A More Promising Road to GSE Reform: Governance and Capital

JUNE 2016

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Everyone recognizes that the current housing finance system is not sustainable. Yet efforts to reform the system have repeatedly fallen short, either because they propose too little by way of actual reform or because they propose more dramatic change than is necessary given that so much of the system we have today actually works. Earlier this year we proposed a way out of the impasse, recommending a plan to merge Fannie Mae and Freddie Mac into a government corporation that is required to transfer all non-catastrophic credit risk into the private market.[1] By putting the key infrastructure into the government and pushing the credit risk out into a deep, broad and competitive market, we would transition what has worked well in the current system—broad and familiar access for lenders and borrowers alike—into one that no longer rests on the foundation of a too-big-to-fail duopoly.

In this paper we provide more detail on two key structural features of the proposed system: the government corporation that will manage the catastrophic credit risk and securitization in the system; and the many forms of private capital that will make the system more competitive and better protect the taxpayer. As in the prior paper, we offer this one not as the definitive answer to the complex question of housing finance reform, but in an effort to deepen the conversation about the best way forward.

The role of the government corporation

In our proposed housing finance system, private institutions and investors are responsible for:

- Mortgage origination. Private mortgage lenders make loans to borrowers in the primary mortgage market.
- Mortgage servicing. Private mortgage servicers collect the interest and principal paid by borrowers and ensure that mortgage security investors receive timely payments.
- Bearing interest rate risk. Private mortgage-backed securities investors bear the risk that borrowers pay off their mortgages before maturity, thereby terminating their interest and principal to investors early and reducing investors' expected return.
- Bearing non-catastrophic credit risk. Private credit risk investors bear the risk of borrowers defaulting on their mortgage loans at a rate consistent with any level of market stress short of an economic crisis.

The government corporation, so-named the National Mortgage Reinsurance Corporation, or NMRC, is responsible for:

- Bearing catastrophic credit risk. The NMRC bears the incremental risk of mortgage borrowers defaulting at a rate consistent with an economic crisis.
- Mortgage securitization. The NMRC purchases loans from mortgage lenders, bundles the loans into pools, securitizes the pools, and sells mortgage securities with the government's guarantee against credit risk to private investors in the secondary mortgage market. This function takes place through a common securitization platform.[2]
- Fulfilling the public policy mission. The NMRC ensures that broad access to sustainable mortgage credit for creditworthy borrowers is available in all communities in all economic conditions; provides equal access to the secondary market for lenders of all sizes; and minimizes taxpayer risk.

The motivation for putting the first four functions into the private sector does not require much explanation: As in other areas of the economy, as long as this one is appropriately regulated, as we

expect it to be with the protections put into place with Dodd-Frank, putting them into the private sector will lead to greater efficiency and quality and less risk to the taxpayer. Nor does the motivation for putting the last function into the government corporation: While the first four functions are well served by private sector institutions pursuing their own self-interest, the public policy objectives of the system are best served by those with an explicit mandate to meet them. Why we propose to put the catastrophic credit risk and securitization functions into the government, however, calls for further explanation.

Bearing catastrophic credit risk

There is a broad and deep market for interest rate risk in mortgage-backed securities. The market for credit risk in MBS is much smaller, and that for credit risk in long-term fixed-rate lending is particularly small. By removing the credit risk from these mortgage-backed securities through the government guarantee, we bring this much larger pool of investors into the system, lowering the cost of mortgages and providing widespread access to long-term fixed-rate lending. If we removed the government guarantee, it would significantly drive up mortgage costs and greatly reduce the availability of long-term fixed-rate mortgage loans.

Some have argued that it is worth bearing this cost in order to remove the risk to the taxpayer. But as the financial crisis demonstrated, the government is likely to step in and cover catastrophic risk in a dramatic downturn whether it had covered it explicitly or not. As we are stuck with this risk in any case, then, we should take advantage of the lower cost of funding and widespread access to long-term fixed-rate mortgages that come with having the government cover catastrophic risk explicitly and pricing for it up front.

