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Abstract

We describe a set of six design principles for the reorganization of the U.S. housing finance system and apply them to one model for replacing Fannie Mae and Freddie Mac that has so far received frequent mention but little sustained analysis – the lender cooperative utility. We discuss the pros and cons of such a model and propose a method for organizing participation in a mutual loss pool and an explicit, priced government insurance mechanism. We also discuss how these principles and this model are consistent with preserving the “to-be-announced,” or TBA, market – particularly if the fixed-rate mortgage remains a focus of public policy.

Key words: GSE, MBS, mortgage

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For the past several decades Freddie Mac and Fannie Mae (“the housing GSEs”)¹ have played a central role in U.S. residential mortgage finance. The design of what replaces the GSEs, which are currently in conservatorship, is of enormous consequence to the performance of the U.S. housing market going forward. In our opinion, the goals of the efforts to reorganize Freddie and Fannie should be to promote the availability and stability of mortgage finance for the core of the housing market while minimizing systemic risk and costs to taxpayers. Any new structure should be designed to be resilient over the business cycle so that mortgage financing neither dries up during periods of market stress nor expands excessively during periods of market ebullience.

The recent financial crisis demonstrated how the implicit government guarantee and unique market structure of agency MBS can support the availability of mortgage credit during times of severe market stress. Figures 1 and 2 show the relative stability of the supply of mortgages eligible for securitization through Fannie and Freddie (“conforming mortgages”), compared to jumbo mortgages, which are of similar credit quality to conforming loans but are not eligible for agency securitization because of their larger size.²

Prior to the onset of the financial crisis, the jumbo segment accounted for around one-quarter of the value of mortgage originations (Figure 1), and the interest rate spread between jumbo and conforming loans was small and declining (Figure 2). However, as the crisis unfolded after August 2007, spreads between jumbo rates and conforming loan rates widened sharply from about 25 basis points to over 100 basis points, and the share of jumbo mortgage originations fell from 30 percent to only 10 percent. This sharp decline in jumbo mortgage supply reflected a collapse in non-agency MBS issuance after mid-2007, and the effect of increasing credit risk premia given the lack of a government credit guarantee on jumbo loans.

In response to this trend, and to provide additional support for the mortgage market, the conforming loan limit was increased in high housing-cost areas in February 2008, from \$417,000 to as much as \$729,750.³ For loans that fell between the old and new conforming loan limits (“high-balance conforming loans”), which now became eligible for agency securitization, interest rates

¹ While the FHLB system also comprises GSEs, we will use this term to refer only to Fannie Mae and Freddie Mac for simplicity’s sake.

² The conforming loan limit is set each year by the GSEs’ regulator (the Federal Housing Finance Agency (FHFA), formerly the Office of Federal Housing Enterprise Oversight, or OFHEO) based on its home price index. The GSEs are forbidden by their charters to purchase loans above that limit.

³ The \$729,750 limit was established on a temporary basis and renewed several times, even after a permanent higher limit of \$625,500 was set in August 2008. See Vickery and Wright (2010) forthcoming, for a more detailed discussion.

quickly returned to levels very close to those for standard conforming loans, and the quantity of lending expanded significantly. However, the supply of mortgage finance above the new higher conforming loan limits remained low, reflecting the inability of originators to securitize or hedge the credit risk on those loans.

