40			100.5	Deal should be sold above par to net a profit
Gross margin						0.5%	Net amount from deal issuance / 100 - 1 (assumes loans are purchased at par)

Source: Citi Research

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# Mortgage Underwriting Standards

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"...mortgage credit conditions remain quite tight for many would-be borrowers, and I suspect that the easing of these conditions will be a slow and gradual process."

-Fed Governor Elizabeth Duke at Mar 8, 2013 MBA Mid-Winter Housing Finance Conference

Banks have been loosening underwriting standards across loan categories, including commercial and commercial real estate, but we have not seen meaningful easing in residential mortgage lending. While it is well-known that subprime, Alt-A, and other riskier loans are no longer being offered, even underwriting standards for conforming mortgages have tightened an estimated ~15% compared to the decade preceding the Great Recession.

We anticipate that mortgage underwriting standards for conforming mortgages will loosen but only around the edges. Areas where lenders could ease overlays include lowering credit score requirements and raising LTV tolerances, excluding the distortive influence of Home Affordable Refinance Program (HARP) refinancings on total refinancing origination credit statistics<sup>21</sup> (see Force 4). However, we believe easing conforming standards is limited to a fraction of the ~15% of mortgage availability lost over the past recession due to the upcoming implementation of Ability-to-Repay/QM. More specifically, QM's 43% back-end debt-to-income (DTI) ratio cap appears to be setting the "lower bound" for underwriting standards based on observed credit metric trends and industry discussions, even though the GSEs can currently back loans with DTIs greater than QM's limit during an exemption period that spans up to 7 years. Further, we also anticipate that lenders will include a "margin of safety" cushion when establishing overlays for the ~43% DTI cap due to the apparent leeway in calculating the ratio and related risk of legal challenges that future QM loans in default did not actually meet QM's requirements.

Figure 21. Subprime/Alt-A comprised over 30% of total MBS originations in 2005-2006 vs 0% today

Originations by Mortgage Type			
	Subprime/ Alt-A	Other Non- Conforming	Conforming
2004	25%	29%	46%
2005	32	30	38
2006	34	31	36
2007	19	29	52
2008	4	14	81
2009	1	10	90
2010	0	9	90
2011	1	15	84
2012	0	13	87
1H13	0	14	86

Source: Citi Research, Inside Mortgage Finance

**1) Mortgage lending standards are tight today due to lenders' credit overlays on top of GSE "floor" in response to risks of GSE putbacks and future ATR/QM implementation**— The Mortgage Bankers Association's (MBA's) Mortgage Credit Availability Index (MCAI)<sup>22</sup> stood at 110.2 in Nov 2013 versus a range of 750-850 in 2004-07, indicating that mortgage lending standards have tightened by a staggering ~86% over this period. While the contribution of no/low-doc, interest-only, significant cash-out refi, and related subprime loan products helped contribute to the ~86% decrease in the MCAI, the following analysis also shows that conventional mortgage availability has decreased an estimated ~15%. Importantly, we believe that GSE underwriting requirements should theoretically be the "lower bound" for conventional lending standards today; however, in actual industry practice, mortgage lenders appear to be overlaying more stringent requirements on top of GSE requirements to mitigate risks and uncertainties related to GSE putback risk and the upcoming implementation of Ability-to-Repay/QM.

■ **Subprime/Alt-A mortgages represented 34% of originations at the peak but are no longer offered today...** — Subprime and Alt-A loans, which are among the riskiest credit quality mortgage loans, peaked at 34% of total originations in 2006 (see Figure 21).

■ **...and similarly, mortgage lenders have been removing products that do not comply with QM** — The MCAI has tightened sequentially over the last few months from 112.27 in July to 110.2 in Nov due to mortgage lenders removing

<sup>21</sup> HARP targets borrowers with high LTVs of 80%+ with no LTV limit for fixed rate mortgages, which causes credit statistics for total refinance originations (ie HARP + non-HARP) to appear looser in related credit quality than they are for non-HARP product. For reference, HARP originations represented roughly 20% of total refinance volumes in 1H13, according to the FHFA, and recently trended up to approximately ~40% of total weekly refinance volumes, according to the MBA's Weekly Mortgage Applications Survey in Sept 2013.

<sup>22</sup> The MBA's Mortgage Credit Availability Index is calculated using several factors related to borrower eligibility (credit score, loan type, LTV ratio, etc) from 85 lenders/investors and combined using a proprietary formula derived by MBA. Base period and value for all indexes is Mar 31, 2012 = 100.

program offerings that would not comply with the upcoming implementation of Ability-to-Repay/QM. Removed mortgage products include interest-only loans and mortgages with terms of over 30 years.

■ **GSEs raised credit requirements on mortgage purchases starting in 2008 –**

The deteriorating housing market in 2008 prompted the GSEs to tighten their underwriting standards for acquired mortgages. Starting in 2008, the GSEs instituted a minimum downpayment requirement, a minimum credit score, and a maximum DTI ratio and also began curtailing purchases of subprime, Alt-A, and other riskier mortgages. These changes can be seen in Figure 23 and Figure 24 below, which shows that the weighted average FICO score on GSE purchased loans rose from 710-730 pre-crisis to 750-760 post-crisis and LTVs at origination declined from 70-75% pre-crisis to 65-70% post-crisis.

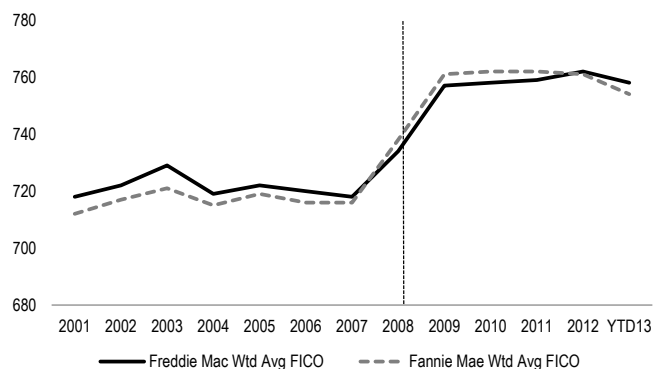
– **US FICO distribution and trend in post Great Recession lending standards implies conforming market may have shrunk by ~15% since 2008** – Average FICO scores on GSE loan purchases post-2008 are ~40 pts higher compared to pre-crisis acquisitions. Based on FICO's national score distribution (Figure 22) and the percent represented by the 700-749 and 750-799 segments, we interpolate that the GSEs' credit score tightening resulted in a ~15% reduction in availability of conforming mortgages.

Figure 22. National FICO score distribution

FICO Score	Segment (%)	Cumulative (%)
300-499	6.0%	
500-549	8.5%	15%
550-599	9.9%	24%
600-649	10.1%	35%
650-699	12.2%	47%
700-749	16.2%	63%
750-799	18.8%	82%
800-850	18.4%	100%

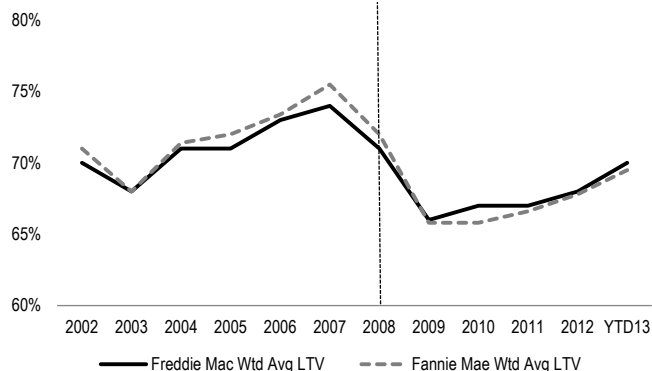
Source: Citi Research, FICO (as of Oct 2012)

Figure 23. FICO scores on GSE purchases were 710-730 pre-crisis, but have risen to 760 since 2008



Source: Citi Research, Fannie Mae and Freddie Mac 10-Qs and Credit Supplements  
Note: excludes HARP, which started in 2009. Data as of 3Q13.

Figure 24. LTVs on GSE purchases trended up to 75% pre-crisis, but have improved to sub-70% since 2008



Source: Citi Research, Fannie Mae and Freddie Mac 10-Qs and Credit Supplements  
Note: excludes HARP, which started in 2009. Data as of 3Q13.

■ **GSE loan purchase requirements are the theoretical “lower bound” for underwriting standards today...**

– The GSEs' purchase requirements are technically more lenient than the QM definition because they allow for a higher back-end DTI cap of 45-50% (depending on credit compensation factors) vs QM's 43% maximum. As a reminder, however, QM's GSE exemption expires after 7 years (or earlier if GSE conservatorship ends).

"If lenders are unsure about the conditions under which they will be required to repurchase loans sold to the GSEs, they may shy away from originating loans to borrowers whose risk profiles indicate a higher likelihood of default."

-Elizabeth Duke, Fed Governor, at the May 9, 2013 Housing Policy Executive Council

"Our expectation is zero defects... It's a whole new world from a loan quality perspective... We want to focus on quality individual file data, which is something we haven't done in the past."