Mortgage securitization

Unlike bearing catastrophic credit risk, mortgage securitization *could* be handled by the private market. Turning the entirety of this function over to the private market, however, would come at too great a cost. Given the large-scale economies in securitization it would likely be dominated by an oligopoly, perhaps even another duopoly. And given the vital importance of the securitization infrastructure to a well-functioning mortgage market, these private institutions would be too important to be allowed to fail, as their failure would lead to the seizing up of the mortgage and housing markets.

This of course incents excessive risk-taking, which in turn makes it more likely these institutions will need a government bailout, creating a structural flaw at the functional center of the mortgage market. If this sounds familiar, it should: It is precisely the flaw that we are trying to resolve in the current system.

Making mortgage securitization the responsibility of the government corporation not only avoids this misalignment of incentives, but it also increases competition among private mortgage lenders in the primary mortgage market. In essence, by putting the equivalent of the national highway system of the mortgage market into a government corporation, we finally open it up to fair use by all. Lenders of *all* types and sizes will have equal access to the NMRC's securitization channel. By maintaining a cash window for direct sales of whole loans and continuing the current conservatorship practice of standard and level guarantee fee pricing without regard to size or securitization volume by the government-sponsored enterprises, the NMRC will prevent the erection of barriers to entry or participation by smaller lenders that we are likely to see again if the system is turned back over to private institutions that would again be incented to strike deals with larger counterparties. The increased competition between lenders of all sizes will keep mortgage rates down in our system, increase access to mortgage credit, promote innovation of new loan products, and incent lenders to provide better service to borrowers.

Some have expressed concern that putting the mortgage securitization infrastructure into a government corporation would condemn it to a world of inefficiency and bureaucracy, an unnerving prospect for a $4.5 trillion market that depends so heavily on efficiency and nimbleness. In the current system, lenders can sell their loans to either Fannie or Freddie and are able to go to one if they are not happy with the terms of the other. This competition between the GSEs incents a measure of efficiency and greater effectiveness in meeting the needs of lenders and, by extension, borrowers. Our proposed system would forgo this competition.

Others have expressed concern that the government corporation will be overly sensitive to political pressures, easing and tightening the credit box and underwriting standards according to the political mood of the moment rather than what actually best serves the market and the taxpayer.

These concerns are entirely understandable and we take them seriously. But they are based largely upon experiences with government *agencies*, which face a host of limitations that a government *corporation*, which is what we are proposing, does not. The law provides Congress with a great deal of discretion in establishing and operating a government corporation, allowing policymakers to create an institution with the flexibility and sophistication of a private institution. In establishing the NMRC, lawmakers would have to resist the temptation to tie the corporation's hands, rendering it unable to handle complex and fluid challenges that it will face.

Although there are daunting challenges inherent in lodging these functions in any ownership structure, we believe that putting them into a well-designed government corporation offers the greatest benefits for the risks involved.

Governance of the government corporation

In the NMRC, we propose a government corporation that carefully balances accountability to the taxpayer with the independence, flexibility and incentives of a well-run, privately owned institution, so that it serves the market and its public policy mission as efficiently and effectively as possible.[3] It does this through a capital structure and governance framework that brings market sensitivity and fiscal discipline to bear in the pursuit of the institution's mission.

Fixed-dividend securities

To help bring market discipline and flexibility to the NMRC without incentivizing excessive risk-taking, it will raise capital by issuing a single class of securities that provides a fixed dividend paid to investors as long as the NMRC remains profitable. Dividend payments on these securities will be non-cumulative; that is, if the NMRC ever stops making payments, they are never made up. The investors in these securities are expected to be institutional investors with a preference for stable returns over the long term.[4]

Because the dividend will not change with the NMRC's earnings, the fixed-dividend security holders will want the NMRC to remain profitable, and thus obligated to pay the dividend, without taking excessive risk, thus jeopardizing that dividend. The interests of the security holders will be entirely different from the legacy common shareholders of Fannie and Freddie, whose return depended on protecting or growing market share to maintain or expand the profitability of the institutions, incentivizing them to push the GSEs to take excessive risk when its market position or investor returns are threatened.