Figure 1. Mortgage Rates and Treasury Yield Spread

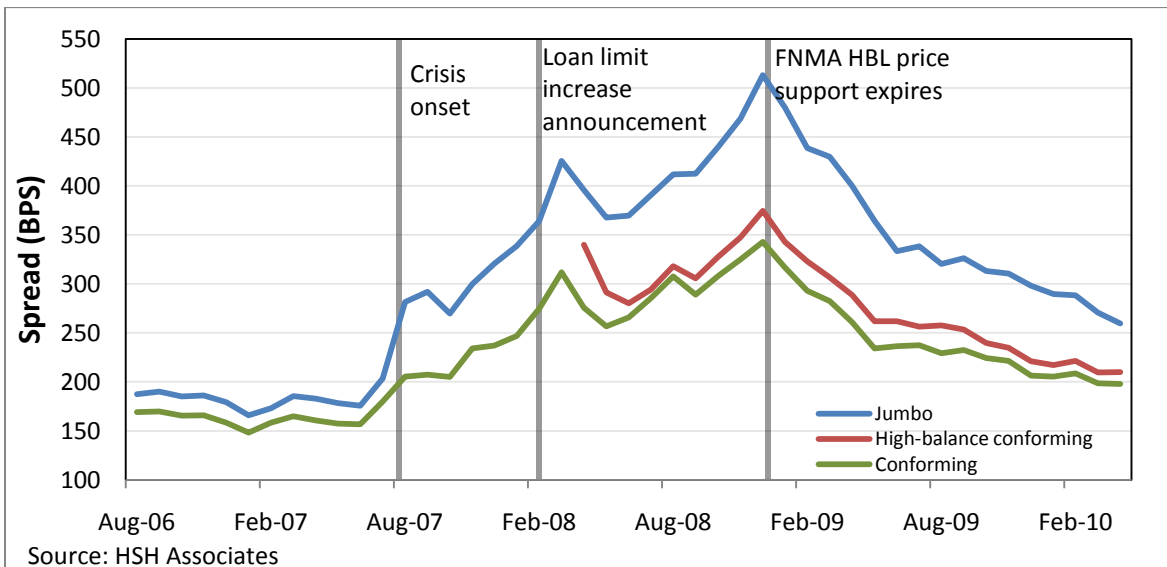
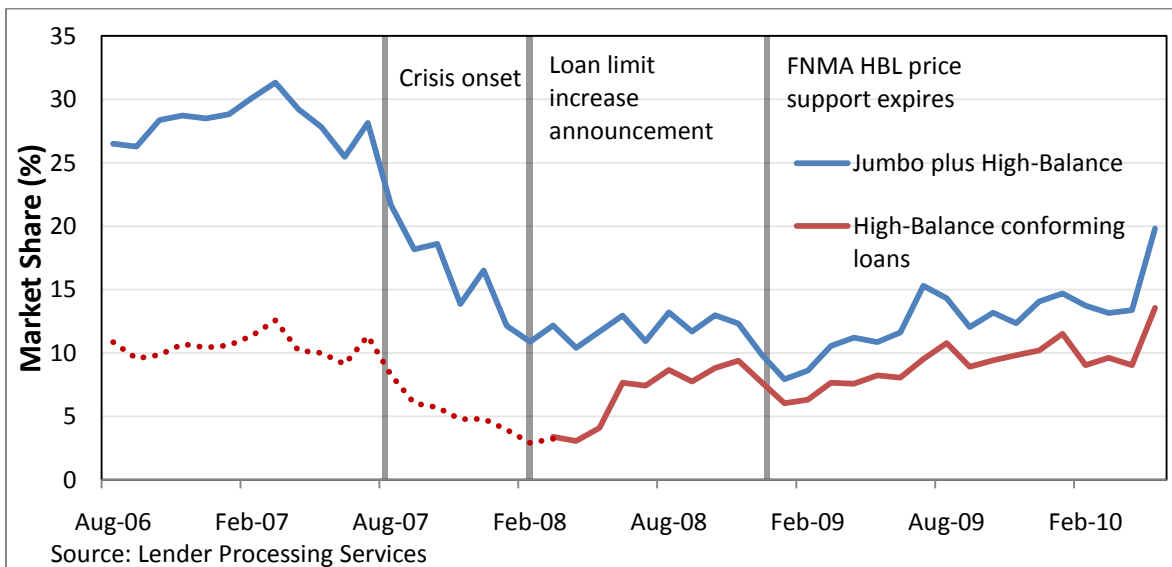


Figure 2. Market Share of Jumbo and High-Balance Conforming Loans



Principles for Reform

The paper by Ellen, Tye and Willis (2010) provides a good background on U.S. housing finance and the basic options for reorganizing the GSEs. There are six principals that we believe should guide the selection among these various options.

1. If possible we should preserve what worked well with the GSEs, in particular standardization of mortgage underwriting and the “to-be-announced” (TBA) market. Both are important for providing liquidity to the market.
2. Economies of scale and scope are important design considerations. Scale economies in securitizing mortgages suggest that any mortgage securitizer-insurers should be relatively few in number so long as the design can address how this choice impacts competition in the market. While the GSEs were active in providing lending to the multi-family sector, these loans proved to be difficult to securitize and generally remained within the GSEs’ portfolios as whole loans. This suggests that there are few economies of scope here and consideration should be given to separating the support mechanisms for single- and multi-family lending.
3. Government housing subsidies should be transparent and accounted for on the government’s balance sheet. Affordable housing goals will likely be more effective if the mandate is focused in one government agency such as the FHA. In contrast, the new entities replacing the GSEs should be given the mandate to focus on the “core” of the housing market and not be taxed with affordable housing targets.⁴
4. In periods of market stress, it may be necessary to have a liquidity provider or perhaps even a “buyer of last resort” for mortgage securities, but this should not be carried out by the new entities unless they are explicitly a part of the federal government. If a private model is selected, the new entities should not be allowed to have a large portfolio either for investment purposes or to perform a buyer of last resort role, since this creates incentives to emphasize the profitability of the portfolio over policy objectives.
5. A lesson from the recent financial crisis is that the government ineluctably owns the catastrophe or “tail” risk in housing credit, and if it cannot avoid providing the insurance, then it should make that insurance explicit and fairly priced so that there is no expected long-run cost to the government.

