

Written Testimony of Mark Zandi
Chief Economist and Co-Founder Moody's Analytics

Before the Senate Banking Committee

"Essential Elements of Housing Finance Reform"

September 12, 2013

The nation's housing finance system is dysfunctional and should be reformed.¹ Since the government took over Fannie Mae and Freddie Mac during the financial collapse five years ago, effectively nationalizing the nation's housing finance system, nothing meaningful has changed. The government still makes nearly nine of every 10 U.S. mortgage loans.² This is bad for both taxpayers and homebuyers.

As policymakers decide how to reform the housing finance system, it is critical that the future system achieves the following goals:

- *Stability.* The future housing finance system must be resilient to crises. Financial market panics and the failure of private financial institutions should not impair the flow of mortgage loans. Households and investors must be confident that they can finance properties, and buy and sell securities under all economic conditions.
- *Liquidity.* The system must be sufficiently deep, standardized and transparent to attract a wide range of global investors and to operate efficiently. The system must be able to provide desirable mortgage products such as long-term, fixed-rate fully pre-payable loans to creditworthy borrowers under all market conditions.
- *Access and equity.* The system must allow all creditworthy borrowers a chance to obtain mortgage loans they can repay under normal life circumstances. Entities operating in the system must serve all qualified mortgage applicants without regard to race, color, national origin, religion, sex, familial status, or disability.
- *Affordability.* The system must provide support to expand access to affordable mortgage financing and for affordable rental housing, explicitly and on-budget.
- *Taxpayer protection.* The government's role in the housing system must be explicit and transparent, with significant private capital at risk ahead of taxpayers. Premiums to cover the government's risk should be on-budget, and subsidies to ensure the system meets other public purposes should be funded from dedicated fees.
- *Market-driven.* The current outsize government role in the system should recede as private capital returns. Private market participants with their own capital at risk should be primarily responsible for allocating resources between housing and other activities. The system should allow entry and innovation by new participants of all sizes and ensure that financial institutions in the new system are not too big to fail.

To achieve these goals, the future housing finance system should embody a number of essential elements:

- *Catastrophic government backstop.* The federal government must provide an explicit catastrophic backstop to the future housing finance system. Private investors should provide the first-loss capital supporting the system, but there should be a government backstop in case of a catastrophic financial crisis. That is, under almost all circumstances, private investors shoulder losses when mortgages default. But during rare, catastrophic situations such as the Great Recession, when mortgage losses wipe out private capital, the government should ensure that mortgage lending is uninterrupted. This is a hybrid housing finance system.

A hybrid system will preserve the long-term fixed-rate mortgage as a mainstay of U.S. housing, and it will ensure that affordable mortgage loans are available to most middle-income Americans through good and bad times. Taxpayers backstop the system, but it should be designed so that mortgage borrowers bear the ultimate cost.

- *Substantial private capital.* A substantial amount of first-loss private capital should stand in front of the government's catastrophic backstop. A good benchmark for the appropriate amount of private capital is the amount of losses suffered in the Great Recession. This was the proverbial hundred-year flood. Fannie Mae, Freddie Mac, and the private mortgage insurers will ultimately have a combined loss rate of between 4% and 5% resulting from the recession. This would be a conservative capitalization rate in the future system since regulation would demand that guaranteed mortgages be of higher quality than those purchased by Fannie and Freddie before the recession.
- *Varied sources of private capital.* The future housing finance system should attract varied sources of private capital to bear risk ahead of the government and to protect taxpayers. At the level of individual mortgages, private capital sources should include homeowners' down payments and the capital of any private mortgage insurers attached to the loan. At the level of the mortgage-backed security, capital sources should include, but not be limited to, the capital of the mortgage guarantors, risk retention by mortgage issuers, and the capital put at risk by global investors who take on housing risk from mortgage guarantors. This risk transfer could take place in a variety of ways, including through nonguaranteed tranches of guaranteed MBS, credit-linked notes, and credit default swaps.
- *Strong regulator.* To ensure the integrity of the housing finance system, it should be overseen by a strong regulator, fashioned along the lines of the FDIC. The regulator will ensure that private participants in the system are well-capitalized and that the mortgages receiving the government backstop are of high quality. The regulator's role in the housing finance system would be similar to the FDIC's role in ensuring the integrity of the nation's banking system. It would manage an insurance fund, funded by mortgage borrowers, to pay for any future costs that the government bears backstopping the system.

- *Common securitization platform.* A government-run common mortgage securitization platform would leverage current efforts by the Federal Housing Finance Agency to develop a single securitization platform for Fannie and Freddie securities. The platform would be used for all non-Ginnie Mae government-guaranteed securities and, although not required, could be used for nonguaranteed securities. A common platform would result in greater standardization, benefit from significant economies of scale, and provide a more liquid market for MBS, to the benefit of both investors and homeowners. A common security platform would likewise make it easier to modify loans if needed during future housing downturns, and allow for a “to-be-announced” trading market that remains liquid and makes it easier for originators to offer rate-lock commitments. Loans that use the securitization platform should be covered by a uniform servicing standard, encouraging prudent underwriting and aligning investor and borrower interests.
- *Competitive and independent mortgage guarantor market.* Mortgage guarantors providing capital to the housing finance system should be independent from large institutions that originate mortgage loans. This is necessary to impede vertical integration in the system, which would restrict entry of new sources of private capital and stifle competition. This would also facilitate better risk management, as both originators and guarantors would assess the risk of the mortgage loans and securities they are originating and securitizing. A sufficient amount of private capital should be forthcoming to the new housing finance system despite this line between large mortgage originators and guarantors.
- *Equal access and affordability.* All creditworthy borrowers and small lenders should have equal access to the government backstop. With so many communities devastated by the foreclosure crisis and so many family balance sheets impaired by the economic dislocation of the last five years, private markets alone may prove reluctant to serve all those able to manage prudent mortgages made on sustainable terms. The future housing finance system should provide transparent on-budget mechanisms and funding to support access to affordable housing, for both owners and renters. Small mortgage lenders should also have unfettered access to the government backstop. Without that access, smaller urban, rural and niche markets served by these lenders may not have the same access to affordable mortgage loans.
- *Seamless Transition.* Housing finance reform will not succeed without a smooth transition from the current, largely nationalized, housing finance system to the future hybrid system. The transition must not hinder the housing and economic recoveries, and it must protect holders of legacy Fannie and Freddie mortgage and debt securities and ensure that taxpayers are finally made whole for the support they provided during the crisis.

The transition must also resolve the fate of Fannie Mae and Freddie Mac. While few wish to return to the old system, which was dominated by these thinly capitalized, too-big-to-fail behemoths, the consensus stops there. A desirable approach would be for the government to put Fannie and Freddie into receivership, and to strip them of their key assets. They would then be re-chartered as new private mortgage guarantors, able to license back these assets from the government receiver. Their operations would not be disrupted, ensuring that the mortgage market functioned smoothly through the transition. But to level the competitive playing field, any other new guarantors could also license the same key assets from the receiver. This would facilitate easy entry into the guarantor market and thus competition.