The fixed-dividend securities thus instill in the NMRC private sector-like discipline and sophistication but not the motivation for excessive risk-taking. This framework will make the NMRC better able to serve the market it is required to serve while helping counterbalance the political pressures that it will face to be overly aggressive given the government guarantee. Moreover, as explained in greater detail below, these investments will provide the NMRC with a stable capital base, create an additional layer of taxpayer protection, and give the NMRC added flexibility in managing credit risk in stressed environments.

NMRC Board of Directors

Issuing these securities will only instill market discipline in the NMRC if the shareholders' interest is integrated into its governance, along with other voices that will be critical to fulfilling its mission effectively. We thus propose that the NMRC have a board of directors that is appointed by the president and confirmed by the Senate and reflects a balance of industry, consumer and shareholder perspectives.[5] The board of directors will establish an audit committee, a risk committee, a governance committee, a finance committee, and a compensation committee. It will also hire its own general counsel to advise it on its statutory responsibilities and create an external advisory board comprised of an equal mix of lenders, investors and consumer representatives.

To ensure that the wide range of interests and backgrounds represented on the board serves to better inform the decision-making process rather than undermine it through infighting among interest groups, the board of directors, and all its members, will share a single mandate in the NMRC's charter: to provide sustainable liquidity in the housing finance system in all economic conditions by providing broad access to sustainable, responsible credit for creditworthy borrowers in all communities; providing equal access to the secondary market for lenders of all sizes; and managing the company in a fashion that does not expose either taxpayers or fixed-dividend security holders to undue risk.

In addition to this policy mandate, the board of directors will have the following explicit oversight responsibilities:

- Hire senior management consistent with the experience and other qualifications provided in the bylaws;
- Determine pay for senior management sufficient to attract the level of talent, competence and experience needed to manage a large, complex and sophisticated organization;
- Require and approve an annual strategic plan in which the NMRC presents how it will meet its mandate over the coming five years;
- Submit unaudited public financial reports quarterly and an audited financial report annually;
- Submit an annual report to Congress on how the NMRC is meeting its mandate; and
- Submit an annual risk management report to Congress similar to the one the GSEs are currently required to deliver annually to Treasury.

The NMRC's governance structure reflects in many ways that of a well-run, publicly traded, private institution, as many of the checks and balances that are needed for such institutions are necessary here. While the mandate that the NMRC serves is one driven by public good rather than private profit, in order to be effective it must pursue that mandate in a manner that is nimble, careful and market-sensitive, not unlike an institution driven by the mandate to deliver sustainable long-term returns for its investors.

Private capital ahead of the taxpayer's risk

In the system that we propose there are five layers of private capital ahead of the taxpayer's risk, which together protect the taxpayer without undermining either access to credit for creditworthy borrowers in all communities or access to the secondary market for lenders of all sizes:

- Homeowners' equity. Homeowners will put money down to purchase a home, gradually building equity over time through their monthly payments.
- Loan-level credit enhancement. As in the current mortgage system, homeowners who put less than 20% down on their home will be required to have mortgage insurance or other credit enhancements, to cover the risk of losses that exceed their equity.
- Risk transfers. In the event that house price declines exceed the homeowners' equity cushion and the resources of institutions providing loan-level credit enhancement, investors in the NMRC's risk transfers will bear the cost of the next 3.5% of losses across a given pool or the equivalent at a loan-level.
- Fixed-dividend securities. In the event that pool-level losses exceed the 3.5% covered through these risk transfers, the NMRC will use capital invested by those who have purchased the fixed-dividend securities to cover the next 2.5% of losses across its entire book of business.[6]
- Mortgage Insurance Fund. And in the event that the losses exceed 6% of its entire book of business, the NMRC will use capital buildup in the MIF to cover the next 2.5% of losses.[7]

All told, this means taxpayers are protected against up to 8.5% in losses across the NMRC's entire book of business. To exceed this cushion, house prices nationwide would have to be slashed approximately in half, with one in six insured mortgages going into foreclosure. In short, we would have to suffer a housing collapse that was twice as severe as the one we just experienced in the Great Recession, and even more severe than in the 1930s' Great Depression.[8]