⁴ The “core” of the housing market would exclude the subprime sector. The new entities should be required to meet all fair lending standards and to promote non-discriminatory access to mortgage credit.

6. The design of any successor to the GSEs must take a stand on whether the 30-year fixed rate amortizing mortgage with no prepayment penalty is going to remain a key mortgage product. We assume that U.S. households and policymakers will continue to have a preference for the fixed rate mortgage as a staple of housing finance because it insulates homeowners from fluctuations in interest rates. As a result, securitization will remain an attractive alternative for mortgage originators (because they do not wish to hold such assets on balance sheet against their short-term liabilities or devote capital and liquidity resources to supporting them) and so an active secondary market will be needed to support it.

The TBA Market

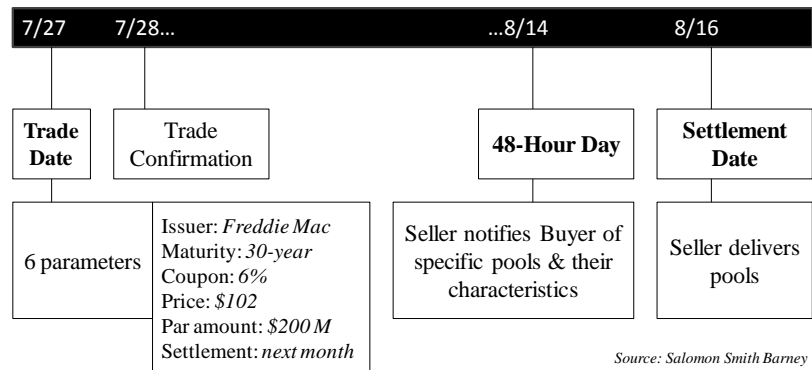
With respect to the first principle, a great legacy of Freddie and Fannie is that they helped to create a deep and liquid market for residential mortgage finance in the United States. The implicit government credit guarantee and the liquidity of the agency MBS market have lowered and stabilized mortgage rates paid by households. Crucially, this liquidity relies not only on the implicit guarantee and the size of the market, but also on certain technical features of the way agency MBS are traded – a factor whose importance has been underappreciated by most commentators.

The vast majority of agency MBS trading occurs in what is known as the TBA (“to-be-announced”) forward market. In a TBA trade, participants agree on a price to transact a given volume of agency MBS at a specified future date (the settlement date). As the name suggests, the defining feature of a TBA trade is that the actual identity of the securities to be delivered at settlement is not specified on the trade date. Instead, participants agree only on 6 general parameters of the securities to be delivered. A timeline for a typical TBA trade is shown in Figure 2, including three key dates. On the day of the trade, the buyer and the seller establish the 6 general parameters, including the date the corresponding cash and security will actually be exchanged, which may be anywhere from 3 to 90 days later.

This process is enabled by the GSEs’ exemptions from the Securities Act of 1933 and by the standardization and automation of the mortgage underwriting process promoted by the GSEs, which have also significantly lowered the transaction costs associated with originating, servicing, and refinancing a mortgage. The TBA market allows mortgage lenders to sell mortgages forward before they are even originated, reducing the length of time needed to “warehouse” the loans on balance sheet before issuing an MBS. In addition, the TBA market provides a cheap way for lenders to

hedge the interest rate risk involved in offering borrowers the ability to lock-in a rate for 30 days while closing on a mortgage. TBA trading is thus a key link between the primary and secondary mortgage market and constitutes a major difference from non-agency or “private-label” MBS – in addition to the credit guarantee of the GSEs.

Figure 2. Example TBA Timeline



Similar to Treasury futures, TBAs trade on a “cheapest to deliver” basis: traders assume they will receive the collateral with the most disadvantageous characteristics and trade every TBA at the corresponding price. This convention is much more counterintuitive when applied to mortgages than Treasuries, since there are so many more features by which mortgage pools can differ from one another. The assumption of homogeneity helps take what is a fundamentally heterogeneous set of individual underlying mortgages and transform them into a very large set of fungible – and therefore liquid – fixed-income instruments.

This assumption of homogeneity is of course also supported by the perceived government backing of the GSEs, which has traditionally assuaged concerns about the underlying mortgage credit risk. However, other factors contribute meaningfully to TBA fungibility as well. At the loan level, the standardization of lending criteria for loans eligible for agency MBS (despite some variation over the years⁵) constrains the variation among the borrowers and properties underlying the MBS. At the security level, homogenizing factors include the geographic diversification

⁵ Fannie and Freddie did venture into guaranteeing and securitizing some low-quality Alt-A loans in the last decade, but this was arguably due to competitive pressure from the private-label securitizers, long after the GSEs succeeded in establishing the conforming loan standards.

incorporated into the pooling process, the limited number of issuers, and the simple structure of pass-through security features⁶.