Decisions made about the future of the mortgage finance system will affect U.S. homeowners and the broader economy for decades. Success will depend on striking the appropriate balance between the benefits of the private market and the backstop of the federal government. Finding the right balance will result in a stronger housing market, a more stable financial system, and a healthier economy.

Inaction also represents a policy decision, since leaving Fannie Mae and Freddie Mac in conservatorship means the effective nationalization of the U.S. housing finance system. Such a course would penalize American families looking to buy homes and leave taxpayers exposed to excessive housing risk. Housing finance reform is a vital priority for public policy.

Catastrophic government backstop

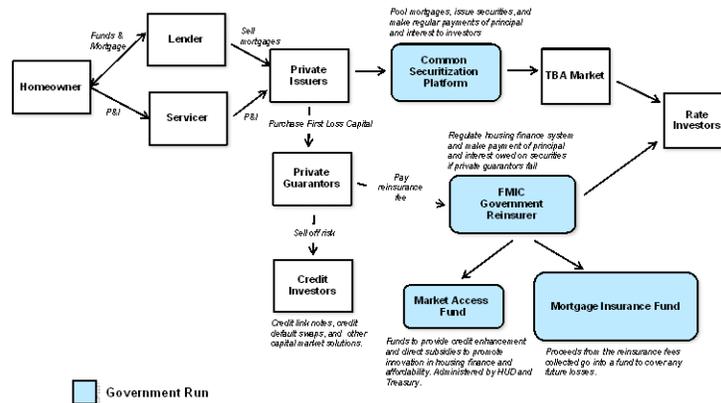
Much of the housing finance reform debate has focused on the system's end state—whether the housing finance system should be privatized, remain effectively nationalized as it is today, or be a hybrid with substantial private capital and a catastrophic government backstop.

While there are advantages and disadvantages to any housing finance system, a hybrid system is the most desirable option. In a hybrid system, private capital is responsible for losses related to mortgage defaults, but in times of financial crisis, when private capital is insufficient to absorb those losses, the government steps in. Mortgage borrowers who benefit from the government backstop pay a fee to compensate the government for potential losses.

To be eligible for the government's catastrophic guarantee, MBS must include only high-quality mortgage loans, and substantial private capital must be able to take losses before the guarantee kicks in.³ To ensure that the private institutions and investors follow the rules, a government regulator—call it the Federal Mortgage Insurance Corp.—oversees the housing finance system (see Chart 1). The FMIC also maintains an insurance fund—the Mortgage Insurance Fund—to cover any losses the government may incur in a catastrophic situation. The FMIC charges a guarantee fee, or g-fee, to fund the MIF and oversee the housing finance system.⁴ To obtain the government guarantee, mortgage-backed securities must also use a common, government-run securitization platform.⁵

Under most proposals for a hybrid system, between a third and half of all mortgage loans will be covered by this catastrophic government backstop.

Chart 1: Future Housing Finance System



As in the current system, mortgage originators, servicers and MBS issuers could be affiliated with each other. A new addition would be private MBS guarantors: monoline companies, backed neither explicitly nor implicitly by the government. These guarantors would be required to maintain capital and liquidity similar to major banks. They would purchase catastrophic insurance from the government, so that the government would repay MBS investors if the guarantors became insolvent. The guarantors themselves could fail, however.

A hybrid system would be resilient to financial and economic crises and would mitigate the impact if crises did occur. The system would preserve the vital “to-be-announced” or TBA market and the long-term, fixed-rate, fully pre-payable mortgage as a mainstay of U.S. housing. It would ensure that affordable mortgage loans are available to most middle-income Americans through good and bad times. Taxpayers would backstop the system, but it would be designed so that borrowers bear the ultimate cost. It would also be designed to allow small mortgage lenders easy access to the government guarantee and promote affordable single-family and rental housing, since qualifying multifamily mortgages could also be eligible for the government guarantee.⁶ A hybrid housing finance system has the broadest political backing: Senators Bob Corker (R-TN) and Mark Warner (D-VA) recently introduced legislation to establish a hybrid system, and President Obama has expressed support.⁷

Substantial private capital

The future hybrid finance system’s capital requirements will depend on a range of factors, including mortgage origination volume, the share of originations receiving the government guarantee, and the amount of private capital needed to stand in front of the guarantee. Based on the assumptions described below, the system will require \$123 billion in new capital by 2020, and \$175 billion over the long run (in today’s dollars).

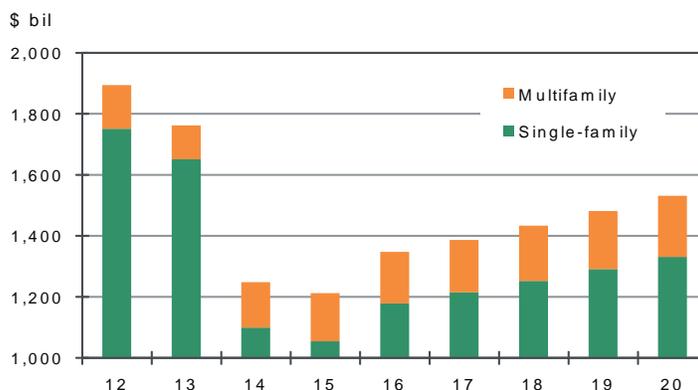
Origination volume

In 2016, the year the transition to the new housing finance system begins, single-family mortgage originations are expected to total nearly \$1.2 trillion, a significant drop from recent years because of lower anticipated refinancing activity.⁸ The average coupon on outstanding mortgages is currently close to 5%. With mortgage rates expected to average 6.5% by 2016, most homeowners with mortgages will have little reason to refinance.⁹

Partially offsetting the drop in refis will be stronger originations for home purchases. This will be fueled by rising home sales and prices and a greater demand for mortgages as investor demand wanes and first-time and trade-up buyers become more active.¹⁰ Purchase volumes will be dampened somewhat by lower loan-to-value ratios; these are currently high because of the loss of equity during the housing crash and the high share of low down payment FHA lending. LTVs are expected to decline modestly through the end of the decade as homeowners' equity is rebuilt and FHA lending recedes.

Single-family mortgage originations are expected to rise approximately 3% per year between 2016 and 2020, reaching \$1.4 trillion (see Chart 2). This is consistent with expected long-run house price growth, as the other factors affecting origination volumes will largely offset each other.

Chart 2: Mortgage Origination Outlook



Sources: MBA, Moody's Analytics

Multifamily mortgage originations are expected to total \$170 billion in 2016. This would be a record, produced as the multifamily market benefits from a further modest decline in the homeownership rate. Foreclosures will remain elevated through 2016 as the last of the problem single-family loans made during the housing boom are resolved. Between 2016 and 2020, multifamily originations are expected to grow 4% per year to \$200 billion. Strong demand during this period for apartments from an expanding cohort of people between ages 25 and 34—the principal source of apartment demand—is expected to support stronger growth in rents and multifamily property prices.