Setting the appropriate capital level is a matter of balancing the objectives of protecting taxpayers, providing affordable access to mortgage credit and maintaining parity with the rest of the financial system, and is probably a decision best left to the Federal Housing Finance Agency in consultation with other prudential regulators.[9] With the capital level proposed, however, we believe that we have struck the right balance, providing political and economic assurance that the taxpayer will never be called on to bail out this system, creating parity with capital requirements in the rest of the financial system, and maintaining mortgage rates for all creditworthy borrowers consistent with where they are today.

How the NMRC will transfer risk to the private market

It is worth explaining further how risk transfer will function in our proposed system, given its central role. We believe it essential that risk be transferred to the private market in a manner that meets five criteria:

- Reduce risk to the taxpayer;
- Maintain broad borrower access to credit;
- Maintain broad lender access to the secondary market;
- Minimize volatility through economic cycles; and
- Reduce risk in the financial system broadly.

Determining which mix of risk-sharing structures best achieves these criteria is a work in progress, but one that is already under way.

Since 2013, the Federal Housing Finance Agency has required the GSEs to transfer increasing amounts of credit risk through a broadening range of structures. This year the GSEs are required to transfer the risk on the vast majority of new loans and to explore a wider range of structures than they have used to date. Thus far most of these transactions have been on the back end, meaning that the GSEs transfer risk on loans that they have already purchased and pooled. They typically transfer this risk to a reinsurance company or capital markets investor, most often asset managers, hedge funds, or sovereign wealth funds. The GSEs collect their normal guarantee fees from lenders for covering the entirety of the credit risk, but then pay the back-end investor a portion of these fees for shouldering some of that risk.

At the request of their regulator, the Federal Housing Finance Agency, the GSEs are also beginning to look into how best to transfer risk on the front end. In a front-end transaction, a private mortgage insurer or lender takes some credit risk prior to the sale of a loan or pool of loans to the GSEs, with the GSEs lowering their guarantee fees to reflect the commensurate reduction in credit risk they assume when purchasing the loan. This is already how GSE risk exposure is moderated through the requirement for such insurance on high loan-to-value loans.

While there is much to be learned in the coming years about how these different structures perform through the business cycle, the most important distinction is likely to be between transaction-based capital and institution-based capital, which can cut across the front-end and back-end distinction. Transaction-based capital, in which capital markets investors invest on a transaction-by-transaction basis, provides relatively cheap capital in good economic times but would become more costly in tougher economic times, given how fickle and nimble the capital markets tend to be. Institution-based capital, in which companies put up their institutional capital against a series of investments, presents the reverse trade-off, with an execution that is more expensive in steady economic times but stable through times of stress, as they rely on well-regulated counterparties that will price through the cycle and build capital accordingly.

Indeed, the best way to meet the objectives of risk transfer is very likely to be a broad mix of structures, with both institution-based capital and transaction-based capital, through front-end and back-end transactions, at both the pool and loan level (see Table 1). We

Table 1: How Well Do Risk-Sharing Structures Meet the Objectives?

	Front-end risk-sharing		Back-end risk-sharing	
Objectives:	**Deep cover mortgage insurance**	**Lender recourse**	**CAS/STACR***	**Reinsurance**
Reducing taxpayer risk	Poses counterparty risk and risk of GSE-like monoline model, but both can be addressed	Poses modest counterparty risk, but can be addressed	Effective in good economic times; unclear in tough times	Poses modest counterparty risk, but can be addressed
Maintaining broad borrower access to credit	Poses risk of overlays and risk-based pricing, but both can be addressed	Poses risk of overlays and risk-based pricing, but both can likely be addressed	Effective	Effective
Maintaining broad lender access to the secondary market	Effective	Only available to larger banks, which will put smaller banks at a disadvantage	Effective	Effective
Maximizing transparency	Effective	FHFA would need to require measures to make transparent	Effective	FHFA would need to require measures to make transparent
Minimizing volatility	Effective	Capital will be less fleeting than the capital markets, but more than mortgage insurance	Ineffective	Capital will be less fleeting than the capital markets, but more than deep cover MI
Mitigating risk in the financial system	How effective will depend on how counterparty and monoline issues are addressed	How effective will depend on how modest counterparty risk is addressed	Ineffective	Effective but structure likely limited in scope