-Steve Spies, Vice President of loan quality and lender assessment at Fannie Mae, quoted in 9/17/13 American Banker Article

■ **...but in actual practice, lenders appear to be implementing more stringent overlays than required by GSEs** – Our conversations with mortgage underwriters and analysis of GSE purchase requirements relative to reported credit statistics lead us to believe that today's tight mortgage lending standards are due to uncertainties over GSE putback risk and the Ability-to-Repay rule.

– **Mortgage lenders incurred significant losses for pre-crisis lending and appear close to an end of the related litigation...** – The flood of mortgage delinquencies in 2009-10 caused GSEs to scour their securitized loans for underwriting deficiencies that potentially violated reps and warranty agreements, which would enable the deficient loans and related losses to be "putback" to the sellers of the loans. To put the issue in context, mortgage putback losses since the start of 2009 for the 3 largest mortgage originators, WFC, JPM, and BAC, totaled ~\$33 billion, or ~15% of combined reported net income for the companies over this period.

– **...and in response lenders have improved underwriting which should continue with a focus on a 43% DTI cap for conforming loans** – Quality initial underwriting along with proper documentation and record retention are key factors in protecting against repurchase requests. Due to the magnitude of industry putback-related losses over the last few years, along with the more aggressive stance that the GSEs are taking on putbacks, we anticipate that mortgage lenders will permanently maintain an overlay for QM's 43% DTI cap.

- **Putback risk likely higher going forward as GSEs adopt "zero defect" policy** – Based on press reports, it appears that the GSEs will adopt an even more aggressive stance on mortgage putbacks going forward<sup>23</sup>. Fannie and Freddie have been electronically validating all of the loans they purchase, which marks a significant change from the past when they only reviewed a sample of acquired loans or loans after they defaulted. Furthermore, if a loan is found to be defective, the GSEs will require lenders to repurchase it immediately whereas in the past it may have taken years. According to a Dec 2013 IMFnews excerpt, mortgages securitized in 2013 accounted for 4.3% of pending and disputed buyback demands at the end of 3Q13, which the article attributed to the GSEs' more stringent review policies.

- **Mel Watt is expected to clarify reps and warranties to drive easing in mortgage lending standards, but we see limited chances of success** – Mike Heid, President of Wells Fargo Mortgage, commented during an Oct 2013 industry conference that clarity on GSE reps and warranties would drive a loosening in mortgage credit. Industry participants widely expect new FHFA Director Mel Watt to take actions to loosen underwriting standards, likely by clarifying GSE rep and warranty policies, but our conversations with industry experts suggest that it would be difficult for Mr. Watt to do this as the GSEs and DoJ continue to aggressively go after banks on rep and warranty claims.

**2) Potential loosening on the margin** – We believe there may be some room for lenders to ease underwriting standards on the margin as the refi wave subsides. However, as we highlighted above, it is our view that GSE putback risk and Ability-to-Repay will cause banks to maintain higher standard of underwriting than past decades going forward, allowing for only loosening around the edges.

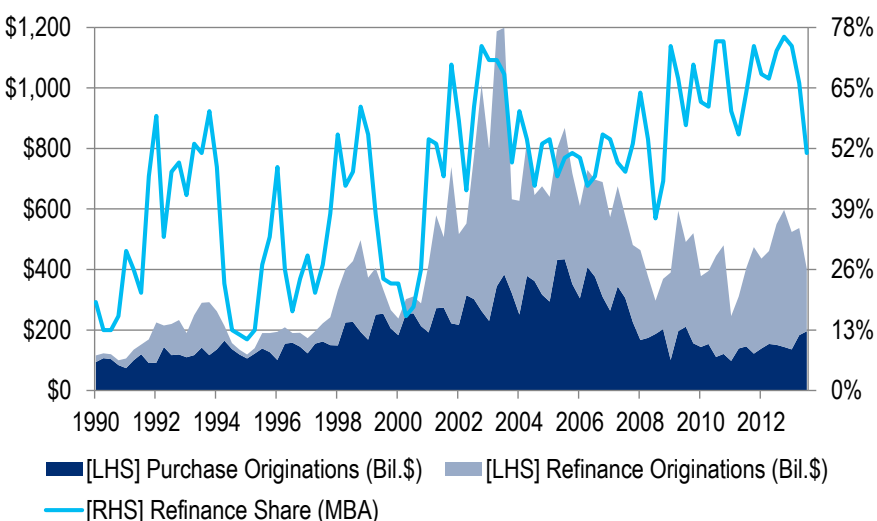
<sup>23</sup> Sept 17, 2013 American Banker article: "Fannie and Freddie Aim for Mortgages with 'Zero Defects'"

**“Refinancing applications have expanded much more over the past year and a half than lenders’ ability to process these loans... When capacity constraints are binding, lenders may prioritize the processing of easier-to-complete or more profitable loan applications. Indeed, preliminary research by the Board’s staff suggests that the increase in the refinance workload during the past 18 months appears to have been associated with a 25-35% decrease in purchase originations among borrowers with credit scores between 620 and 680 and a 10-15% decrease among borrowers with credit scores between 680 and 710. Any such crowding-out effect should start to unwind as the current refinancing boom decelerates.”**

**-Elizabeth Duke, Fed Governor, at the May 9, 2013 Housing Policy Executive Council**

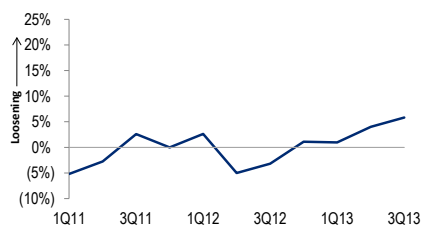
- **Declining refi volumes have supported recent loosening on the margin...** – Since the start of 2009, refinancing volumes ran at an average rate of 68% of total originations, well above the 41% average in the preceding two decades (see Figure 25). The recent wave of refi activity and accelerated HARP activity led to origination capacity constraints, which caused lenders to focus predominantly on the easiest-to-complete mortgage applications within conforming lending – the focus has been on HARP refis, refis to more creditworthy borrowers, and purchase originations to the even more creditworthy borrowers. We expect that as refi volumes decline, lenders will seek out more difficult-to-complete purchase and refinance volumes, supporting a natural slight easing in lending standards.

**Figure 25. Refinance share declined to ~51% of originations in 3Q13, and latest MBA forecast is for it to be 40% of originations in 2014-15**



Source: Citi Research, Mortgage Bankers Association

**Figure 26. Fed surveys indicate a small fraction of lenders are loosening residential mortgage standards**



Source: Citi Research, Haver

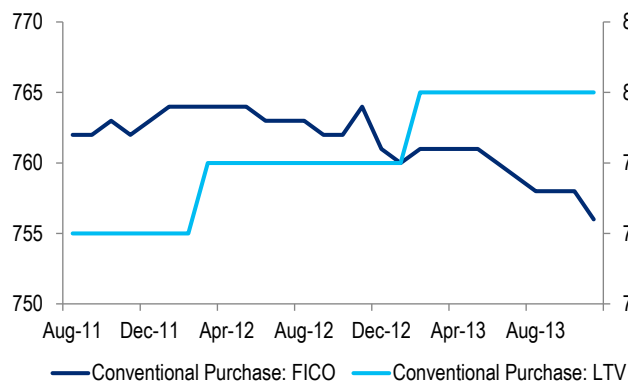
- **...which we are seeing in a number of metrics** – Modest loosening in residential mortgages is evident based on Fed loan officer surveys, MCAI readings, Ellie Mae data, and anecdotal press reports.
  - **Fed loan officer surveys indicate that a small number of lenders are loosening** – According to the latest Fed Senior Loan Officer survey from Oct 2013, a net ~6% of respondents<sup>24</sup> reported that they eased standards on residential mortgage loans over the past 3 months, up from 4% in 2Q13 and ~1% in 1Q13 and 4Q12. This is a continuation of the slight loosening trend that has been in place over the last several quarters. However, we note that the vast majority of respondents continue to report no change in underwriting standards (see Figure 26).
  - **Mortgage Credit Availability Index also showed some loosening y/y** – Although the MCAI has tightened sequentially over the last several months in anticipation of Ability-to-Repay implementation, the index has increased on a y/y basis from ~106 in Nov 2012 to ~110 in Nov 2013, owing partially to slightly looser underwriting standards, though high LTV HARP volumes have skewed the overall index in the direction of loosening.

<sup>24</sup> “Net” refers to the % of respondents reporting tightening less the % reporting easing.