The share of single-family mortgage originations that qualify for a government guarantee will largely be determined by policymakers. A key policy lever affecting the share is the limit on conforming loans. Currently, Fannie and Freddie loans are capped at \$625,000 in high-cost areas and \$417,000 everywhere else. Assuming policymakers set the loan limit at \$417,000 across the country, based on the distribution of loans currently backed by Fannie and Freddie, just less than 40% of originations would receive the guarantee. It is thus assumed that the share of single-family mortgage loans receiving the catastrophic government guarantee in the hybrid system will decline steadily, from approximately 65% now to 40% by 2020.

Guarantee share

The conforming loan limit will determine the guarantee share, because government-guaranteed loans will be favored by mortgage originators. Other alternatives, such as holding loans on originators' balance sheet or securitizing them in the private-label market will be more costly. Based on current pricing for Fannie Mae MBS, the marginal cost of funding for government-guaranteed securities in the hybrid system will be approximately 50 basis points.¹¹ This compares with well over 100 basis points for bank funding via senior unsecured debt and closer to 150 basis points for private-label MBS. The difference in marginal funding cost will be much greater in stressed economic periods. During the worst of the Great Recession, the marginal cost of bank funding was as high as 1,000 basis points. And of course, the private-label market shut down.

The share of multifamily mortgages with the government guarantee will also be determined by regulatory eligibility limits. These are assumed to remain close to Fannie's and Freddie's current 40% share of originations. The government guarantee is important to ensuring the flow of multifamily mortgage credit during difficult economic periods and to rental developments catering to lower-income households, as well as those in rural and smaller urban areas.

Private first-loss capital

The amount of private capital required to stand in front of the government's guarantee is also a matter of substantial debate, although there is general agreement that it should be greater than it was before the Great Recession. Prior to the downturn, Fannie and Freddie had enough capital to withstand a loss rate of only about 1%. This was clearly insufficient, as the institutions ended up in conservatorship, effectively nationalizing the housing finance system.

A good benchmark for the amount of private capital backing housing finance is the amount of losses suffered in the Great Recession. This was the proverbial hundred-year flood. Fannie, Freddie, and the private mortgage insurers will ultimately have a combined loss rate of between 4% and 5% resulting from the recession (see Table 1).¹² This would be a conservative capitalization rate, since in the future system, regulation would demand that guaranteed mortgages be of higher quality than those purchased by Fannie and Freddie before the recession.

Table 1: Residential Mortgage Loan Realized Losses
\$ bil

	2006	2007	2008	2009	2010	2011	2012	Total 2006-2012	Debt Outstanding Yr-end 2007	Losses as a % of Debt
Total	17.1	38.5	136.5	216.1	190.0	161.8	159.9	919.9	11207	8.2
Government-Backed	7.1	7.7	17.9	31.8	51.4	46.3	44.2	206.4		
Fannie Mae & Freddie Mac	0.8	1.8	10.3	21.3	37.3	31.4	26	128.9	4820	2.7
Fannie Mae	0.6	1.3	6.5	13.4	23.1	18.3	14.4	77.6		
Freddie Mac	0.2	0.5	3.8	7.9	14.2	13.1	11.6	51.3		
Federal Housing Administration	6.3	5.9	7.6	10.5	14.1	14.9	18.2	77.5	449	17.3
Privately Backed	10.0	30.8	118.6	184.3	138.6	115.5	115.7	713.5		
Mortgage insurers	1.5	6.9	10.8	9.6	6.6	6	6	47.4		
Depository Institutions	2.7	7.3	35	54.9	48.2	35.3	33.3	216.7	3729	5.8
Private-Label Mortgage Securitization	5.8	16.6	72.8	119.8	83.8	74.2	76.4	449.4	2209	20.3
Subprime	5.6	15.5	55.9	71.6	39.0	34.7	35.5	257.8		
Alt-A	0.2	0.9	11.3	28.0	24.0	20.5	20.1	105.0		
Option ARMs	0.0	0.2	5.2	17.9	17.4	14.8	16.5	71.9		
Jumbo	0.0	0.0	0.4	2.3	3.4	4.1	4.3	14.6		
Note: Securitized HELOC	0.2	1.5	5.1	5.1	3.4	2.1	1.6	18.9		

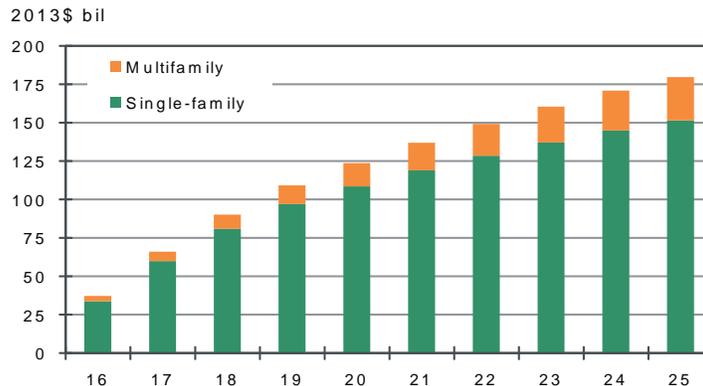
Sources: Fannie Mae, Freddie Mac, HUD, FDIC, Federal Reserve Board, Moody's Analytics

Private capitalization of 5% would also be consistent with the amount of capital the nation's largest banks are required to hold under Basel III and the Dodd-Frank Act. To be well-capitalized, systemically important banks will likely need to maintain a 10% Tier 1 common equity ratio. With mortgages receiving a 50% average risk weighting, the guarantors in the hybrid system would need to hold 5% capital.

The level of private capitalization has a significant impact on mortgage rates: The higher the level required, the more guarantors in the future hybrid system will need to charge in guarantee fees. At a 1% capitalization rate, guarantors would need to charge 20 basis points, about what Fannie and Freddie charged before the recession.¹³ At a 5% capitalization rate, the g-fee would be close to 70 basis points. For context, Fannie's current average g-fee is 57 basis points, consistent with an approximately 4% capitalization rate. Every 10-basis point increase in g-fees adds about \$15 to the monthly cost of a typical mortgage.

Based on the origination outlook and the expected guarantor share, the amount of mortgage debt receiving a government guarantee will increase from approximately \$800 billion in 2016 to \$3.1 trillion in 2020.¹⁴ With a 5% capital requirement, the amount of private capital needed in the future housing finance system would rise from approximately \$37 billion in 2016 to \$123 billion in 2020 (in today's dollars). Over the long run, after the guarantors' single-family and multifamily books of business have settled into their 40% shares, close to \$175 billion in private first-loss capital (in today's dollars) will be needed to support the housing finance system (see Chart 3).