Despite the standardization of the securities, the delayed disclosure inherent in the TBA trading process runs contrary to the underlying philosophy of securities law regarding disclosure and transparency. In fact, TBAs are only legal because the GSEs are exempt from the Securities Act of 1933, which requires issuers to file detailed registration documents at the SEC and to list the specific assets underlying any asset-backed securitization before it is issued. Without this exemption, the GSEs couldn't issue TBAs since at the time of issuance, only the limited set of security parameters and the conforming loan underwriting standards are laid out, rather than specific collateral. In a TBA, the underlying mortgage loans have not been identified and may not even have been originated yet (which is essential to the ratelock-hedging function described below). That is, the TBA trade date can precede the origination date of the underlying loans. This contrasts sharply with private-label MBS, whose loans must be originated before trading because they require many more disclosures with the SEC. Since they are ineligible for TBA trading, non-agency MBS are much less liquid than agency MBS and while it might be possible to make them eligible, this would require significant amendment of current securities law. More generally, TBA trading can probably be sustained with a variety of organizational structures, but fits most easily with institutions that receive some level of government support.

TBA trading thus greatly simplifies the analytical problem confronting participants in agency MBS markets, restricting its scope to the more tractable set of risks associated with the parameters of the TBA contract. Importantly, this has attracted a number of investors who are unwilling to perform credit analysis – notably foreign central banks, and a variety of mutual funds and hedge funds who specialize in interest-rate analysis. That translates into more capital for financing mortgages and thus lower rates for homeowners. Some economists have proposed formal models for how the temporary restriction of information in TBAs decreases information asymmetries and enhances liquidity⁷.

TBAs also facilitate hedging and funding by allowing lenders to pre-arrange prices for mortgages that they are still in the process of originating. This effectively allows them to hedge their exposure to interest-rate risk after a borrower locks in a rate. This exposure occurs when borrowers exercise an option that lenders frequently give successful mortgage applicants to lock in a mortgage

⁶ TBAs are only possible for “pass-through” securities, whereby the underlying mortgage principal and interest payments are forwarded to security-holders on a *pro rata* basis, with no tranching or structuring of cash flows.

⁷ See Glaeser & Kallal (1997).

rate (usually the primary mortgage rate prevailing on the date of the application's approval) for a period of 60 to 90 days. Lenders face the risk that interest rates rise – and mortgage valuations fall – after having promised a rate to borrowers but before the loan closes and they get to sell the loan to the secondary market. Lenders can eliminate this risk by selling a TBA forward and manage their hedges dynamically with options or a hedging mechanism unique to TBAs known as the “dollar roll”. (Dollar rolls provide an additional financing vehicle, drawing in market participants whose financing and risk management needs are better suited to the idiosyncrasies of this instrument⁸).

It is important to note that not all agency MBS are traded as TBAs. Some loans that the GSEs are authorized to purchase are not eligible for delivery as part of a TBA contract, because the criteria for TBA eligibility are set by a private industry trade group – that excludes the GSEs – rather than any governmental authority. These loans trade at significant discounts relative to TBAs due to differences in various prepayment characteristics and, crucially, liquidity⁹. The lack of direct government influence over the TBA trading conventions is all the more notable in light of the repeated failures of private mortgage futures contracts, which in part reflect the challenges of coordinating action among market participants.

Structure of Cooperative Utility Model

One model for replacing Fannie Mae and Freddie Mac that has so far received frequent mention but little sustained analysis is the lender cooperative utility. Yet while each different model for a successor to the GSEs has its own strengths and weaknesses, a private lender cooperative utility may provide the best overall solution based on the design principals listed earlier. Under this model, securitization would be carried out by a mortgage securitization cooperative that would be mutually owned by a membership consisting of financial institutions engaged in residential mortgage lending. Cooperative or mutual structures have existed for more than a century in the U.S. financial system, ranging from clearing houses (e.g. CME until 2000, DTC, CLS, ICE Trust), banking (e.g. mutual savings banks, credit unions and the FHLB system) and agricultural finance (e.g. the Farm Credit System). The main goal of a cooperative is to provide services to its members and because those members are also the cooperative's owners, any excess profits generated by the cooperative

⁸ The alternative is MBS repo (repurchase transactions), which is a somewhat more expensive means of financing agency MBS and differs in a variety of features – see Vickery & Wright (2010), forthcoming.