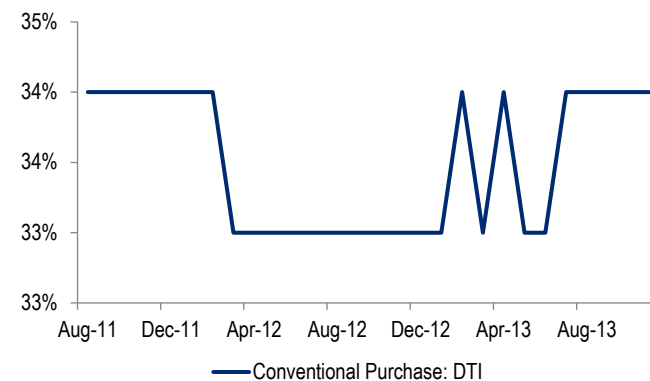
- **Ellie Mae data shows a bit of loosening on FICO/LTVs for conventional purchase mortgages, but DTIs have been range-bound** – The Ellie Mae Origination Insight Reports represents roughly 10% of total US mortgage originations, and recent trends depicted in Figure 27 and Figure 28 below show that average credit scores and LTVs are relaxing on the margin for conventional purchase mortgages. However, average back-end DTI ratios appear range-bound, which supports our view that lenders are locking in 43% DTI caps with some "margin of safety" in anticipation of Ability-to-Repay/QM implementation.

Figure 27. Avg FICO/ LTVs show slight easing of underwriting for conventional purchase mortgages...



Source: Citi Research, Ellie Mae Origination Insight Reports

Figure 28. ...but DTIs aren't moving, implying that lenders are locking-in 43% DTI caps, with some margin of safety



Source: Citi Research, Ellie Mae Origination Insight Reports

"...if you look at residential mortgages, this is the one area, that if you think about the way underwriting took place the terms offered pre-recession – none of the standards have returned to those levels... And now we are facing the implementation of QM or qualified mortgage in January. So there is still a lot of hesitation about opening up the box on residential mortgage... We've dropped off some of our loan-to-value restrictions in some of the states that were hurt hardest in the recession. So we've returned the loan-to-value criteria back to what I'd say a more normal levels with the stabilization of house prices."

Bill Parker, USB's Chief Credit Officer, at Nov 8, 2013 BancAnalysts of Boston Conference

- **Downpayment restrictions have been loosening in select pockets of the market** – Press reports indicate that lenders have been relaxing downpayment requirements in select markets and jumbo mortgages.
  - **JPM, USB anecdotally relaxing downpayment requirements in select regions** – In Sept 2013, JPM reportedly lowered downpayment requirements in FL, NV, AZ, and MI which collectively make up ~15% of home sales and often are non-jumbo (average home) price points<sup>25</sup>. These states will "no longer be considered distressed states" by JPM. Separately at a Nov 2013 analyst conference, USB stated that it had lowered mortgage downpayment requirements in select states that were most severely impacted by the recession. Bill Parker, USB's Chief Credit Officer, noted that the loosening reflected a reversion to normal lending requirements from overly-conservative standards instituted post-crisis.
  - **Downpayment requirements are easing for jumbo mortgages** – According to a WSJ article, a number of lenders including Wells Fargo, BofA, and New Penn Financial are allowing 15% minimum downpayments on jumbo mortgages, down from the usual 20% that most lenders have been requiring post-crisis<sup>26</sup>.

<sup>25</sup> Sept 11, 2013 Bloomberg article: "JPMorgan Removes Lending Barriers in Booming US Markets"

<sup>26</sup> Nov 7, 2013 WSJ article: "Down With the Down Payments"

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## Implications for Mortgage Banking Business

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## Origination

**There are three avenues of value creation in the mortgage business: 1) origination, 2) servicing, and 3) credit risk management.** In simple terms, origination is the creation of a mortgage for borrowers; servicing is the collection of mortgage payments from borrowers and loss mitigation activity on delinquent mortgages; and credit risk management is the business of bearing the default risk on mortgages and earning an adequate return for it.

Mortgages can be sourced through three channels (retail, broker/wholesale, and correspondent). As we show in Figure 29, the broker channel now accounts for only 10% of originations vs 20-30% pre-crisis, while correspondent share has remained relatively flat. We briefly describe each channel below and discuss their prospects going forward.

“...the retail channel has some very distinct benefits for us. We have full control of the customer experience, which means we’ve got the full ability to create that first impression that’s so important for the overall organization’s ability to cross-sell. There’s a wider profit margin in this particular channel of the business, and credit quality has also been much better. The other benefit to this is we have direct control of every aspect of the operational process from the very, very beginning.”

-Michael Heid, Wells Fargo’s EVP & President of Home Mortgage, at Wells Fargo’s May 5, 2012 Analyst Day

- **Retail channel** – In the retail channel, lenders find borrowers themselves and perform all underwriting and loan closing functions in-house. This is the preferred channel of origination because the lender interacts with borrowers directly, which results in better credit quality and enables the lender to control the entire customer experience.
- **Broker/wholesale channel** – Mortgage brokers are independent intermediaries between borrowers and lenders that have relationships with multiple lenders and are able to offer customers a variety of different mortgage products. Brokers help borrowers prepare their loan application packages and submit them to lenders for final approval, and then the lender ultimately provides the funding for the mortgage. Lack of control over underwriting in the broker channel led a number of major mortgage originators including WFC, BAC, JPM, and STI to exit the channel over the last several years.
- **Correspondent channel** – Correspondent lenders are mortgage originators that fund the loans in their own names, but turn around and sell them to generate proceeds to fund additional originations. Correspondent lenders sell their mortgage production as whole loans to larger institutions (called aggregators) or to the GSEs (via their cash windows) because they don’t generate enough mortgages to create pools for MBS issuance. The mortgages are usually sold on a servicing-released basis because correspondents tend not to have servicing capabilities. Before buying loans from correspondents, aggregators establish purchasing agreements that set the underwriting parameters and putback rights for non-compliant loans. We expect correspondents to remain viable going forward as they are a relatively easy lever to pull to source additional volumes at certain parts of the cycle.

Figure 29. The retail channel has gained market share at the expense of the broker channel

	2006	2007	2008	2009	2010	2011	2012	1H13
<b>Retail</b>	38%	43%	48%	48%	55%	58%	60%	63%
<b>Broker</b>	30	28	20	15	12	10	11	10
<b>Correspondent</b>	33	29	32	37	33	32	29	27

Source: Citi Research, Inside Mortgage Finance

**Origination can be profitable, but banks historically ran it at breakeven as a feeder for higher return servicing business and customer relationships –**

Although origination can be a profitable business, banks historically ran it at breakeven to get the MSR and customer relationships. However, higher bank capital requirements have reduced the economics for servicing, which makes mortgage overall a less attractive business for banks.

**Figure 30. On a GAAP basis, PHH's mortgage production business made \$97 mil in YTD13**

(\$ mil)	
Production revenues	493
Fees	247
Net Interest Income	(46)
Other	5
Revenues	699
Production-related expenses	602
Pretax income	97

Source: Citi Research, PHH financial disclosures

**1) Mortgage origination is a marginally profitable business for banks... –**

Mortgage production revenues are a product of the gain on sale (GoS) margin and mortgages sold. When mortgages are sold servicing-retained, a portion of the GoS margin represents the value of the mortgage servicing rights (ie the present value of the stream of future cash flows for servicing the mortgage over its life). By removing this gain and looking at just the cash flows from the origination/sale of the loan, it can be seen that cash flows are negative at the time of sale. Banks were historically willing to accept this negative cash flow in order to obtain the valuable servicing rights. We use PHH's excellent breakdown of its mortgage production operations to illustrate this point.

■ **On a GAAP basis, pre-tax income for PHH's mortgage production business was \$97 mil in YTD13, but we estimate a negative \$117 mil on a cash flow basis** – On a GAAP basis, PHH disclosed mortgage production pre-tax income of \$97 mil in YTD13 (see Figure 30), which includes non-cash gains for mortgage servicing rights which are included in the \$493 mil of disclosed Production revenues. We use PHH's detailed GoS margin disclosure to remove these non-cash gains to arrive at \$279 mil in "cash" origination revenues from the origination/sale of the loan, which are not enough to offset the costs of production after adjusting for the non-cash servicing gain (see Figure 31). Below we discuss the adjustments we made to GoS margins.