Chart 3: Private Capital Needs in Hybrid System



Source: Moody's Analytics

10% capital

In the proposed Corker-Warner hybrid housing finance system, the system is required to be capitalized to a much higher 10%. Capitalizing the housing finance system to withstand such a massive loss is not necessary—the odds of losses this large are extremely remote, and a 5% capitalization is more than adequate to weather future financial storms.¹⁵ It also represents a misallocation of a significant amount of capital—about \$250 billion in today's dollars in the long run—that could go to more productive uses in the economy.

Mortgage rates will also be higher. How much higher depends on many factors, the key ones being the source of additional private capital and the required rate of return. If it comes from a private mortgage bond insurer with a required return on equity of 15%—the amount private mortgage insurance companies currently require—the cost would increase by 70 basis points.

It would have less of an impact on mortgage rates if the extra capital came from capital markets. Since the likelihood of losses greater than 5% is so low, investors would likely be willing to invest in a security covering the additional 5% of required capital at a low interest rate, say 125 basis points over 10-year Treasury yields. For context, the average historical spread between yields on Fannie Mae securities and Treasuries is just over 100 basis points.¹⁶ In a full-employment economy, 10-year Treasury yields should be near 4.75%, and thus investors would require a 6% yield to provide the 5% of additional capital.¹⁷ The impact on mortgage rates would be 30 basis points ($.06 * .05$).

This rate impact is probably somewhat overstated given other elements of the Corker-Warner legislation that serve to reduce to mortgage rates from current levels. This includes the move to a single security, a uniform pooling and servicing agreement, increased competition among guarantors and issuers, and the varied sources of capital from equity and fixed income markets.

However, it is important to note that increasing the system's capitalization to 10% would have a meaningfully larger impact on mortgage rates for borrowers that are less creditworthy than average, although still eligible for a government guarantee, and during economic recessions. For example, the increased cost of moving from a 5% to a 10% capitalization to a borrower who is at the edge of eligibility during a typical post-World War II recession would be closer to 80 basis points. For context, every 50 basis point increase in mortgage rates, increase monthly mortgage payments for the average mortgage borrower would rise by \$75, a 5% increase.

A significant benefit of such a high capitalization is that it would provide a fortress financial foundation for the housing finance system. It would all but eliminate taxpayers' exposure to risk, and should allay any concern about the government charging too little for its guarantee.¹⁸ Under most circumstances the government's g-fee should be very small. Higher capitalization should also dispel any moral hazard concerns that private financial institutions would lower their underwriting standards and take on too much risk thinking that the government guarantee would bail them out.¹⁹ It is hard to conceive that this would be a problem in the Corker-Warner housing finance system since private capital has so much skin in the game. If the government guarantee is needed, private investors would have suffered devastating losses.

Varied sources of capital

A substantial amount of private capital will thus be necessary to support the future housing finance system. Over time, some will come through the guarantors' retained earnings. This will not help in the early years, but under conservative assumptions, retained earnings could provide as much as one-third of the guarantors' capital requirements by 2020. By then the guarantors' earning power should be strong enough to make them roughly self-capitalizing. Yet this will not help produce the capital needed when the new system begins operating in 2016, or the roughly \$85 billion in capital still needed in 2020 (\$123 billion in total capital needs less \$38 billion in estimated retained earnings).

The equity market is a potential source for early capital. Some financial institutions have held big initial public offerings in the recent past: AIG, Visa, and Bank of America each raised close to \$20 billion in equity. The guarantors in the future housing finance system should have a return on equity similar to that of the money-center banks and life insurers, about 10%. This would be consistent with a valuation of 100% of tangible book value and a price-earnings multiple of 10. The guarantors' return on equity would be less than the 15% return on equity that private mortgage insurers have historically received, although this appears to have declined closer to 12% in the current low-interest rate environment. It is encouraging that many private mortgage insurers have been able to raise significant equity capital in recent months.

But it is hard to see the equity market producing the entire \$85 billion in additional capital needed by the guarantors by 2020. Equity investors will be rightly nervous about the new system, and will question the guarantors' earnings prospects in a highly regulated

and mature market. The guarantors' earnings may also be relatively volatile, fluctuating with the housing and business cycles, and their market share will shift against the nonguaranteed part of the mortgage finance system. And of course there is the reputational risk associated with playing a pivotal role in the provision of mortgage credit.

Nonetheless, it is reasonable to expect the equity market to comfortably provide \$50 billion in capital over a five-year period. In one plausible scenario, three guarantors would go public in 2016, the first year of the hybrid system, raising a total of \$24 billion. Two additional IPOs in 2017 and 2018 would raise an additional \$16 billion. The remaining \$10 billion would be raised in subsequent equity offerings as the guarantors' capital needs increase. Five guarantors would thus be up and running by 2020.

Equity investors in the new guarantors would likely include those currently taking equity stakes in private mortgage insurers. Shareholders in the nation's largest PMI companies include mutual funds such as Fidelity and the Vanguard Group, pension funds such as TIAA-CREF, asset management firms such as Goldman Sachs Asset Management and State Street Global Advisors, hedge funds such as Paulson & Co. and Citadel, and diversified financial institutions such as BlackRock (see Table 2). A wide range of global reinsurers are also providing capital relief to the PMI companies and would likely be interested in taking stakes in the new guarantors.

Table 2: Private Mortgage Insurers' Top 10 Shareholders
Mar 31, 2013

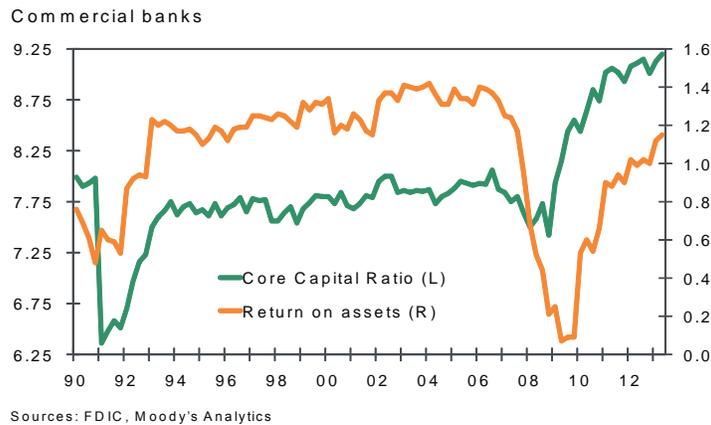
MGIC		Radian		Genworth	
Shareholder	%	Shareholder	%	Shareholder	%
Maverick Capital	6.98	Fidelity Management	9.33	Dodge & Cox	7.19
Paulson & Co.	5.03	Paulson & Co.	6.65	The Vanguard Group	6.02
The Vanguard Group	5.02	BlackRock Trust	5.25	Fidelity Management	5.62
BlackRock Trust	4.41	The Vanguard Group	5.16	BlackRock Trust	4.03
Blue Ridge Capital	4.41	Dimensional Fund	5.12	State Street Global Adv	3.94
Old Republic	4.01	Rima Senvest	5.05	Legg Mason Capital	2.78
Dimensional Fund	3.68	T. Rowe Price	4.12	Highfields Capital	2.67
SAB Capital	3.63	Morgan Stanley	2.05	Paulson & Co.	1.83
Fidelity Management	3.48	State Street Global Adv	1.76	ESL Investment	1.70
Perry Capital	2.65	Columbia Management	1.71	Gosha Trading	1.40

Sources: Companies, Moody's Analytics

Yet even if the guarantors can raise the amount of equity envisaged from public markets, a capital shortfall remains that grows from \$13 billion in 2016 to \$35 billion in 2020. This shortfall would be temporarily filled by the nation's large mortgage originators through a seller-financing arrangement. In the hybrid system assumed here, originators would not be permitted to own guarantors, but there would be an exception while the system is being established. In that period, originators would be required to temporarily take equity in the guarantors in partial payment for the government-guaranteed mortgages they sell. The equity received by the originators as payment would be valued at 100% of tangible book value.