*Connecticut Avenue Securities/Structure Agency Credit Risk Securities

Source: Moody's Analytics

will not know for sure, however, until the FHFA and GSEs expand their efforts and policymakers have time to judge the performance of the various structures.

As we make the rules of the road for the new system clearer and remove the impediments to broader investor participation, we expect to see significant private competition to bear the non-catastrophic credit risk in the system. The competitors will include capital market investors, reinsurers, private mortgage insurers, lenders, real estate investment trusts, and others, including public insurers like state housing finance agencies. Indeed, the worry expressed by some that there will not be enough private capital to absorb the NMRC's needs seems misplaced given the private demand for and scale of the credit risk involved. If the NMRC were operating today, for instance, it would typically need to transfer close to $16 billion in risk per annum.[10] When fully operational, the private capital in the NMRC system will be substantial, but this capital will be added incrementally to the system over a period as long as a decade, and should thus be readily forthcoming.[11]

How risk transfers will function in times of economic stress

In times of stress, private investors in the risk being transferred by the NMRC either on the front end or back end will demand higher returns to justify taking on greater perceived risk. This was evident during the financial market turmoil earlier this year, when the cost of the GSEs' risk transfer deals became much more costly. In a time of acute stress, like the financial crisis, private investors could either be unwilling to provide capital at all or require such a high return that it would cause guarantee fees and mortgage rates to spike, exacerbating the crisis.

To make sure that the NMRC's risk transfers do not exacerbate a downturn, the NMRC will be given flexibility during times of economic stress. If market conditions deteriorate to a level that transferring risk becomes overly procyclical, the NMRC will have the authority to scale back its risk transfers, scaling them up again as the market normalizes. In this the NMRC would act much like a major corporate bond issuer, raising capital in more favorable market conditions.

In order to ensure that the NMRC only curtails its risk transfers when necessary, it will only have the flexibility to do so when a quantitative threshold of economic stress is breached. There are various ways to set such a threshold, but as an example, one could define the threshold as when those bidding on risk transfers require a return on equity that is a multiple of what is required in a typical market. After that threshold return is breached, the NMRC would be able to suspend risk transfers. It would continue to test the market's appetite for transfers, scaling up when investors' required returns fall back below the threshold.[12]

The NMRC will be able to shoulder this additional credit risk during times of stress because of the permanent capital the corporation raised through the fixed-dividend securities and any surplus that has been built up through typical economic times. It is important that it does not hold this risk any longer than necessary, so it will be required in the regular reports to Congress to document the level of credit risk it has at any given time and to explain how it plans to reduce all of its non-catastrophic credit risk in a timely fashion.

Table 2: Mortgage Rate Under NMRC and Current Housing Finance Systems

	Current system		NMRC	
Mortgage rate		6.10%		6.11%
Difference with current system				0.02%
Mortgage-backed securities yield		4.90%		4.70%
Spread on mortgage securities		90 bps		70 bps
Treasury rate (duration matched)		400 bps		400 bps
Servicing and origination compensation		50 bps		50 bps
Guarantee fee		70 bps		91 bps
Expected credit losses		4 bps		4 bps
Administrative costs		7 bps		7 bps
Mortgage insurance fee		0 bps		10 bps
Affordability fee		0 bps		10 bps
Payroll tax surcharge		10 bps		10 bps
	Implicit capitalization	**Implicit cost of capital**	**Capitalization**	**Cost of capital**
Total capitalization and cost of capital	3.5%	49 bps	6.0%	50 bps
First loss capital	3.5%	56 bps	3.5%	43 bps
Fixed-dividend securities	0.0%	0 bps	2.5%	18 bps
Less: Investment returns		-7 bps		-10 bps
Assumptions:				
After-tax cost of first loss capital		10%		10%
After-tax cost of fixed dividend equity		7%		7%
Pre-tax return on unlevered capital		2%		2%
Tax rate		37%		18.5%

This analysis is for 30-year fixed-rate mortgage borrowers with loan-to-value ratios and credit scores consistent with the current distribution of Fannie Mae and Freddie Mac loans.
The economy is at full employment and inflation is consistent with the Federal Reserve's 2% target.
One-half of risk transfers are to tax-deferred investors, and the other half is to taxable entity-based capital.