**Figure 31. Pre-tax cash flows on PHH's origination business have been negative 8 of the last 11 quarters**

	1Q11	2Q11	3Q11	4Q11	1Q12	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13	YTD13
Net origination margin (bps)	(43)	17	65	41	147	202	246	257	209	210	215	
Interest rate lock commitments	5,044	7,500	11,430	9,743	6,862	6,763	6,769	6,205	4,955	5,386	2,911	
(\$ mil)												
Production revenues	(22)	13	74	40	101	137	167	159	104	113	63	279
Fees	86	56	68	85	80	83	91	92	79	82	86	247
Net Interest Income	(2)	(8)	(8)	(6)	(16)	(17)	(16)	(17)	(15)	(17)	(14)	(46)
Other	71	2	1	2	2	2	5	3	1	3	1	5
Revenues	133	63	135	121	167	205	247	237	169	181	136	485
Production-related expenses	159	140	159	173	169	183	196	211	195	209	198	602
"Cash" pre-tax income	(26)	(77)	(24)	(52)	(2)	22	51	26	(26)	(28)	(62)	(117)

Source: Citi Research, PHH financial disclosures

– **PHH's reported gain-on-sale margin was 373 bps in 3Q13, but 158 bps was attributable to the value of servicing and cost of credit** – Using PHH's financial disclosures, we disaggregate the company's GoS margin into two categories: 1) the gain on the origination/sale of the loan itself – 215 bps in 3Q13; and 2) the gain attributable to servicing rights and other credit costs associated with the sale – 158 bps in 3Q13 (see Figure 32). The GoS margin attributable to servicing and/or credit costs includes: 1) 104 bps from the value of the servicing rights; 2) 62 bps from economic hedges, which are hedges on interest rate changes for loans held in warehouse; and 3) 8 bps of cost to repurchase non-performing loans PHH has sold. These gains/costs are not related to the origination and sale of the loan. The remaining components of the GoS margin represent gains from originating and selling the loan (eg 215 bps in 3Q13)

Figure 32. PHH's margin on the sale of mortgages was 215 bps in 3Q13, excluding the value of the servicing and credit costs

	1Q11	2Q11	3Q11	4Q11	1Q12	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13
<b>Value of Servicing and Credit</b>											
Base Servicing value	120	119	111	104	90	92	90	90	99	99	104
Economic hedge results*	50	16	5	54	105	30	69	64	89	76	62
Scratch and dent	-10	7	-2	-8	-7	-16	-25	-13	-20	-19	-8
Gain on Sale from servicing and credit	160	142	114	150	188	106	134	141	168	156	158
<b>Value of origination</b>											
Priced-in margin	127	122	178	182	274	289	330	316	273	249	211
Net reductions of gain on sale**	-170	-105	-113	-141	-127	-87	-84	-59	-64	-39	4
Gain on Sale from origination	-43	17	65	41	147	202	246	257	209	210	215
Net Gain on Sale	117	159	179	191	335	308	380	398	377	366	373

Source: Citi Research, PHH financial disclosures

\*Represents the change in value of mortgage loans, IRLCs and related derivatives, including the impact of changes in actual pull-through as compared to PHH's initial assumptions

\*\*Includes other amounts related to gain on sale on mortgage loans, including purchase premium, changes in cost-to-complete, etc.

■ **Mortgage origination can be positive cash flow if loans are sold servicing-released** – Origination can be a positive cash flow business if the mortgages are sold servicing-released, as the lender receives an upfront lump sum for the servicing rights. Lenders choose the sales method that best satisfies both their strategic objectives and best execution principles. For example, a correspondent lender has neither the desire nor the capability to service loans and thus sells mortgages servicing-released, but a larger lender like WFC would sell mortgages servicing-retained because they view the servicing asset as core to its relationship with the customer.

2) **...so the value of origination lies in generating the MSR, but servicing is less attractive for banks today due to higher capital reqs...** – While origination itself is a marginally profitable business for banks, they do it primarily to capture the value of the servicing. However, as discussed in the next section, higher costs of servicing and more punitive treatment of MSRs under Basel 3 capital rules have reduced the attractiveness of servicing for banks.

3) **...and thus the incentive for banks lies in cross-selling opportunities, which we view as a stretch** – Banks claim that originating a mortgage for a customer facilitates cross-selling revenues because other banking products can be sold to them. We are skeptical about this claim, as the Mortgage Bankers Association's 2Q13 Performance Report shows a net loss on mortgage origination of ~\$4,200 per loan, which is a high hurdle for cross-sell to cover. Furthermore, WFC, an industry leader in both mortgage originations and cross-selling, disclosed in an investor presentation that customers with a WFC mortgage only have 1-2 more WFC products than a non-WFC mortgage holder (see Figure 33), which makes us doubtful on whether cross-selling is truly a good reason to be in the mortgage business.

Figure 33. Wells Fargo's internal stats show cross sell potential from mortgage is limited

Retail Bank Households Home Ownership	Average Wells Fargo Products
Non-Homeowners	4.61 products
Homeowners with a competitor's mortgage	6.34 products
Homeowners with a Wells Fargo mortgage	7.57 products (excluding Mortgage)

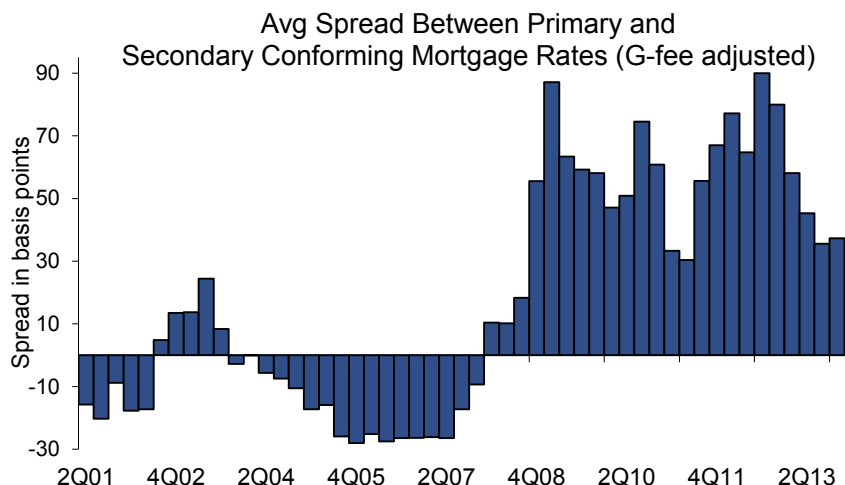
Source: WFC 2012 BAAB Presentation; data as of September 30, 2012

- **Banks also tout ability to refinance existing mortgage customers, but we see limited value other than extending the life of the MSR** – Banks claim that having an origination platform helps them refi existing mortgage customers. However, since the origination business is generally not priced for attractive returns on standalone basis, the real value lies in extending the life of the MSR.

**4) Record GoS margins caused origination cash flows to turn positive recently, but they will revert to more normal levels** – Origination cash flows briefly turned positive in mid-2012/early-2013 as GoS margins increased to record levels driven by industry origination capacity constraints as the refi boom hit its stride. Margins have been declining as origination volumes have fallen, which we expect to continue.

- **Over the last few years, capacity constraints led to historically wide GoS margins, which resulted in positive origination cash flow...** – Historically low mortgage rates in mid-2012/early-2013 fueled a refinancing wave which led to origination capacity constraints. As Franklin Codel (Wells Fargo's head of mortgage) noted during a May 2013 Citi conference, originators curbed the excess flow of applications by not lowering rates as much as they would have absent capacity constraints. In other words, originators managed excess volumes by maintaining wider GoS margins. This dynamic resulted in positive origination cash flows, as seen in PHH's results in 2Q12-4Q12 (see Figure 31).
- **...but declining origination volumes will intensify competition and result in continued margin compression near-term** –Declining origination volumes will lead to more competition in the industry, which will result in price competition as originators attempt to defend volumes. Using mortgage industry headcount as a rough proxy for industry competition, we observe that intense competition leading up to the crisis in 2004-2007 is associated with a period of very low GoS margins as measured by the primary-secondary spread.
- **Longer-term, normal GoS margins should settle at a higher level than in the past as higher costs and putback risk get priced-in** – Longer-term, we expect GoS margins to settle at higher "normal" levels than in the past as originators pass-through higher compliance and rep & warranty costs to borrowers.

Figure 34. Gain on sale margins remain significantly higher than pre-crisis levels



Source: Citi Research, Bloomberg, Bankrate monitor, Fannie Mae

Note: we calculate "Gain on Sale" as the difference between primary 30 yr fixed national avg rates and secondary 30-yr FNMA current coupon rates minus the avg g-fee (assume 25bps for 2010 and prior; 28bps for 2011; 38bps starting Apr 2012, 48bps starting Nov 2012, 60bps after Mar 2013).

Figure 35. We do not expect big changes to origination market share rankings

	1H13	2007 Pro-Forma	Mkt Share Gains
1 Wells Fargo	22.5%	11.1%	11.4 pts
2 JPM Chase	10.9	9.5	1.4 pts
3 BofA	5.2	15.9	-10.7 pts
4 Quicken Loans	5.0	0.9	4.1 pts
5 US Bank	4.1	0.7	3.4 pts
<b>Top 5 subtotal</b>	<b>47.7</b>	<b>38.1</b>	<b>9.6 pts</b>
6 Citi	3.9	3.0	0.9 pts
7 PHH Mortgage	2.6	0.8	1.8 pts
8 Flagstar Bank	2.3	1.1	1.2 pts
9 SunTrust	1.8	2.5	-0.7 pts
10 BB&T	1.8	0.5	1.3 pts
<b>Top 10 subtotal</b>	<b>60.1</b>	<b>46.0</b>	<b>14 pts</b>

Source: Citi Research, Inside Mortgage Finance

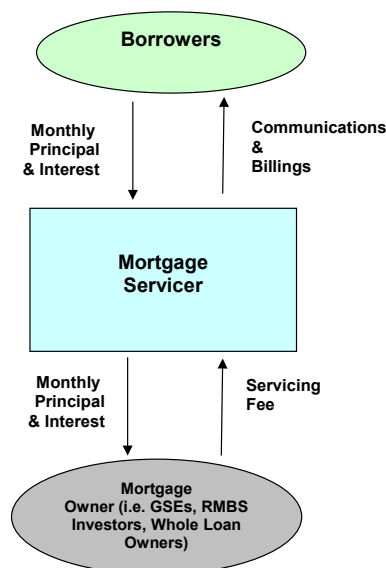
**5) Large banks will continue to dominate the majority of the QM market going forward; non-banks have opportunity to gain share in non-QM space** – We expect banks to continue to dominate in the QM space, but to de-emphasize non-core third-party origination channels. Thus we don't expect significant market share shifts from today (see Figure 35).