The success of requiring large originators to temporarily hold equity in the guarantors hinges on several factors. Most importantly, the originators, which include the nation's largest banks, would need to have excess capital. Capital ratios in the banking system are at a record high and rising: According to the Federal Deposit Insurance Corp., the Tier 1 capital ratio for all banks is above 9% and climbing (see Chart 4). Banks are also making record profits, and although their recent profitability is temporarily supported by improving credit quality and the resulting release of loan-loss reserves, they should have plenty of excess capital given their long-term earnings power and more limited growth opportunities post-regulatory reform.

Chart 4: Banks Will Have Excess Capital



While bank originators may object to this arrangement, they also have a strong incentive to ensure that the guarantors in the new hybrid system are well-capitalized. Originators will prefer a well-functioning housing finance system, with a government backstop and a to-be-announced market, to alternatives that require them to hold many more mortgages on their balance sheets. However, since the banks' investments in the guarantors would have pedestrian returns, and since a 100% risk-weighting would be capital-intensive, bank originators would be expected to sell their stakes in the guarantors as soon as their capital is no longer needed. There would also be a reasonable divestiture period, in case they are unexpectedly slow to sell their shares.

Critical to this arrangement's success is that even with their equity stakes, the large bank originators should have no control over the guarantors. Otherwise, small lenders would be appropriately nervous about their ability to compete. Large originators would receive nonvoting or B-shares as payment from the guarantors. This is similar to the arrangement Visa set up with its bank members when it designed its IPO. Once the B-shares were sold to non-originator investors, they would become voting A-shares.

Attracting varied sources of private capital into the housing finance system will take experimentation and innovation. It is thus encouraging that the Federal Housing Finance Agency has mandated Fannie and Freddie to begin that process. The goals are

modest but substantive, and they motivate Fannie and Freddie to experiment creatively. Although the pricing on these risk-sharing deals may not be economical, at least for now, what is learned from these efforts will be instrumental to ensuring there is enough private capital to support the future housing finance system.

Freddie recently issued Structured Agency Credit Risk, or STACR, securities, designed to offload the first-loss piece of certain guaranteed MBS into the private capital markets. The STACR's synthetic senior-subordinated floating-rate structure provides investors protection for prepayment and interest-rate risk.²⁰ Investor demand for the security was limited for a number of reasons—it was not rated and it has no risk-weighting—but it had a reasonably successful debut nonetheless. However, private investors will need more information to assess the relative value of STACR securities and alternative credit risk-sharing arrangements. This is necessary to scale up the effort and to better inform the debate on the future housing finance system.

Fannie also recently engaged in a risk-sharing transaction with NMI, a new private mortgage insurer. Offloading risk to the PMIs is worthy of experimentation, but this effort will also take time to scale up, since as much of the industry is still struggling to resolve its poor quality legacy books and uncertainty regarding future capital requirements.

Strong regulator

The future housing finance system should have a new, independent federal government overseer called the Federal Mortgage Insurance Corp.—a name chosen intentionally to mimic the Federal Deposit Insurance Corp. The current FHFA would be folded into the FMIC, but this new regulator would have considerably broader responsibilities, notably including oversight of MBS insurers and the securitization platform. The FMIC would determine which securities are eligible for the government guarantee, set standards for mortgages included in such securities, and determine capital, liquidity and other prudential requirements for MBS insurers. The regulator would ensure that appropriate private capital was at risk ahead of the government guarantee.

The FMIC would establish an insurance fund—the Mortgage Insurance Fund—similar to the FDIC's Deposit Insurance Fund to cover losses on guaranteed MBS. While the new system was being put in place, this MIF would be built up using a portion of the g-fees charged by Fannie Mae and Freddie Mac. Once established, the fund would be maintained with g-fees paid by MBS insurers. The FMIC would adjust g-fees to strengthen the fund if needed to cover future losses.

The FMIC would be instructed to set g-fees adequate to allow the fund to withstand a severe housing and economic downturn similar to that of the Great Recession. Regular stress-testing and other risk management techniques would be used to set the g-fees, whose level would depend on the amount and structure of the first-loss private capital available. The greater the amount of first-loss private capital and the higher its quality, the lower the necessary g-fees. Along the lines of the FDIC, the FMIC would be required to increase g-fees if the MIF, after expected claims, is projected to fall below a minimum level. The FMIC would set g-fees to keep the MIF solvent.

Finding the right level for the g-fee will be difficult, but as housing finance reform progresses the FMIC can use various techniques to better price the guarantee. For example, it is conceivable that in the future the government would not guarantee all MBS that qualify for its backstop, enabling the FMIC to use an auction mechanism to inform the price of government insurance.

In a future financial crisis, the Treasury secretary and the chairman of the Federal Reserve could decide, after consultation with the president, to give the FMIC authority to adjust the extent of risk-sharing between the federal government and MBS insurers (the attachment point) to ensure the liquidity of the MBS market and the availability of mortgage credit. Policymakers would thus have a mechanism to reduce the amount of private capital required ahead of the government guarantee, providing increased support for housing and the overall economy. This process mimics the systemic risk exception for the FDIC, and is meant to be used in similar circumstances. It would not be used for normal countercyclical macroeconomic adjustments, which would remain the responsibility of the Federal Reserve.

The FMIC would coordinate with bank regulators, the Securities and Exchange Commission, and the Consumer Financial Protection Bureau to reconcile the new housing finance system with emerging regulations governing the private mortgage securities market and mortgage-related activities of depository institutions and others.

Common securitization platform

All non-Ginnie Mae, government-guaranteed securities should use a common securitization platform. Although not required, nonguaranteed securities could use the same platform. The common securitization platform would produce a more liquid market, facilitate loan modifications in future downturns, and give issuers operating flexibility at a low cost. It would also allow for a robust TBA market.

The securitization facility would leverage current efforts by the FHFA to develop a single platform for Fannie Mae and Freddie Mac securities. For a fee, the securitization facility would provide a range of services, including mortgage loan note tracking, master servicing, data collection and validation to improve transparency and integrity, and bond administration.