Source: Moody's Analytics

The mortgage insurance fund

In the unlikely scenario that losses across the NMRC's entire book of business exceed 6%, exhausting the capital provided through the risk transfers and fixed-dividend securities, taxpayers are still protected by the MIF. It is funded by a 10-basis point fee that is included in the NMRC's guarantee fee. The fee can be adjusted to ensure that the MIF has sufficient resources to provide the additional 2.5% buffer.

The MIF is much like the FDIC's deposit insurance fund, which is funded by a fee paid by depository institutions and stands ready to compensate insured depositors should banks fail with insufficient resources to pay them. This protects taxpayers from stepping in to play that role if banks fail. Similarly, the MIF stands ready to make sure that MBS investors are paid according to their government guarantee, without calling on the resources of the taxpayer.

Lawmakers should consider establishing an MIF as soon as possible, funded by the earnings of the GSEs. The capital buffer of Fannie and Freddie will be eliminated in 2018, forcing them to draw against their Treasury backstops to cover any quarterly losses. Given the size of their lines of credit, which stand at $118 billion and $141 billion, respectively, the prospect of such draws poses no near-term economic risk to either the institutions or the market, but if left unaddressed over time that could change. So we would recommend creating an MIF at the Treasury over the near term, to be drawn upon to cover quarterly losses by either Fannie or Freddie. The fund would be transferred to the NMRC once it begins to do business.

What this all means for the cost of getting a mortgage

Mortgage rates in the NMRC system will be roughly the same as in the current system with Fannie and Freddie in conservatorship, both on average and across the credit distribution (see Table 2). The NMRC system has the added costs of paying for the MIF and an annual 10-bps fee charged on all of its securities to fund efforts to assist the most rent-burdened renters and community development efforts. But these costs are fully offset by the lower yield on NMRC securities, which receive the full faith and credit of the U.S. government, compared with Fannie and Freddie securities, which trade at a discount to fully insured MBS because investors value them differently.

The cost of capital in the NMRC system is also the same as in the current system, despite holding more private capital. That is because the cost of the additional capital in the NMRC system is fully offset by its tax advantages over the current system. Many of the private

investors and institutions providing capital to the NMRC system, including those investing in back-end risk transfers and the fixed-dividend securities, will price this capital on a pre-tax basis, as they either have offsetting tax liabilities and costs or they are investing on behalf of tax deferred accounts. This will allow the NMRC to keep pricing consistent with the GSEs' current guarantee fees while holding capital of 6%.

The NMRC's cost of capital will change with market conditions, but it should set its guarantee fee in order to generate revenues in the good times that are sufficient to cover its higher costs in the tough times, as is the case with other insurance companies. This will allow it to build a surplus during steady economic times that can be used in periods of market stress. Moreover, the NMRC's cost of capital is capped by the flexibility it has to relax or suspend risk-sharing when investors demand more than a certain level of return.[13]

When assessing the impact on mortgage pricing of a reform proposal, however, one must be careful not to focus exclusively on the impact on the *average* price of a mortgage, but also on the impact on cost for creditworthy borrowers that pose relatively higher risk. If a reformed system is able to maintain current average pricing only by reducing significantly the cost of a mortgage for lower credit risk borrowers and increasing it just as significantly for those who pose a higher risk, then it will price a great many creditworthy families out of the market.