- **Banks will remain focused on QM** – We expect banks to focus their mortgage lending within the confines of the QM rule to their retail customers, de-emphasizing third-party originations.
  - **Outsourced fulfillment is an option for smaller banks that do not want an in-house mortgage banking operation** – For smaller banks it may not make sense to maintain an in-house mortgage banking operation. Outsourced fulfillment is a viable solution, as they do not consider mortgage an essential business but need to offer the product to customers. For example, CMA and KEY have outsourced their mortgage operations to PHH, which relieves them of the need to build and maintain an internal mortgage banking operation.
- **Non-banks have an opportunity to gain share in origination as banks pull back** – Having an origination arm is attractive to non-banks, particularly those that historically had an expertise in servicing because retail originations are the lowest cost way to generate MSRs. A number of non-bank servicers have been backward-integrating into retail mortgage origination – for example, Nationstar acquired Greenlight in Nov 2013 and Ocwen acquired Homeward in Oct 2012. We also believe non-bank niche lenders (potentially backed by private equity players) have an opportunity in the non-QM space if they can develop a model that appropriately prices for the litigation risk. For example, this space may be a natural fit for delinquent servicers that can develop robust predictive models that can forecast a borrower's propensity to default.



## Servicing

Figure 36. Diagram of mortgage servicing business



Source: Citi Research, company reports

A residential mortgage servicer acts as the primary interface with a borrower including collecting monthly mortgage payments and escrow funds such as property taxes and insurance. Importantly, when a loan becomes delinquent the mortgage servicer performs collection, loss mitigation and foreclosure activity. In exchange for the loan servicing, the mortgage servicer receives contractual fees of typically 25-50 bps of Unpaid Principal Balance (UPB). The primary costs include operating expenses (i.e. personnel costs) and funding servicer advances.

- **After a mortgage is originated, a mortgage company can keep or relinquish the right to service the mortgage** – After a mortgage is originated it typically is not retained on the balance sheet as an investment but is sold. The mortgage originator can choose to continue to own the right to service the mortgage or sell that right to a third party. By holding the servicing rights, the owner can earn the servicing revenue over the life of the loan.
- **Retaining the servicing asset maintains the relationship with the customer and creates opportunities to earn more revenue** – Banks typically sell the loans while retaining the rights to service the mortgage assets. This allows the bank to maintain the relationship with the customer (and cross-sell other products), earn additional income via loan servicing fees, and be in the pole position if the borrower eventually decides to refinance the loan (servicers usually have an advantage when customers refinance the mortgage loan).

**1) Returns on the servicing business for the banks have been reduced by higher capital requirements** – As we discuss in Force 3, higher capital requirements are reducing the profitability of the servicing business for the banks. Higher risk-weightings on MSRs are resulting in lower ROEs, which is causing banks to optimize servicing profitability by shedding delinquent/non-core servicing rights while smaller banks also see MSR sales as an avenue for capital relief.

- **MSRs now have a 250% risk-weighting under Basel 3 rules which has reduced ROEs on the servicing business from >40% to ~15%** – Under the final Basel 3 rules, MSRs receive a 250% weighting in the calculation of risk-weighted assets vs 100% under Basel 1. We estimate this has reduced ROEs on the servicing business from >40% to 13% (see Figure 37).

Figure 37. We estimate bank ROEs for servicing have fallen from 40% to ~13% due to higher costs and capital requirements

(\$ mil)	Bank - Basel 1	Bank - Basel 3	Comments
Servicing portfolio	10,000	10,000	
Capitalization rate	1.00%	1.00%	Estimated based on company disclosures.
MSRs	100	100	
Risk-weighting	100%	250%	Assumes MSRs in portfolio are <10% of B3 T1 Common and <15% when combined with DTA and Financial Institutions investments, resulting in 250% risk-weighting
Required equity at 8%	8.0	20.0	
Annual servicing rate (inc amortization & hedging costs)	0.20%	0.20%	Based on servicing/sub-servicing fees of ~30 bps in 2012 MBA/Stratmor study ex ~10 bps of hedging costs.
Efficiency ratio	75%	80%	Based on data from 2010 and 2012 MBA/Stratmor survey.
Net income @ 35% tax rate	3.3	2.6	
<b>ROE</b>	<b>41%</b>	<b>13%</b>	

Source: Citi Research, MBA/Stratmor surveys; company filings

“There continues to be a lot of pressure on financial institutions, a lot of pressure from a regulatory standpoint, from a customer-service standpoint, from a ... capital standpoint...The financial institutions are looking very hard at reducing their residential exposure and reducing their overall servicing portfolio, and we’ve been one of the big beneficiaries of that and we think that trend is going to continue.”

Jay Bray, CEO, Nationstar, speaking at KBW conference, June 2012

**2) Non-bank mortgage companies are well-positioned to take market share in delinquent/non-core servicing** – Higher capital requirements have reduced returns on the servicing business for banks, which is causing them to look for ways to optimize their servicing portfolios to maximize returns and use capital more efficiently. In contrast to the traditional bank servicing model which is better suited for environments of low delinquencies and defaults, the high-touch servicing model employed by Ocwen (OCN) and Nationstar (NSM) function well in environments characterized by elevated delinquencies, foreclosures, liquidation proceedings, and REO activity. Thus bank MSR sales have been centered around exiting certain products banks no longer continue to offer (eg WFC selling \$12 bil in reverse mortgage servicing) and getting rid of high-cost delinquent servicing (eg BAC). We have also seen smaller banks (eg Flagstar) selling MSRs for capital relief. Independent mortgage servicers have been the beneficiaries, as they are unencumbered by capital requirements and are free to grow their servicing portfolios as desired. As illustrated in Figure 38, the market share of NSM, OCN, and WAC over the last two years has quadrupled from ~3% in 4Q11 to ~12% in 3Q13.

Figure 38. There has been a clear shift in market share for servicing to non-banks over the past couple years

Q3 2013 "Pro Forma" Servicing Assets and Market Share

	Servicing	Market Share
1 Wells Fargo	\$1,844	18.8%
2 Chase	\$1,037	10.6%
3 Bank of America	\$891	9.1%
<b>4 Ocwen (A)</b>	<b>\$485</b>	<b>5.0%</b>
<b>5 Nationstar (B)</b>	<b>\$415</b>	<b>4.2%</b>
6 Citi	\$407	4.2%
7 US Bank	\$275	2.8%
<b>8 Walter (C)</b>	<b>\$271</b>	<b>2.8%</b>
9 PHH	\$228	2.3%
10 SunTrust	\$140	1.4%
<b>Total 1-4 Family Mortgages</b>	<b>\$9,790</b>	<b>100.0%</b>

A - Includes est's for the OneWest and Green Point

B - Includes est's for the BAC PLS and other pending deals.

C - Includes est's for Ever Bank and other pending deals

Source: Citi Research, Inside Mortgage Finance, company reports

Q4 2011 Servicing Assets and Market Share

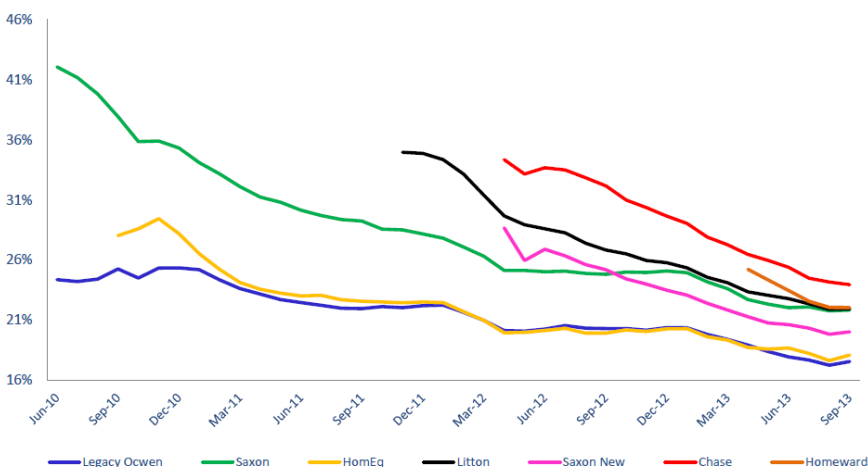
	Servicing	Market Share
1 Wells Fargo	\$1,822	17.9%
2 Bank of America	\$1,768	17.4%
3 JPMorgan	\$1,160	11.4%
4 Citi	\$534	5.3%
5 Ally	\$379	3.7%
6 US Bank	\$235	2.3%
7 PHH	\$182	1.8%
8 SunTrust	\$157	1.5%
9 PNC	\$131	1.3%
10 One West	\$126	1.2%
...		
<b>11 Nationstar</b>	<b>\$107</b>	<b>1.0%</b>
<b>12 Ocwen</b>	<b>\$100</b>	<b>1.0%</b>
<b>16 Walter</b>	<b>\$86</b>	<b>0.8%</b>
<b>Total 1-4 Family Mortgages</b>	<b>\$10,167</b>	<b>100.0%</b>