Mortgage loans included in securities that use the common securitization facility (including all mortgages that benefit from the government guarantee plus some nonguaranteed loans) would be covered by a uniform pooling and servicing agreement and uniform servicing standards that encourage prudent underwriting and align investor and borrower interests. This would encourage the adoption of similar standards for other mortgages.

The common securitization platform would permit multiple originators to sell mortgages into single securities with access to the government guarantee. In return, the originators would receive pro rata shares of the security. Pooling requirements would be

largely the same as for typical single-originator securities, and they would be good for delivery into the TBA market. Originators could thus easily convert securities to cash before the securities were created, an especially important feature for smaller originators.

The common securitization platform would also promote development of a common government-guaranteed security, which would improve liquidity in the TBA market and result in lower mortgage rates. A common security would also lower entry barriers into the guarantor market, as no guarantor would have an advantage because of the liquidity of the securities they back.

This is a problem in the current housing finance system, as Freddie Mac securities are much less liquid than Fannie Mae securities. Fannie and Freddie split the MBS market 60-40, but on a typical day the trading volume of Fannie MBS is 10 times greater than that of Freddie MBS. To compensate, Freddie is forced to charge a lower g-fee than Fannie. In the second quarter of 2013, Fannie's average g-fee was 57 basis points, compared with Freddie's 51 basis points. There are some modest differences in the securities—Freddie pays investors more quickly than Fannie and its securities prepay a bit more quickly—but the key difference is their liquidity. This liquidity difference makes the mortgage market less efficient and less competitive, and leads to higher costs for mortgage borrowers and taxpayers.

A potential near-term fix to this problem would be to make Fannie and Freddie securities fungible, creating a common TBA security.²¹ That would require a change to the good-delivery guidelines for TBA, to allow the delivery of either Fannie or Freddie securities into the same contract. The securities themselves would not change; their separate TBA markets would simply be merged. Both securities would still be separately identifiable and tradable, only the TBA trades would be merged. Not only would this interim step improve liquidity, it would demonstrate investor interest in a truly common security that would be an important feature of the future hybrid housing finance system.

Competitive and independent mortgage guarantor market

The future housing finance system should have five to 10 MBS guarantors. Five guarantors would ensure that the system is competitive and free from too-big-to-fail risk. Competition among guarantors would reduce interest rates on MBS and thus mortgage interest rates paid by homeowners. More than 10 guarantors could result in prohibitively high transaction costs. This is important for smaller MBS issuers grappling with the complexity of dealing with many guarantors and their different contracts, data exchange processes, and accounting and underwriting systems.

The MBS guarantor industry would exhibit significant economies of scale. Creating these scale economies is that a guarantor's risk declines as its portfolio increases in size and resembles the risk across all mortgage borrowers. Since the risks in mortgage lending are not independently distributed—the strong form of the law of large numbers does not hold—and significant losses can occur—the mortgage loss distribution is fat-tailed—capital and regulatory costs are high. This favors larger guarantors. Larger guarantors can

charge less for more marginal risks since they will have less of an impact on the risk of their entire larger portfolio. And informational asymmetries also advantage larger guarantors that are able to collect more and better data and information.

The scale economies could be reduced somewhat if the government guarantee is confined to QM loans, which seems likely. These loans are more homogenous and the risk premiums on a guarantor's portfolio may converge more quickly to the population loss rate. Informational asymmetries could also be less significant if there is greater data transparency in the new housing finance system.

The scale economies in the MBS guarantor industry are expected to peak with guarantors that have close to a 20% share of the market. There may be one or two guarantors that cater to the most homogenous part of the mortgage market with a larger share, and several smaller guarantors that are more niche insurance providers. A guarantor established to cater to small mortgage originators as envisaged in a number of hybrid systems might be an example of a niche guarantor. For context, the five largest life insurance companies account for one-third of that market, while the top five property and casualty insurers account for almost half. The private mortgage insurance market is more concentrated, particularly in the wake of the housing bust and the industry's consolidation, with the five largest PMI companies accounting for 85% of that market.

Mortgage guarantors should also be independent from large mortgage originators. This has a number of benefits in addition to reducing the size and market heft of players in the housing finance system. More private capital is likely to come into the system if big banks are unable to dominate it. Separating guarantors from originators would also ensure that more due diligence would be applied to the mortgage loans and securities being originated. Independent guarantors would be especially careful in their underwriting given how much skin in the game they would have.

Worries about regulatory overlap between the FMIC and banking regulators would also be addressed. Under any circumstance, the FMIC would need to coordinate with the Federal Reserve, SEC, OCC, CFPB and other agencies, but the regulatory burden would be significantly reduced if issuers, who can be heavily regulated depository institutions, are not permitted to own guarantors.

Equal access and affordability

The future housing finance system should promote access to affordable owner-occupied and rental housing. The long-term, fixed-rate, fully amortizing and fully pre-payable mortgage has served borrowers well at many income levels and appears to be desired by most U.S. homeowners. At the same time, the destruction of homeowners' equity in the Great Recession and changing demographics suggest there is value in responsible experimentation and flexibility in future housing finance arrangements.

This experimentation might prove challenging for the private housing finance system, in part because good ideas take time to prove, but once proven are easily replicated. Limited and potentially temporary forms of credit enhancement (for example, soft second

mortgages at below-market rates, or loss reserves for a pool of loans testing alternative underwriting strategies to determine ability to repay) can enable the unsubsidized market to serve many more families capable of becoming and remaining homeowners.

Innovation is also needed to maintain a supply of unsubsidized affordable rental housing in small properties, those with up to 50 units. Such housing accounts for the bulk of unsubsidized rental units and a high percentage of all affordable units, but often needs refinancing, renovation and repair, yet has little access to capital. After market contractions, private credit providers tend to leave behind good credit risks. The inability of creditworthy borrowers to access credit exacerbates income and wealth disparities and impairs economic development in many communities.

The statutory program definitions under which the FHA and VA operate make innovation extremely difficult. To address these concerns, the future system should establish a Market Access Fund to provide explicit credit enhancement and direct subsidies. With the former GSE housing goals abolished, affordable housing activities would be supported instead by the MAF through a transparent mechanism and with dedicated funding.

The MAF should be financed by an assessment on all MBS, both guaranteed and nonguaranteed. Charging the fee on both guaranteed and nonguaranteed MBS eliminates the fee as a source of market bias while providing a stable and consistent source of funding for the MAF. The fee could vary according to guarantors' success in achieving a national service mandate to operate in all parts of the country and promote access to affordable housing, consistent with safety and soundness requirements.

The Market Access Fund could consist of four subsidiary funds:

1. R&D Fund: Provide grants and loans for research (including market research), development and pilot testing of innovations in pre-purchase preparation, product, underwriting and servicing that expand the market for sustainable homeownership and for unsubsidized affordable rental housing.
2. Credit Support Fund: Provide limited credit enhancement and other credit support for products that increase sustainable homeownership and affordable rental by supporting the testing, beyond pilot projects, of products that if successful have the potential to be scaled up and eventually sustained by the private market.
3. Capital Magnet Fund: Provide funding for the Capital Magnet Fund, which enables CDFIs and nonprofit housing developers to attract private capital and take affordable housing and community development activities to greater scale and impact. This fund was authorized by Congress under the Housing and Economic Recovery Act of 2008, or HERA; the CMF was to have permanent, dedicated financing through a charge on Fannie Mae and Freddie Mac but has not been funded, other than one round of appropriated funding in fiscal 2010.