⁹ Vickery & Wright (2010) provide a detailed comparison between TBAs and one of these ineligible loan-types.

are returned to the members. Similarly, losses are shared on a pro-rata basis based on each member's equity stake.

Basic Structure and Governance

Only members would be eligible to sell mortgages to the securitization cooperative, and each member would also hold an equity stake in the cooperative entity. Membership should include a broad range of institutions, including large and small lenders, as well as both banks and nonbanks. All these members would be able to directly securitize loans through the cooperative and provide correspondent services for non-member access. Such correspondent relationships are a common practice already, due to larger firms' ability to negotiate more favorable guarantee fees with the GSEs, and provide large banks a substantial portion of the mortgages they sell to the GSEs for securitization. Key decision-making authority would be delegated to a Board of Directors made up primarily of cooperative members, but also including independent directors. Since the bulk of mortgage lending tends to be concentrated amongst a small group of financial institutions (currently over 60% of origination is performed by only 4 institutions¹⁰), the cooperative's charter should include provisions to protect small institutions and ensure that they have equal access to the cooperative's services.¹¹

Capital and Guarantee Fees

Each member would be required to provide equity capital to the cooperative. The capital structure would include initial ownership shares of paid in equity and a mutualized loss pool. Members' contributions to the mutualized loss pool would depend on the volume of mortgages securitized (i.e. the intensity of the institution's use of the cooperative, analogous to the approach used within the FHLB system). The mutualized loss pool would, over time, build up to provide the bulk of the capital base and serve as a reserve against credit-related mortgage losses.

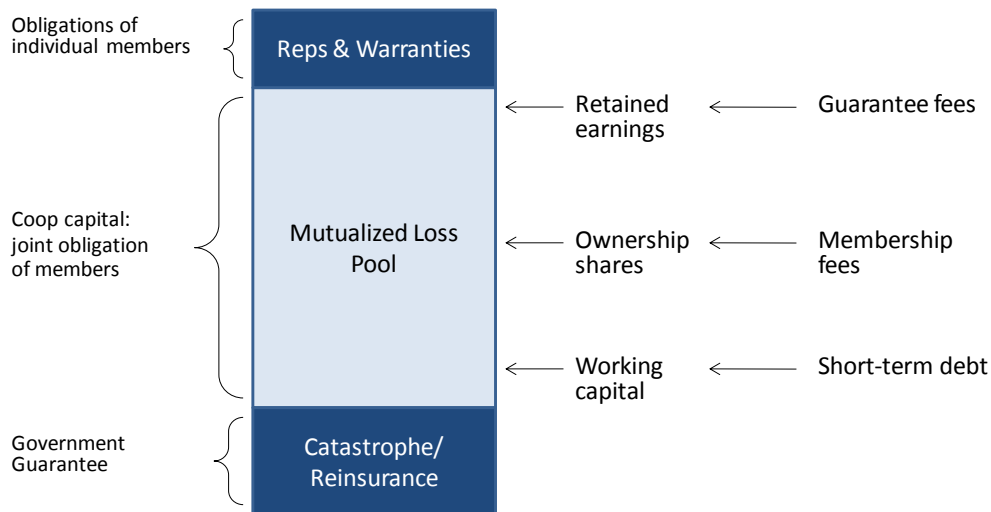
As with Freddie and Fannie, the cooperative would receive MBS guarantee fees up front and on a flow basis. These fees would be split among several uses: 1) payments of the required reinsurance fee to the government for tail risk insurance; 2) payments into the general revenue of the

¹⁰ See http://www.mortgagestats.com/residential_lending/.

¹¹ Consistent with this principle, the FHLB system limits the voting rights of any individual institution, and places geographic restrictions on the composition of the Board of Directors in each district, that limits the influence of the largest shareholders. If anything, the FHLB system has been accused of tilting too strongly towards smaller institutions.

cooperative to cover operating and non-credit-related expenses; and 3) payments to the mutualized reserve pool used to cover credit losses. An example of a capital waterfall for the cooperative is shown in Figure 3.

Figure 3. Capital Waterfall for a Private Lender Cooperative Utility



The lender cooperative would focus on the “core” of the housing market, letting the FHA take the lead on programs for first-time homebuyers as well as mortgage products to make homeownership more affordable for low-income households. We anticipate that this core market would contain only a few standard mortgage products such as the 30-year fixed rate mortgage and plain vanilla adjustable rate mortgages. Innovation in mortgage products would occur in the periphery of the market outside of the cooperative. Products could be considered to be added to the core product set only after sufficient history on these products has been accumulated to be able to estimate the government’s tail risk premium. Since the tail risk is explicitly priced by the government, there is a good argument for the government to avoid “taxing” the lender cooperative to support any specific housing initiatives or assigning it any housing subsidy mandates. The possibility that the tail-risk insurance may be underpriced does not in our opinion make a good case for placing affordable housing mandates on the cooperative. A better response would be to adjust the price for the insurance and to focus the mandates in a government entity such as the FHA. However, even a tax is better than quotas or other targets that would distort the cooperative’s business decisions.