- **Non-banks either sub-service the portfolio for a fee or buy the MSR** – For banks looking to sell MSR portfolios, non-bank servicers can either act as a 1) sub-servicer where they service the portfolio for a fee but don't actually own the MSR or 2) buy the MSR portfolio from the bank.
- **Delinquent servicing is costlier and credit-impaired borrowers are not core long-term customers for banks, prompting delinquent MSR sales...** – Delinquent loans are more costly to service and credit-impaired borrowers are not considered core long-term customer for banks. Thus we believe banks would prefer to reduce their servicing expenses and re-focus their operations on core customers rather than delinquent/non-core customers. Delinquent loans require higher levels of staffing to handle the loss mitigation efforts and often require

servicers to advance payments for principal & interest (P&I) to the MBS trusts and other payments to protect the loan holder's interests such as real estate taxes and homeowners insurance. According to Nationstar (NSM), it is 90% cheaper to service a current loan compared to a delinquent loan. We believe the non-bank servicers can achieve higher returns on troubled/highly delinquent portfolios primarily due to 1) cost advantage compared to the large banks and 2) more specialized business model that is specifically geared to deal with troubled borrowers.

- **Non-banks have a cost advantage over banks in servicing delinquent loans** – The high-touch servicing model employed by OCN and NSM functions well in environments characterized by elevated delinquencies, foreclosures, liquidation proceedings, and REO activity. This is in contrast to traditional bank servicers that primarily focus on conventional, performing mortgages and are better suited for environments of low delinquencies and defaults. OCN notes that they have a 70% cost advantage to service a delinquent loan compared to the rest of the servicing industry (\$269 cost per non-performing loan vs. industry average \$875) due to its off-shoring servicing model (primarily India) and strong technology platform.
- **Non-banks servicers benefit from having a more specialized/focused business model** – Non-bank servicers employ servicing models that are more suited to deal with troubled borrowers. The rapid growth of the non-banks servicers has partly been a function of their strong servicer performance and high touch servicing model, which emphasizes borrower interaction to improve loan performance and minimize defaults and foreclosures. Non-bank servicers have shown the ability to reduce delinquencies as evidenced by large improvements in the delinquency ratios after servicing portfolios were acquired. Below we show an analysis of 90+ day delinquencies for different portfolios acquired by OCN over the last few years.

Figure 39. Ocwen's delinquency percentage (90+ Days) by portfolio



Source: Ocwen

- **We do not believe that non-banks have as much of an advantage on more prime/newly originated mortgage loans** – We view the large banks as being very efficient servicing conventional performing mortgage loans with routine account management and delinquencies as they are able to use their low cost of funds to cheaply run the business.
- **We estimate that non-banks can generate ROEs of ~20% on troubled/highly delinquent loan servicing** – In Figure 40, we show estimated ROEs for non-bank servicers. Based on the analysis, we estimate a ~20% ROE. Non-bank servicers can potentially achieve even higher ROE's by shifting the responsibility of servicing advances to 3<sup>rd</sup> parties. For example, NSM recently entering into such an agreement (see our [recent note](#)) with New Residential (NRZ) and Ocwen has a similar agreement with Home Loan Servicing (HLSS). Also, keep in mind that non-bank servicers are not subject to the same Basel capital rules as the banks.

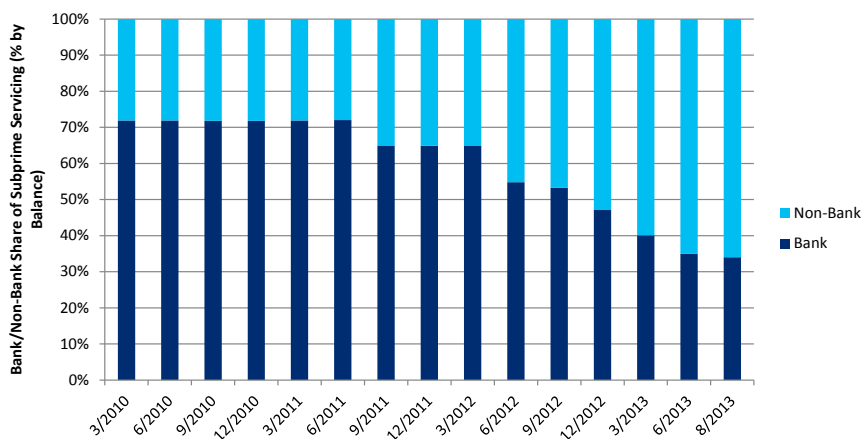
Figure 40. Non-banks can generate an attractive ~20% ROE on troubled/highly delinquent loan servicing

(\$ mil)	Non-Bank	Comments
Servicing portfolio	10,000	
Capitalization rate	0.57%	Assume ~1.9x estimated contractual base servicing fees of a hypothetical troubled/highly delinquent servicing portfolio (~30bps).
MSRs	57	
Advances	300	Assumes 3% advance rate on servicing portfolio.
Non-banks - equity on MSR	19.9	Assumes 65% co-investment by capital partner (ie 35% of \$57 mil in MSRs, or ~2.9:1 leverage).
Non-banks - equity on advances	30.0	Assumes 10:1 leverage after advance debt.
Total non-bank equity	49.9	Total non-bank equity = Equity on MSRs + Equity on Advances
Annual servicing rate (inc amortization & hedging costs)	0.30%	Estimate based on a hypothetical troubled/highly delinquent servicing portfolio
Efficiency ratio	50%	Estimated based on profitability of a hypothetical troubled/highly delinquent servicing portfolio.
Net income @ 35% tax rate	9.8	
<b>ROE</b>	<b>20%</b>	

Source: Citi Research, company filings

- **Non-banks have been gaining share in credit-sensitive servicing** – Although the subprime slice of the mortgage market has been shrinking post-crisis, we use subprime servicing market share as a proxy to show that non-banks have been gaining share from banks in credit-sensitive servicing over the last 3-4 years. As we show in Figure 41, the non-bank share of subprime servicing has shifted from ~28% in the beginning of 2010 to 66% in 2013.

**Figure 41. Market share of non-agency subprime servicing has shifted to non-banks over the last 3-4 years**



Source: Citi Research, CoreLogic

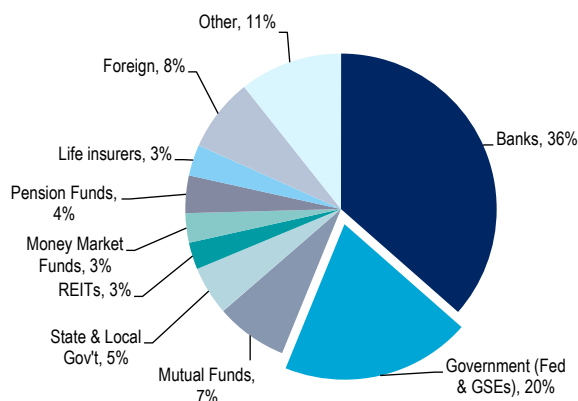
- Non-bank servicers identify a \$1 tril MSR acquisition opportunity over the next 2-3 years** – The major non-bank servicers currently quote an active acquisition pipeline of \$400+ bil and longer-term opportunities of \$1 tril. For example, at a recent investor conference, NSM said that it hoped to purchase \$25-50 bil of MSRs over the next six months and Walter (WAC) recently announced that it will acquire ~\$30B from a large national depository. The math behind the \$1 tril long-term opportunities is typically derived as out of ~\$10 tril residential mortgage market, there are roughly \$1 tril of delinquent loans. A typical servicing loan sale can contain ~25% delinquency rates (a sale usually is not made up of a pool of 100% delinquent loans) or a roughly \$4 tril potential pool. Then it is assumed that about 25% of the population is actually sold and you get a ~\$1+ tril of potential credit sensitive servicing assets sold. To arrive at a higher level of sales you could also layer in potential exits of small-to-mid sized servicers and sales due to Basel capital requirements. Recent press reports indicate that large banks such as JPM (\$70 bil UPB) and WFC (\$40 bil UPB) are in the market looking to sell MSRs.

## Credit Risk Management

We broadly define credit risk management as bearing the default risk on mortgages and being able to earn an adequate return for taking that risk. Banks can manage this risk and enhance profitability through the decision to hold loans on balance sheet or sell and purchase agency MBS. Mortgage insurers can create value by effectively analyzing credit risk and charging the appropriate premiums to insure it.