4. National Housing Trust Funds: Provide funding for the National Housing Trust Funds, which is a HUD-administered state block grant program designed primarily to increase and preserve the supply of rental housing for extremely low income families. The NHTF was authorized by HERA but has never received funding.

Seamless transition

The transition from the current, largely nationalized housing finance system to the future hybrid system must protect the economic recovery. Government support to the housing finance system cannot be withdrawn too quickly without undermining the housing recovery, which is vital to the broader economic recovery. Mortgage credit conditions are still very tight: Lenders remember the massive losses suffered during the housing crash and are uncertain about a number of regulatory issues. Prematurely withdrawing government support would exacerbate this problem.

Taxpayers should be made financially whole during the transition. The government's support to Fannie and Freddie should be repaid, along with the cost of backstopping the rest of the financial system when Fannie and Freddie failed, and the costs associated with setting up a new financial system. Taxpayers should also receive a return on their financial support commensurate with the risks they took.

Investors in legacy Fannie and Freddie MBS and debt securities should also be protected. The federal government now guarantees existing MBS and bond obligations of Fannie and Freddie through agreements between the Treasury Department and the two firms. This must continue through the transition period. Not doing so would undermine investors' faith in the U.S., raising borrowing costs and exacerbating the nation's fiscal problems. This is a legacy of the old system, and while the new system should avoid re-creating this obligation, we cannot retroactively change expectations without damaging the nation's credibility in global credit markets.

A critical question in the transition to a future housing finance system is what to do with Fannie Mae and Freddie Mac. For all that is wrong with the current system, Fannie and Freddie are doing an effective job buying conforming mortgages, bundling them into MBS with a government guarantee, and selling them to global investors. The mortgage market is not working as well as it should, but it is working. Whatever is done with Fannie and Freddie must not disrupt this flow of mortgage credit, for the sake of the housing and economic recoveries.

Arguably the most straightforward approach, with the least amount of near-term risk, would be to recapitalize and reprivatize Fannie and Freddie. Both are currently profitable, as a result of improving mortgage credit conditions and their higher guarantee fees. The two agencies' profits are flowing to the U.S. Treasury, rapidly repaying the \$188 billion Fannie and Freddie received from taxpayers in order to stay in business. At last count they still owed \$42 billion but were on track to repay the Treasury's investment by early 2014.

After that, their profits could be used to build the capital necessary for them to become private guarantors in the future finance system. Once appropriately capitalized, they would be reprivatized, with the government selling them to private investors to maximize the return to taxpayers.

There is a considerable downside to this approach, however: The future housing finance system could again be dominated by Fannie and Freddie or their successors. The system could encourage competition, for example, by establishing a new common securitization platform run as a government utility that produces a single government-backed security. The reincarnated Fannie and Freddie would also likely be classified systemically important financial institutions, or SIFIs, and thus face stiffer capital and liquidity requirements. This would raise their cost of capital vis-à-vis newer entrants, further supporting competition.

But the two giant firms would still have considerable advantages of size and scale, important legacy relationships, and entrenched software and systems. Most likely this approach would create a hybrid system dominated by a duopoly, firms with significant power over the mortgage and housing markets that would be much too big to fail. The arrangement would be uncomfortably similar to the dysfunctional system that prevailed prior to the Great Recession.

An alternative approach would be to simply put Fannie and Freddie into receivership and liquidate their assets. Guarantors in the hybrid system would be largely new entities, begun by those purchasing Fannie's and Freddie's assets. There is significant risk in this approach, as there would be no assurance that the new guarantors would be able to continue the institutions' activities, at least not in a timely way. The chance of a disruption in the flow of mortgage credit would be uncomfortably high.

A better approach would be for the government to put Fannie and Freddie into receivership, and to strip them of their key assets. They would then be rechartered as new private guarantors, able to license back these assets from the government receiver. Their operations would not be disrupted, ensuring that the mortgage market functioned smoothly through the transition. But to level the competitive playing field, any other new guarantors could also license the same key assets from the receiver. This would facilitate easy entry into the guarantor market and thus competition.

The current Senior Preferred Stock Purchase Agreement between the U.S. Treasury and Fannie and Freddie would need to be restructured to permit the redemption of the Treasury's senior preferred shares and the cancellation of its warrant in the firms. The restructured SPSPA would determine the appropriate compensation taxpayers require from Fannie and Freddie for their financial support. Taxpayers should be made financially whole, receiving repayment for the support they provided to Fannie and Freddie, the cost of backstopping the rest of the financial system when they failed, and the cost of setting up a new financial system. Taxpayers should also require a return on their financial support commensurate with the risks they took. Under reasonable assumptions, Fannie's and Freddie's future profits would not be sufficient to fully compensate taxpayers.

Fannie and Freddie would be put into receivership, and their operating assets and liabilities moved into limited life regulated entities, or LLREs, allowing them to maintain their operations independent of the resolution process.²² This is similar to the procedure envisaged in Dodd-Frank for failing SIFIs. The assets of the LLREs would then be sold or licensed back to Fannie's and Freddie's successor firms, which would be chartered as independent guarantors, and to the new competitor guarantors.

Fannie's and Freddie's \$4.5 trillion legacy guaranty book would not be included in the assets transferred from the government receiver to the LLREs. More private capital would be needed to support the legacy books than could be raised in a reasonable period, ensuring that the new housing finance system would never get going. The receiver would engage the new guarantors to manage the loans in the legacy books, providing a steady source of revenue.

The impact on the federal budget of resolving Fannie and Freddie should be modest, although that depends somewhat on whether budget accounting from the Office of Management and Budget or the Congressional Budget Office is used. OMB treats Fannie and Freddie as private companies independent of the government, thus the impact on the federal budget is simply the net cash payments they make to the Treasury. OMB projects that Fannie and Freddie will remit just over \$50 billion to the Treasury over the next decade. CBO treats Fannie and Freddie as part of the federal government and uses fair-value accounting to calculate the cost of the net subsidy the government provides mortgage borrowers via the institutions. CBO projects that there will be a negative subsidy of about \$10 billion over the next decade.

Conclusions

Since the government took over Fannie Mae and Freddie Mac during the financial collapse five years ago, effectively nationalizing the nation's housing finance system, nothing meaningful has changed. The government still makes nearly nine of every 10 U.S. mortgage loans. This is bad for both taxpayers and homebuyers.

Taxpayers are on the hook for potential losses on the hundreds of billions of dollars in mortgages that Fannie and Freddie insure each year. This is not necessary: Private investors are willing to take on much of this risk and, with some safeguards, are capable of doing it.