An important design issue is how to structure the government tail risk insurance for the lender cooperative. The choice involves a tradeoff between increased pooling on the one hand, which implies that the government insurance would pay out infrequently and in response to systemic events, and on the other hand the degree to which the lender cooperative is still a “going concern” at the time of the payout. At one extreme, the tail risk insurance could be provided to each specific mortgage (like FHA insurance). At the loan level, the insurance is likely to be triggered by idiosyncratic factors such as health shocks and divorce that impact a borrower’s ability to pay. Alternatively, the insurance could also be specified at the MBS security level (as in GNMA pool insurance). By pooling across mortgages, insurance payouts would be less likely to be triggered by idiosyncratic factors affecting individual borrowers, but would still be susceptible to idiosyncratic and more regional shocks as opposed to macro shocks¹². This could be addressed by pooling across MBS securities in a specific “vintage” which could be defined by a particular time period in which the securities were created. Finally, the trigger for the insurance could be defined at the level of the cooperative’s mutualized insurance fund. That is, the insurance pays out when credit losses have eroded the cooperative’s mutualized loss pool below some minimum threshold.

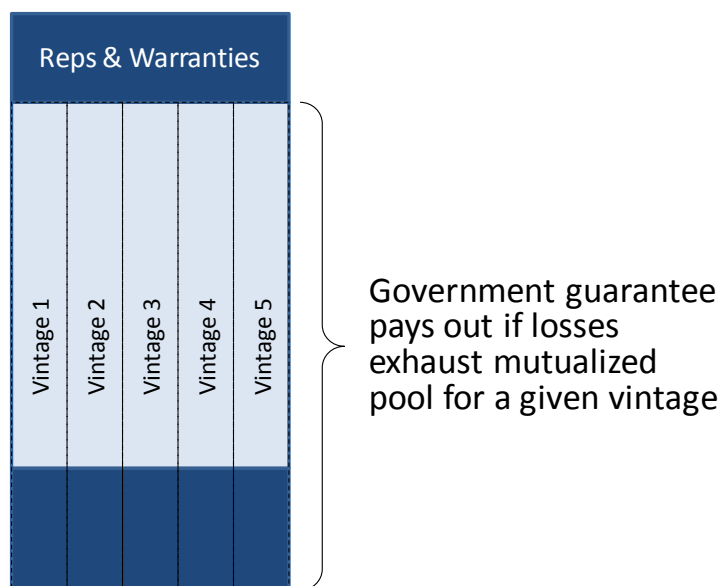
This last triggering mechanism insures that payouts would only occur in response to systemic events, yet may leave the lender cooperative in a weak position to maintain lending even after the government support is provided. A goal of the new entity is to enable the provision of mortgage lending even in periods of stress in credit markets through a robust securitization mechanism that facilitates mortgage liquidity. This suggests that the best tradeoff for the trigger point in the government tail risk insurance would be applying it to whole vintages of MBS. In doing so, the vintage should be defined in such a way that clear information regarding the performance of the vintage is only available after the vintage is closed for new issuance. This would prevent adverse selection whereby lenders know that a vintage is performing poorly enough to likely trigger government payouts and therefore those lenders with low-quality loans to opt into the vintage and those lenders with higher-quality mortgages to opt out.

The other advantage of the vintage-based trigger is that problems with any given vintage or set of vintages will be less likely to inhibit the ability of the lending cooperative to continue to perform its securitization function going forward. As a result, the cooperative remains a going concern even in periods when the insurance is triggered. This in combination with lending standards

¹² Even in normal times with rising house prices and a growing economy, the GSEs had to pay out for losses on individual MBS every year.

and insurance pricing that are constant over the credit cycle should help to limit the pro-cyclicality of the provision of residential mortgage credit. The government tail risk insurance provides a “fire break” between existing vintages and new lending, and helps to insure that the mutualized insurance fund is never depleted to the point where market participants question the viability of the cooperative and the market it supports. This is illustrated in Figure 4.