The NMRC will be mandated to maintain broad access to credit for creditworthy borrowers across all of the groups covered by the affordability goals and duty to serve, and thus effectively prohibited from letting that happen in this system. To ensure that it does not happen, the NMRC will have a number of tools at its disposal. Most significantly, like the GSEs, the NMRC will be able to pool risk in the way that larger insurers do, pricing at a pool level to allow lower credit risk borrowers to subsidize those with higher credit risk. It can also accept a lower rate of return for low- and moderate-income borrowers, giving them still more room for cross-subsidy, again, just as the GSEs do today.

More broadly, the NMRC's mandate to ensure broad access to credit for underserved communities will flow through to all of its policy decisions. For instance, if there are certain risk transfer structures that compromise the NMRC's ability to ensure pricing for these borrowers at a level that they can afford, then it will have to decrease, adjust or terminate the use of such structures, precisely as the FHFA would presumably require the GSEs to do today. In addition, as one of our authors has pointed out in a separate paper, this model would facilitate integration with other public insurance programs like the Federal Housing Administration that could be used to further extend this pricing by using the lower costs FHA (and other government insurance programs) require, even for higher-risk loans.[14]

Legacy GSE mortgage-backed securities

Any GSE reform proposal that involves the transition to an explicit government guarantee raises the question of what happens with the GSEs' legacy mortgage-backed securities. As the NMRC's securities will be backed by the full faith and credit of the government, if Fannie and Freddie's continue to be backed only by the Treasury's line of credit the NMRC's and GSEs' securities will trade differently. This will create a liquidity challenge for the initial securities issued by the NMRC, as investors will require a premium to cover the relatively small market for these initial securities. And then as Fannie and Freddie's securities run off, decreasing in volume, they will face precisely the same challenge.

Providing a full faith and credit guarantee on the legacy GSE MBS would solve the problem but give investors in these MBS a short-term windfall. That is because current MBS pricing suggests that investors believe these MBS are not as safe as those with the full backing of the government, like those of Ginnie Mae. Indeed, this is an advantage of the NMRC's securities as they have the government's full backing. Providing this explicit guarantee will not cost the government and taxpayers anything given that they are already covering the risk through the Treasury's backstop, and if legacy MBS investors never sell, their upfront gain will be ultimately offset by a reduction in yield-nothing changes on a cash flow basis.

An alternative approach would be to allow GSE MBS investors to purchase the NMRC guarantee for a fee that reflects the added value of the explicit government guarantee, determined perhaps through an auction process.[15] This solves both of the liquidity challenges without providing the legacy MBS investors with a windfall. Of course, this adds a significant amount of complexity to the transition and could lead to a less liquid MBS market if only a portion of these investors buy the guarantee.

How best to think about the trade-offs here will be informed by the GSEs' experience in moving to a single security over the next several years, including how much of Freddie's MBS are locked up in real estate mortgage investment conduits or are otherwise unavailable due to tax or accounting reasons. However, the Freddie experience will provide only so much guidance, as its MBS investors will receive cash as part of the exchange and not pay a fee for the conversion.

Conclusion

Our primary objective in designing the system that we have proposed is to migrate the components that have served it well to a more stable and sustainable foundation. We have done this by transitioning the secondary market infrastructure of the system from a too-big-to-fail duopoly to a government corporation, eliminating the incentive of those managing it to take excessive risk knowing that if their aggressive reach for margin or market share backfires the taxpayer will be there to bail them out.

To ensure that the government corporation can carry out its role efficiently and effectively, we outline a governance structure that mirrors that of a large, privately held institution, maximizing its flexibility, market sensitivity and fiscal discipline. And to ensure that it does so without exposing the taxpayer to excessive risk, our system provides multiple layers of deep private capital, creating an unprecedented level of taxpayer protection and more market discipline to the system overall, all without undermining lender access to the secondary market or borrower access to credit.