The longer Fannie and Freddie stay in government hands, the more lawmakers will be tempted to use them for purposes unrelated to housing. This has already happened. Last year's payroll tax holiday was partially paid for by raising the premiums Fannie and Freddie charge homebuyers for providing insurance.²³ Mortgage borrowers will be paying extra as a result over the next decade.

The housing market's revival has allowed Fannie and Freddie to again turn large profits, amounting to tens of billions of dollars each year. Policymakers may begin to rely on these profits to fund government spending, making it especially hard to let Fannie and Freddie go.

Policymakers may also eventually be tempted to make Fannie and Freddie lend to people who really cannot afford mortgages. This is partly how the two institutions got into financial trouble during the housing bubble—they took on more risk than they should have to meet their housing-affordability goals. Helping disadvantaged households become homeowners is laudable, but experience shows that politically driven help can be abused.

The bigger problem now is the limbo status of Fannie and Freddie, which fosters indecision at the two institutions and by their regulator, the FHFA. Lenders who do business with Fannie and Freddie are unsure of the rules, and are thus extra cautious, keeping credit overly tight for potential homebuyers. This is evident in the average credit scores of borrowers through Fannie and Freddie, which today are in the top third of all of credit scores.

Some in Congress recognize the current situation's dangers and have introduced legislation to reform the nation's housing finance system. Yet these legislative efforts lack a clear plan for getting from the current housing finance system to the future one. The transition cannot be bungled: The nation's economic recovery depends on housing, which in turn depends on the flow of mortgage credit. The \$10 trillion U.S. mortgage market is also critically important to the entire global financial system.

Yet while the transition will be complicated and rife with risk, it is eminently doable, as the path presented in this paper illustrates.

The federal government has unwound much of its extraordinary intervention in the economy prompted by the Great Recession. Fiscal stimulus has been replaced by fiscal austerity. The Trouble Asset Relief Program bailout fund will soon be history. The Federal Reserve is planning to begin normalizing monetary policy. That leaves Fannie and Freddie and the nation's housing finance system as the largest piece of unfinished business. It is time to finish it.

Endnotes

1 This testimony draws heavily from the white paper “*A Pragmatic Plan for Housing Finance Reform*,” Ellen Seidman, Phil Swagel, Sarah Wartell, and Mark Zandi, Moody’s Analytics, Milken Institute and Urban Institute white paper, July 19, 2013.

2 The three agencies are currently responsible for 85% of all purchase mortgage originations. The nation’s banks originate the remaining 15%, which they hold on their balance sheets.

3 Loans eligible for a government guarantee would be qualified mortgages as currently defined by the Consumer Financial Protection Bureau.

4 If the MIF were depleted in a future crisis and the Treasury were required to provide financial support to the housing finance system, the FMIC would have the ability to raise guarantee fees on future mortgage borrowers to ensure that taxpayers are made whole.

5 The securitization facility would be used for all non-Ginnie Mae government-guaranteed securities and, although not required, could be used for nonguaranteed securities.

6 Market Access Fund and MBS insurer for small lenders.

7 For an assessment of the Corker-Warner legislation, see “*Evaluating Corker-Warner*,” Mark Zandi and Cris DeRitis, Moody’s Analytics white paper, July 2013. The president’s support for a hybrid system was expressed in a speech.

8 According to the Mortgage Bankers Association, during the five years between 2008 and 2012, single-family residential mortgage origination volumes averaged approximately \$1.75 trillion per year, of which \$1.2 trillion were refinancings. With equilibrium fixed mortgage rates of 6.5% well above the average coupon of approximately 5% on outstanding mortgage debt, future refinancing volume is expected to be closer to \$300 billion per year.

9 This is based on the assumption that 10-year Treasury yields will be close to annualized potential nominal GDP growth in the long run. Potential nominal GDP growth is expected to run between 4.5% and 5%, equal to 2% inflation and real GDP growth of 2.5% to 3%. Thirty-year fixed mortgage rates are expected to be approximately 175 basis points over 10-year Treasury yields.

10 The majority of home sales to investors are for cash, while most sales to first-time homebuyers are financed with mortgages.

11 This represents the option-adjusted spread on Fannie Mae 30-year current coupon securities.

12 The losses through 2012 are less than 5%, but foreclosures are still high and thus more losses are coming.

13 These mortgage rate impacts are based on a guarantee fee calculator that determines through a net-present-value computation of cash flows the fee necessary to meet conditions for both solvency and return on equity. The calculator is available upon request.

14 This assumes that single-family mortgage debt runs off by 10% per year as a result of prepayments and normal amortization. Multifamily debt is assumed to run off by 2% per year.

15 The protection to taxpayers is 12.5%. This includes 10% in private capital and 2.5% in the mortgage insurance fund. In other words, losses on mortgage securities backed by the government would have to be greater than 12.5% before taxpayers would be called upon to support the system. To produce losses of this amount, a financial crisis would have to be almost three times as severe as the Great Recession.

16 This spread is necessary to compensate investors for the prepayment risk in a mortgage security that does not exist in a Treasury bond. It is possible the spread would be narrower in the housing finance system envisaged in Corker-Warner given that the government guarantee would be explicit. However, investors may demand a larger spread until it is clear how the reforms to the system are working out and liquidity is fully established.

17 The 10-year Treasury yield consistent with an economy operating at full-employment and growing at its potential is estimated to be 4.75%. This equals the sum of 2% inflation and 2.75% annual potential real GDP growth. Potential real GDP growth is equal to the sum of 1% labor force growth and 1.75% labor productivity growth.

18 Concern that the government's gfee would be inadequate to compensate taxpayers should also be allayed since the legislation requires the FMIC to increase its gfee if the MIF is expected to fall below its 2.5% minimum.

19 This concern is expressed well by Peter Wallison in a July 1, 2013 Wall Street Journal op-ed "*The Corker-Warner Housing Finance Reform Won't Work.*" <http://online.wsj.com/article/SB10001424127887323873904578569820608849816.html>

20 It is a synthetic security, in that it references a pool of recently originated mortgages although it is not a credit-linked note. A CLN is a more intuitive structure, but since it is a derivative it would have to satisfy a range of other regulatory requirements. The STACR structure avoids these regulatory issues.

21 A thorough discussion of a proposal to create a fungible Fannie-Freddie security is provided in an MBA working paper "Ensuring Liquidity Through a Common, Fungible GSE Security." <http://www.mbaa.org/files/Advocacy/2013SingleSecurityConcept-Transition1.pdf>

22 The LLRE is established under the Housing and Economic Recovery Act of 2008. <http://www.gpo.gov/fdsys/pkg/PLAW-110publ289/html/PLAW-110publ289.htm> HERA gives the FHFA authority to transfer of Fannie's and Freddie's assets to a LLRE to facilitate their orderly liquidation.

23 Fannie and Freddie guarantee fees were increased by 10 basis points for 10 years to help pay for the payroll tax holiday. This will raise more than \$20 billion for the federal government over the next decade.