Figure 4. Vintage-Level Insurance for a Private Lender Cooperative Utility



Limiting moral hazard is always a concern whenever the government is providing tail risk insurance. Lending standards have to be maintained to insure that the insurance is only paying out in the case of true tail events. Otherwise, a race to the bottom could occur among lenders, implying that the “tail” is growing in size over time. Two factors will help to limit moral hazard for the lender cooperative. The first factor is putting borrowers in the first-loss position ahead of the government. Minimum down payment requirements should be enforced for all mortgage products that the government provides insurance on. These down payment requirements should not vary over the cycle.¹³ In addition, borrowers should not be able to purchase private mortgage insurance as an alternative to making the required down payment unless they pay a higher mortgage rate to the

¹³ Maintaining minimum down payment requirements would help to mitigate the pro-cyclicality of leverage over the cycle which can exacerbate asset price cycles. It may also be helpful to redesign the mortgage contract to prohibit the borrower from taking on subsequent 2nd-liens that push the combined LTV above the allowed maximum. This would still allow a borrower to borrow against gains in house prices but would maintain the collateral buffer for the cooperative.

cooperative and therefore to the government. The second factor is that the cooperative would absorb losses on the securities in each vintage ahead of the government. These losses are shared across the members of the cooperative, but weighted toward those that participated most heavily in each vintage, which provides incentives for the members to maintain high credit standards, and importantly, to monitor one another.¹⁴ The cooperative may choose to reinsure some of the credit loss exposure to the mutual insurance fund through a private mortgage insurer, subject to regulatory approval.

Regulation and oversight

While the first loss positions of the borrower and the cooperative are important safeguards against moral hazard, the government would still need to provide regulatory oversight of the cooperative. The FHFA (or a successor agency) would be responsible for regulatory oversight and management of the government's tail risk insurance fund. The FHFA would need enhanced regulatory powers including 1) approval of all new mortgage products and lines of business that can be conducted by the cooperative; 2) direct oversight of the risk-based pricing framework for guaranteeing principal and interest; 3) oversight of the cooperative's risk management systems, such as stress testing; and 4) the ability to veto any changes in guarantee fees or dividends.

Higher minimum capital standards, as well as more stringent risk-based capital standards would be required to protect the government's insurance fund. In addition, the regulator should be removed from the annual appropriations process in order to minimize political influence. The regulator could also determine, establish, and manage the government's tail risk insurance fund. One option is that tail risk premia could be paid into a reserve account which builds up over time, analogous to the reserve funds of the FDIC or FHA. If this reinsurance fund is depleted due to significant mortgage credit losses, it must be replenished by charging higher tail risk insurance premia. An alternative approach is "true" insurance, where tail-risk premia are set at some fixed level, and any excess losses are simply charged to general government revenue.

¹⁴ The performance of each member's mortgages can also be tracked by the cooperative as a discipline device. If a particular member's mortgages are performing consistently below standard, that member can be prohibited from issuing new mortgages into the cooperative until its underwriting problems have been corrected to the satisfaction of the cooperative.

A disadvantage of FDIC-style insurance is that it could exacerbate cycles in mortgage lending, because reinsurance premia would be raised exactly when the mortgage and housing market are under stress. Conversely, there would be pressure to reduce tail insurance premia during periods when defaults are low and the reserve account is large, potentially fuelling excessive credit booms during such periods. An intermediate solution may be charging the government reinsurer to recoup losses on tail risk reinsurance, but only over a longer period (e.g. 10 years). This should reduce the effect on mortgage rates in the short run, since the recoupment is smoothed over a long period of time. Regulation could also stipulate that the fund not seek to recoup past losses during periods of market stress, to further reduce pro-cyclicality.

Advantages and disadvantages of the cooperative model

There are several potential advantages associated with the private lender cooperative model as a successor to the GSEs.

- *Low costs, narrow mission.* Cooperatives have incentives to minimize costs, and to maintain a narrow mission to avoid cannibalizing members' other profitable business activities. For instance, DTC provides clearing and settlement for its members but not custodial services, which is provided by several of its members. We envision that several members of the cooperative would also be active participants in lending in the peripheral mortgage market outside of the "core" products securitized by the cooperative.
- *May help limit monopoly power.* A mutual organization may have fewer incentives to exercise market power over mortgage originators than a for-profit enterprise. A for-profit firm has incentives to exercise monopoly power to increase profits, as Freddie and Fannie have arguably done in the past. Under a cooperative structure, excess profits are simply returned to members (i.e. to the lenders themselves) on a pro rata basis, proportional to securitization activity. Assuming competition amongst lenders in the primary market is high, any increase in fees charged by the cooperative would be at least partially competed away in the primary markets, since originators would be aware they could increase their share of the cooperative's profits by originating more mortgages. An important caveat, however, is that this argument assumes mortgage originators do not collude, either implicitly or explicitly. In a range of industries, trade organizations have acted as a coordinating device for enforcing

collusive arrangements, particularly when they allow participants to monitor the output and pricing of their competitors, and to punish behavior that undermines the market power of the cartel.¹⁵