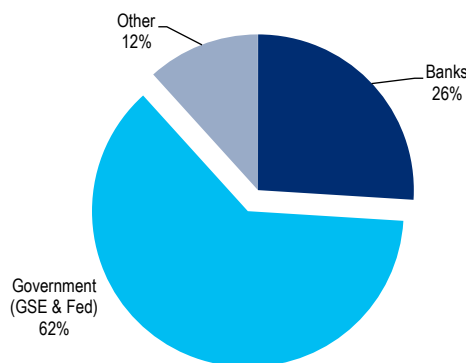
**1) Credit risk management is becoming more attractive for banks as g-fees have increased** – Historically, the 20-25 bps g-fee charged pre-crisis by the GSEs to insure credit risk was below what the private market would charge, and as a result, banks were willing sellers to the GSEs. G-fees are now at ~60 bps today, which is more in-line with private market levels and thus has become more attractive for the banks to hold mortgages on balance sheet and bear the credit risk themselves as the government reduces its role in the market. As of 3Q13, the government (GSEs and Federal Reserve) held only 20% of the mortgages, agency MBS, and non-agency MBS outstanding, but held 62% of the credit risk due to the insurance they provide on agency MBS (see Figure 42 and Figure 43).

**Figure 42. Of the \$10 trillion mortgage market, the government only holds 20%...**



Source: Citi Research, Federal Reserve Flow of Funds, FDIC, SIFMA, Haver, FNMA and FRE filings, as of 3Q13

**Figure 43. ...but holds 62% of the credit risk via credit guarantees on agency MBS outstanding**



Source: Citi Research, Federal Reserve Flow of Funds, FDIC, SIFMA, Haver, FNMA and FRE filings, as of 3Q13

■ **We est banks can earn a ~12-13% ROE by retaining a 5/1 ARM on balance sheet** – As shown in Force 1, banks can earn a decent ROE of ~12-13% by bearing the credit risk of a 5/1 mortgage by holding it on balance sheet.

**2) The credit risk of mortgages is generating attractive returns relative to other asset classes** – The recent Freddie Mac STACR deals highlight how attractive the credit risk of mortgages currently is. Based on the analysis below from Citi Research's non-agency MBS team, the 1<sup>st</sup> mezzanine tranche of the deals, has a relatively higher yield (3.67% on a loss-adjusted basis) relative to other asset classes of similar credit quality, such as Investment Grade Corporate bonds, BBB Corporates, re-securitized prime MBS securities. The 2<sup>nd</sup> mezzanine tranche is also attractive (loss-adjusted yield of 7.56%) relative to other high yield assets with equivalent levels of credit risk.

Figure 44. The credit risk of mortgages sold in the recent STACR deals exhibited attractive yields vs assets with equivalent levels of credit risk.

Tranche M1			Tranche M2		
Sector	Average Yield (%)	Life (Yrs)	Sector	Average Life Yield (%)	Yrs
IG Corporates 1-5 Yr	3.1	1.66	High Yield	6.8	6.03
BBB Corporates 1-5 Yr	3.1	2.08	High Yield, BB	7.3	4.92
Prime Front Pay Re-REMIC	2.0 - 4.0	3.0 - 3.5	High Yield, B	6.5	6.05
			Prime Hybrid ARM PT	7.0 - 9.0	5.0 - 6.0
<b>STACR 2013-DN1 M1</b>	<b>3.6</b>	<b>3.67</b>	<b>STACR 2013-DN1 M2</b>	<b>9.7</b>	<b>7.56</b>

Source: Citi Research, The Yield Book

Note: Yields shown on Prime Front Pay Re-REMIC, Prime Hybrid ARM PT and the STACR bonds are loss adjusted yields

Source: Citi Research

**3) Private mortgage insurance may have a \$1.2 bil annual revenue opportunity coming in and serving the parts of the market the FHA has exited...** – Reform and policy goals will force the FHA and other low income housing finance initiatives, such as the Market Access Fund, to focus on lower income borrowers, while private insurance focuses on higher income, more creditworthy borrowers the FHA no longer serves. Figure 47 shows, FHA has accounted for ~20% of originations post-crisis, up from 3-5% pre-crisis. In Figure 45, we estimate that if FHA loans return to 5% of originations vs roughly 20% today, the resulting 14% of market share ceded would be a \$1.2 bil revenue opportunity.

- **...but it will also restrict credit, limiting potential gains** – FNMA/FRE require borrowers with an LTV above 80% to purchase mortgage insurance. However, mortgage insurers will not be able to capture all of the opportunities ceded by the FHA, as some borrowers who would have been able to receive financing under an FHA loan, will be restricted from getting financing due to DTI requirements set by the GSEs. We estimate only 77% of loans made by the FHA today would be eligible for FNMA/FRE based on the 45% DTI requirement the GSEs have set.

Figure 45. A scale back by the FHA could potentially increase the revenue pool for private mortgage insurers by ~25%

2014 Estimated Freddie Mac Mortgage Industry Originations (bils)	\$ 1,410
Current FHA Share of Mortgage originations	20%
Pre-crisis market share (2007)	5%
Estimated Origination volume ceded by FHA during scale back (bils)	\$ 212
% with DTI < 45% (eligible for FNMA/FRE)	77%
Average Annual Mortgage Insurance Premium	72 bps
<b>Annual revenue opportunity for private mortgage insurance (\$bils)</b>	<b>\$ 1.2</b>
2012 Premiums written for the Mortgage Insurance Industry (bils)	\$4.3
<b>% Industry Revenue Opportunity As FHA scales back</b>	<b>27%</b>

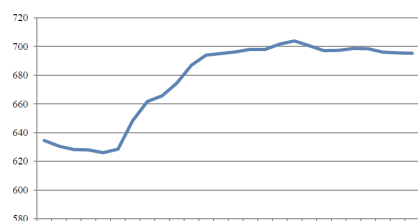
Source: Freddie Mac, Inside Mortgage Finance, Bankrate.com, US Treasury, Citi Research

Note: % with DTI<45% based on analysis of loan level data for GNMA pools issued in Aug, Sept, and Oct 2013, using the total of original loan amounts with DTIs below 45% as a percentage of the total pool. Est average annual insurance premium based on the midpoint of approximate range of PMI fees from BankRate of 0.3% to 1.15%.



- **It is unclear if GSEs would originate a large volume of loans backed by private insurance due to counterparty risk concerns...** – The private mortgage insurance industry consists of 7 main players post-crisis. Three industry participants pre-crisis have exited the market as losses related to claims on defaulted loans eroded their capital bases and effectively led them to leave the industry. With the government standing between investors and mortgage insurers, the government stands to bear a lot of the risk and the FHFA is planning to release new guidelines soon for insurers that do business with the GSEs, including a minimum risk-to-capital threshold of 18:1. It remains to be seen if the government would be comfortable making these loans if they need to be backed by PMI.
- **...And concerns around rescission risk** – GSEs will also be concerned about rescission risk, or the risk an insurance company will deny an insurance claim due to violations of underwriting guidelines. According to company disclosures from Radian and MGIC, rescission rates on insurance claims post-crisis climbed from 10-15% in 2008 to 25-30% at their peak in 2011.

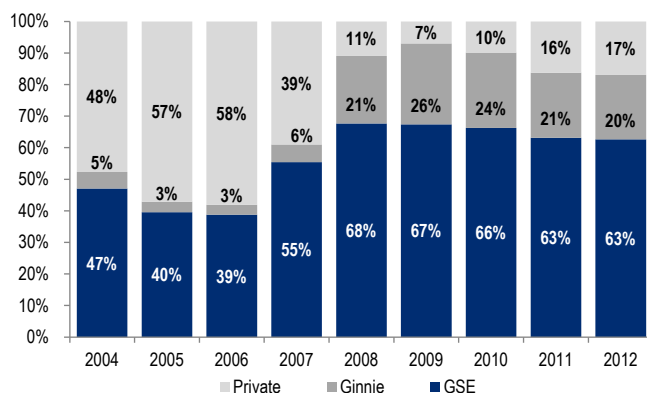
**Figure 46. The FHA has expanded beyond low income borrowers, which can be seen by higher FICO scores from 1Q07 to 2Q13**



Source: Citi Research, US Department of Housing and Urban Development, 2Q13 Report to Congress

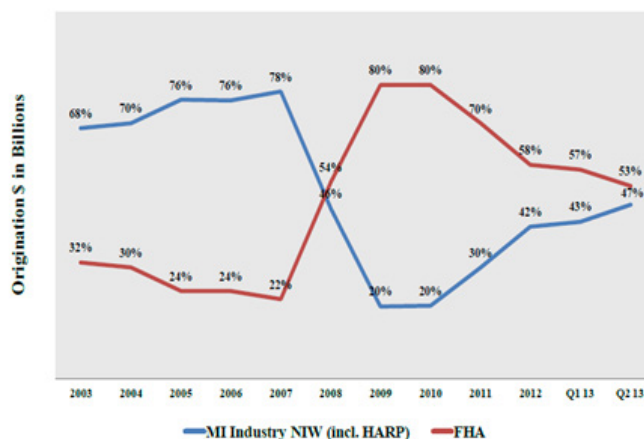
- **The FHA was able to capture market share thru low downpayments and low insurance premiums ...** – Post-crisis, the FHA, which previously focused only on insuring the credit risk of low income borrowers, began to expand to more creditworthy borrowers, generating more premiums to cover losses on troubled loans. As shown in Figure 46, the average credit score of FHA borrowers rose from ~630 to ~700. The FHA's products were attractive to borrowers who wanted to put as little money down as possible, as zero downpayment products offered pre-crisis were no longer available. Also, the FHA had very low premiums relative to private mortgage insurers, who were subsequently raising premiums to cover their own losses on troubled loans.