Endnotes

1 "A More Promising Road to GSE Reform," Parrott et al, published in March 2016 at https://www.economy.com/mark-zandi/documents/2016-03-22-A-More-Promising-Road-To-GSE-Reform.pdf.
2 The NMRC will have the option to offer both cash window and MBS executions. In a cash window execution, the NMRC will form multi-lender pools. However, some lenders are able to get better pricing by forming pools with more specific characteristics.
3 The Federal Reserve System's governance structure is a reasonably good analogue for the governance structure of the NMRC.
4 To ensure investors in fixed-dividend securities that the NMRC is committed to prudent underwriting practices, the U.S. Treasury will purchase some portion of the NMRC's initial issuance of these securities. For example, Treasury would purchase $10 billion of the securities at a 7% dividend. This will provide the NMRC enough capital to insure the first $400 billion of mortgages, at a 2.5% capitalization. Future issuance of fixed-dividend securities would be sold to private sources of capital who would be pari passu with the Treasury on a claim basis.
5 There are many ways to accomplish this kind of balance. One way would be as follows:
   - It would have nine directors.
   - Seven directors would be appointed by the president and confirmed by the Senate and represent an appropriate mix of industry and consumer perspectives.
   - The president would designate the chairperson from among those appointed.
   - No more than five appointed directors at any given time may be members of the same political party.
   - Four of the directors initially appointed would serve three-year terms and the remaining three will serve five-year terms, after which all appointed directors will serve five-year terms.
   - The remaining two directors would be elected by the fixed-dividend securities holders to one-year terms, with a maximum tenure as a director of 10 years.
6 The fixed-dividend securities will thus be senior to any risk transfers undertaken by the NMRC and any surplus of the NMRC and junior to the Mortgage Insurance Fund and any debt issued by the NMRC. The NMRC will be prohibited by statute from raising any other forms of capital.
7 If in the hard-to-fathom case that the 8.5% in capital is exhausted in a catastrophic crisis, the NMRC is also able to charge a higher guarantee fee in the future to ensure that taxpayers are ultimately made financially whole.
8 House prices as measured by the FHFA repeat sales index fell by 25% peak to trough in the Great Recession. House prices fell by one-third peak to trough in the Great Depression.
9 The FHFA and other prudential regulators will need to consider a wide range of factors to ensure that the NMRC system holds capital consistent with that held by other institutions in the financial system. For example, unlike depository institutions with mortgage portfolios, the NMRC will not hold interest rate risk, and thus may need less capital. However, the NMRC is a monoline, which regulators believe should hold more capital than more diversified financial institutions, all else being equal.
10 This is based on the expectation that in a typical economy and housing market, total single-family residential mortgage originations will be approximately $1 trillion per annum, and that the NMRC would insure 45% of these originations or $450 billion per annum. This is a share similar to Fannie and Freddie's typical share of originations. The NMRC would thus transfer 3.5% of $450 billion or close to $16 billion per annum.
11 If the NMRC system were fully operational today, it would need an estimated $270 billion in capital, equal to 6% (3.5% via risk transfers and 2.5% from fixed-dividend securities) of $4.5 trillion in outstanding NMRC insured mortgages.
12 For example, investors are currently requiring a 10% after-tax ROE for investing in systemically important financial institutions, which is about 800 basis points more than the risk-free 10-year Treasury yield. If a crisis is defined by a spread that is three times as large, this would currently be consistent with a ROE of more than 25%. This is consistent with what investors required in the recent financial crisis and is also consistent with the return required by unsecured consumer lenders such as credit card lenders.
13 With this threshold described in footnote 10, the maximum increase in the NMRC's cost of capital compared with typical times would be approximately 50 basis points. This equals the product of the 15-percentage point increase in the required return on capital—the difference between the 25% ROE crisis threshold and the 10% ROE required in typical times—and the 3.5% in first loss capital.
14 "Achieving Access and Affordability in Mortgage Finance," published in May 2016 at http://www.urban.org/policy-centers/housing-finance-policy-center/projects/housing-finance-reform-incubator/barry-zigas-achieving-access-and-affordability-mortgage-finance.
15 There would be several design choices to make including whether to open a temporary, onetime or ongoing exchange option. Policymakers could also offer a set of auctions for the exchange and thereby get some price discovery regarding the value of the wrap, which could inform the NMRC's guarantee fee.

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