- *Low risk-taking.* Mutualization of credit losses should provide incentives for members to monitor the activities of the cooperative, and to be conservative when setting criteria for membership, eligible mortgages, and the sensitivity of guarantee fees to mortgage risk. Consistent with this view, research on thrifts and insurance companies has found that mutuals engage in less risk than otherwise similar stock-owned firms.¹⁶
- *Inside monitors.* Equity holders that are also mortgage bankers could in principle be more effective monitors of the securitizer's activities than a dispersed group of outside shareholders.
- *Maintains standardization benefits.* The cooperative model could be used to maintain the key standardization benefits of the current system, including the TBA market, and leverages existing credit guarantee pricing and evaluation platforms established by Freddie and Fannie.
- *Minimize government involvement.* In this approach, government's role is limited to providing tail risk insurance and regulating the cooperative. This limits the potential for political pressures to influence the operation of the cooperative, at least relative to a public option.
- *Simplifies pricing.* The lender cooperative simplifies pricing of tail risk compared to the government bond insurer option. Guarantee fees are paid to the cooperative and the government only needs to price and charge the tail risk to the cooperative.

There are several potential disadvantages associated with the private lender cooperative model as a successor to the GSEs.

¹⁵ Genesove and Mullin (2001) show how communication through a trade association facilitated collusion in the sugar industry. McAndrews and Rob (1996) theoretically analyzes the competitive benefits of a cooperative compared to a for-profit structure in the case of a natural monopoly (e.g. a wholesale switch in an ATM network). Their model structure assumes the cooperative enables competitors in the downstream market to collude. Under this assumption, there is no clear benefit of a cooperative structure in terms of promoting competition.

¹⁶ Esty (1997) presents evidence from the 1980s that mutual savings banks held less risky portfolios than otherwise similar stock-owned savings banks. Lamm-Tenant and Starks (1993) presents similar evidence for insurance firms. See these papers and Flannery and Frame (2006) for more references. One caveat in applying the lessons of these studies to the current setting is that members of mutual thrifts and insurers hold both debt and equity claims, which limits risk-shifting problems, contributing to the conservative approach taken by mutually owned firms. But in this case, the securitization cooperative would issue outside debt, so risk-shifting incentives would still be present, especially if the cooperative is highly leveraged.

- *Governance may be weaker.* Historically, cooperatives often have weak governance over management, because of their dispersed membership, and lack of market discipline or threat of takeover. For example, Cole and Mehran (1998) present evidence that firm performance of mutual thrifts increases after conversion to stock firms; also associated with an increase in the share of inside equity. Given the government reinsurance of tail risk, limiting risk taking and upside returns may be a desirable outcome. In addition, the concentrated nature of mortgage lending may mitigate weak monitoring incentives (e.g. in the first half of 2009, Freddie's top 10 sellers provided 71 percent of securitization volume).
- *Limited access to capital markets.* Access to equity capital is limited to members of the cooperative. Greater access to capital markets to fund growth is often cited as a key reason for demutualization by thrifts and insurers (see evidence in Viswinathan and Cummings (2003)). However, in a tail risk event, experience has shown that all financial firms lose access to capital markets, so the advantages of a shareholder structure in this respect may be limited.
- *Broad participation may be difficult.* Relatedly, an initial capital infusion would be required to set up the de novo cooperative. Small or poorly capitalized mortgage lenders may be unwilling to supply this capital. The Government Accountability Office (2009) cites comments from an unnamed community bank trade group that small institutions may be unwilling to supply sufficient capital to the mutual entity, in light of previous losses on preferred stock investments in Fannie and Freddie.
- *Investment and innovation would be more limited.* Focus on cost minimization could result in insufficient resources devoted to necessary activities, such as hiring strong management and technical staff, investing in risk management and operational systems, and so on. Lack of a strong profit motive also reduces incentives for the cooperative to innovate.

Conclusion

The Treasury Department has declared its intention to foster a broad-based debate on the future of the U.S. housing finance system. Given this mandate and the clear failure of a variety of

institutions across the U.S. housing system, it is important to proceed from an accurate diagnosis of what went wrong. Together, the Ellen et al. and Levitin & Wachter papers lay out many of the key failures and many of the potential solutions. In this paper, we laid out six design principles and explored one model that has so far received frequent mention but little sustained analysis – the lender cooperative utility. We have also discussed the importance of the TBA market and how a cooperative model could accommodate and sustain this product’s remarkable success. While cooperative structures face significant challenges, particularly in their governance, we believe these problems are tractable and outweighed by the advantages a cooperative has in addressing some of the central incentive problems evident in Fannie Mae and Freddie Mac.

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