**Figure 47. The FHA captured market share post-crisis thru low downpayments, low premiums, and expanding its customer base...**



Source: Citi Research, Inside Mortgage Finance  
Note: annual mortgage originations by type

**Figure 48. ...But more recently, the FHA appears to be scaling back its size, as market share has declined from 80% in 2010 to 53% in 2Q13**



Source: Radian  
Note: based on net insurance written (NIW) for the MI industry

- **...but the FHA already appears to be scaling back, as market share has declined from 80% in 2010 to 53% in 2Q13 due to premium increases** – The FHA's share in the market for insured loans has declined from 80% in 2009 to 53% in 2Q13 (see Figure 48) as a series of premium increases (for example, an increase in the upfront mortgage insurance premium to 1.75% in 2012 vs 1.00% previously, and an increase in the annual premium of 35-60 bps over the last two years) have made FHA insurance less competitive. In addition, beginning in 2013 the FHA also now requires borrowers to pay mortgage insurance for a set term (either 11 years or the life of the loan vs previously borrowers were only required to pay the premium until the loan fell below 78% of the principal balance) and also recently lowered the loan limit to \$625.5k as they pull back from lending to higher income borrowers. As a result, private insurers are seeing an increase in market share, accounting for 20.4% of GSE business in 3Q13 vs 16.7% in 2Q13.
- **The proposed FHA Solvency Act would increase the FHA's premiums and make the market for insurance more competitive** – The recently proposed FHA Solvency Act passed by the Senate Banking Committee in July and awaiting a Senate vote, would increase the required minimum annual mortgage insurance premiums charged by the FHA to improve its financial position. Increased premiums will make the FHA less competitive relative to private mortgage insurance and reduce the market share of the FHA.

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## **Appendix: Details on GSE Reform Proposals and Ability-to- Repay Rule**

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## Details on GSE Reform Proposals

■ **Corker-Warner Housing Finance Reform and Taxpayer Protection Act** – The bill was introduced on June 25, 2013 by a bipartisan group of five Democrats and five Republicans from the Senate Banking, Housing, and Urban Affairs Committee. The bill is expected to go through a series of hearings this fall before being presented to the Senate for a vote. Key elements include:

- **Envisions well-capitalized bond guarantors providing 10% capital to bear first risk of loss** backed by private capital that guarantee principal and interest payments to MBS holders. We note that the bill's definition of "bond guarantors" is not clearly defined, but specifically mentioned that banks and issuers are not necessarily excluded.
- Establishes FMIC as successor to FHFA to provide a security-level catastrophic re-insurance
- Dovetails with FHFA/DeMarco's plans for a single securitization platform and pilot credit-risk transfer transactions
- **Ratchets down the single-family conforming loan limits** by roughly \$42,000/year for six years from \$625,000 down to \$417,000
- Continues to wind down the GSEs' investment portfolios at 15% per year until liquidation
- **"Moral hazard" is the main criticism of the Corker-Warner Proposal** – Any type of govt backstop will result in moral hazard. Opponents of the Corker-Warner proposals believe that a fully-privatized housing finance system will be more stable than government-supported programs because private lenders would simply be unwilling to make loans to borrowers with weak credit histories. Additionally, Congress will always want to widen the definition of what is insured through the FMIC.

■ **Representative Hensarling's Protect Taxpayers & Homeowners (PATH) Act** – The bill was introduced by House Republicans and passed the House Financial Services Committee on July 24, 2013 and is likely to pass the Republican-controlled House when it comes to the floor the fall of 2013. However, Representative Hensarling will need to push hard to garner support for his proposal because the "no-govt-backstop" idea is fairly ideological and right-leaning. As it stands, the bill is opposed by the real estate industry, nearly all Democrats, and at least a handful of Republicans. Key elements of the PATH Act include:

- **Removes all govt insurance on mortgages** except those insured by the FHA and similar agencies
- Ends conservatorship of the GSEs over five years
- Establishes a market utility securitization platform that is regulated by the FHFA and creates MBS without guarantees from the U.S. government
- **Limits the FHA's role** by raising down payment requirements and increasing the borrower's exposure to credit risk on their mortgages

- Postpones implementation of Basel 3 rules for two years and repeals the 5% risk retention rule on securitizations in Dodd-Frank
- **Main criticism is that PATH Act would significantly reduce access to 30-yr fixed-rate mortgages** – Opponents of the PATH Act claim that access to 30 yr fixed rate mortgages would be significantly diminished under the proposal as few private investors would be willing to take on the credit and interest rate risks at anywhere near today's mortgage rates.

## Details on Ability-to-Repay/QM Rule

- **Ability-to-Repay requires lenders to consider many factors before granting a mortgage** – The Ability-to-Repay rule requires lenders to make a good faith determination that the borrower is able to repay the mortgage before granting the loan by considering the borrower's income and financial condition and whether can repay the mortgage based on principal and interest payments over the long term (ie can't use teaser rates). Specific elements that must be considered (and verified with third-party info) include:
  - Current or reasonably expected income or assets;
  - Current employment status;
  - The monthly payment on the mortgage as well as other mortgage-related obligations, e.g. property taxes or mortgage insurance premiums;
  - The monthly payment on other loans and recurring material living expenses that the creditor was aware of or should have been aware of;
  - Other current obligations, e.g. alimony and child support;
  - Monthly debt-to-income ratio (i.e. total debt over gross income) or residual income (i.e. income after debt obligations); and
  - Credit history
- **Two types of legal protection granted by QM: conclusive presumption for prime loans vs rebuttable presumption for subprime loans** – The Dodd-Frank Act did not specify whether the QM presumption of compliance was conclusive (which creates a safe harbor) or rebuttable. The CFPB clarified this by providing a safe harbor for QMs that are not higher-priced (ie up to 1.5 pts above the prime rate) and a rebuttable presumption for QMs that are higher-priced (ie more than 1.5 pts above the prime). Thus the Ability-to-Repay rule separates QM into two definitions depending on whether the loan is a "prime" or "subprime" mortgage.
  - **"Conclusive presumption" safe harbor for prime mortgages offers highest level of legal protection** – QMs with lower interest rates ( $\leq 150$  bps over Prime) fall under the "conclusive presumption" safe harbor provision. In this case if the loan goes bad, the lender will be deemed to have legally satisfied the ability-to-repay requirements and is shielded from certain legal liabilities, although consumers can still legally challenge whether the loan originally met the definition of a QM.

- **“Rebuttable presumption” for subprime loans** – Loans that meet the requirements of a QM but have higher interest rates (>150 bps above Prime) are granted a “rebuttable presumption” QM. In such instances, if the loan goes bad, the lender has a presumption of compliance but the borrower can still rebut the presumption and can argue that the lender did not properly apply the ability-to-repay rule (by showing that at the time of loan origination, the borrower’s income and debt obligations left insufficient residual income or assets to meet living expenses).
- **Certain community development/low-income lending programs and small creditors are exempt from ability-to-repay underwriting requirements** – Lenders extending mortgages under community development and low-income housing programs are exempt from the Ability-to-Repay requirements. Also exempt are small creditors (with less than \$2 bil in assets and originating less than 500 mortgages per year) if they retain the mortgages on balance sheet.
- **Refinance of a risky loan can be streamlined** – In the event of consumers trying to refinance a risky loan (interest only, negative amortization, or adjustable rate) to a more stable loan, the full ability-to-repay underwriting process is not required.
- **HUD’s finalized QM definition makes FHA loans a permanent exemption** – In Dec 2013, HUD finalized its QM rule, which makes FHA loans permanently exempt from the Ability-to-Repay rule. HUD’s QM definition was largely consistent with the CFPB’s definition with the following exceptions:
  - HUD’s definition allows DTIs over 43% (above the CFPB’s cap)
  - The cut-off for “conclusive presumption” vs “rebuttable presumption” is: 115 bps above Prime + ongoing Mortgage Insurance Premium rate
- **Certain community development and small non-profit lenders are exempt from ability-to-repay requirements** – Under the Ability-to-Repay amendments released in May 2013, lenders designated as Community Development Financial Institutions by the Dept. of Treasury or as either Community Housing Development Organizations or Downpayment Assistance Providers of Secondary Financing by the Dept. of HUD are exempt from the ability-to-repay requirements. The amendments also exempt non-profit organizations that extend credit no more than 200 times annually, provide credit only to low-to-moderate income consumers, and follow their own written procedures to determine consumers have a reasonable ability-to-repay their loans.



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## Appendix A-1

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Data current as of 31 Dec 2013

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