

Ten Years Since the Financial Crisis: Some Lessons for Reducing Risks to Households

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The financial crisis that began a decade ago underscored the important risks associated with homeownership and the central role that the housing finance system plays. Many households who took on large amounts of mortgage debt during the mid-2000s housing boom found themselves unable to repay their debt after home prices plunged, the economy weakened, and job loss jumped. The huge wave of foreclosures between 2006 and 2010 (Figure 1) not only led to millions of families losing their homes but also severely weakened many financial institutions (some to the point of collapse). It also caused significant disruption to the financial system. The resulting fallout included a cutback in the supply of mortgage credit that exacerbated an already-bad macroeconomic downturn.

While it is not possible to remove the risks associated with homeownership and mortgages, we believe that mortgage market reform has the potential to reduce risk along important dimensions. Doing so remains imperative—notwithstanding the substantial deleveraging that has occurred during the crisis, many households continue to have substantial debt by historical standards and recent research “stress-testing” household balance sheets suggests that the household sector is vulnerable to a severe decline in home prices (Fuster, Guttman-Kenney, and Haughwout, 2018). Lessons drawn from the financial crisis suggest guiding principles for mortgage market reform that would: reduce the hardships and disruptions associated with defaulting, lessen the consequences of distressed systemically important financial institutions, dampen the propagation of macroeconomic shocks through the mortgage market, and mitigate housing-related risks to homeowners and households more broadly.

Background

While there are many types of goals that might be achieved through mortgage finance reform and related policy changes, we focus in this paper on ways to reshape mortgage policy so as to reduce risks to households. Drawing lessons from the financial crisis is a natural way to approach this issue given that mortgage-related issues were a central source of the hardship suffered during the crisis and recession that followed. This section provides some background to set up that discussion. We first discuss what types of bad outcomes for households can be influenced by mortgage policy. We then provide a broad categorization of the factors that can drive such outcomes.

Mortgage Policy and Costly Outcomes for Households

The most direct way in which better mortgage policy might be able to limit bad outcomes for households is by reducing the costs that occur when homeowners suffer shocks that leave them unable to make their mortgage payments. We note that the option to default offers some protection to the balance sheets of homeowners because when home prices have declined to the point of taking borrowers underwater, they can improve their net worth by defaulting while leaving lenders to lose the difference between the unpaid balance on the mortgages and the value of the home. However, this protection for household balance sheets does not take into account other types of potential costs, such as dislocation, loss of access to credit, and the psychic and moral costs of renegeing on a contract.

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Households are also taxpayers, which presents yet another way through which mortgage policy can influence costs borne by households. The U.S. government currently provides some degree of backing for 69 percent of new mortgages, up from about one-third in 2006 (Urban Institute 2018). This type of support keeps mortgage rates lower than they otherwise would be and limits the default-related losses to lenders or investors who are funding these mortgages. Although borrowers pay fees to cover the expected cost of such guarantees, taxpayers stand at the ready to back losses should there be an unexpectedly large wave of defaults. To be sure, as we discuss below, there are important benefits from having the government (and thus taxpayers) serve as a backstop in the face of truly adverse macroeconomic and housing market developments. But, we should also be seeking to limit the frequency of such episodes.

Challenges in accessing mortgage credit occur even in normal times—analyses of loan denial rates by Avery, Brevoort, and Canner (2006) and Li and Goodman (2014) suggest that some types of households face more restricted access to credit than others (after controlling for observable factors that reflect their ability to repay the loan) on an ongoing basis. Addressing this issue is an important policy goal, but we view it as outside the scope of this paper as it represents a longstanding deficiency of the financial system rather than a source of risk for households. Instead, we focus on whether better mortgage policy can reduce the episodes of unduly limited access to credit for the population as a whole that can arise if financial institutions tighten their lending terms and standards in a downturn by more than is warranted by the deterioration in economic conditions. In such scenarios, the costs include both the direct burden on households who have lost access to loans because of the excessive pullback in credit supply and the indirect fallout from amplifying the broader downturn.

Factors that Lead to Costly Mortgage Outcomes

Many factors influence the likelihood that the costly outcomes discussed above will occur. They can be grouped broadly into the following categories:

- *Idiosyncratic economic risks facing households.* Even in normal times some borrowers are going to be more likely than others to default or be forced to sell their homes to prepay their mortgages. Some households are more likely than others to suffer job losses and reductions in their incomes arising from other circumstances (such as divorce). The likelihood of large unexpected expenses—such as unanticipated health care costs—that use funds that otherwise would go toward mortgage payments also varies across households.
- *Aggregate economic risks.* The economic environment can change in ways that expose all mortgage borrowers to a greater risk of having to default or prepay. Elevated rates of aggregate job loss during recessions expose more households to the risk of a disruption or decline in income. Declines in home prices that might accompany a recession lead to greater odds that households struggling to make their mortgage payments will have to default rather than prepay as there will be more “underwater” mortgages. In addition to directly increasing the number of households facing mortgage payment problems, a period of elevated job loss can lead mortgage lenders (particularly if financially weakened) to tighten the supply of credit, making the economic downturn yet worse.
- *Institutional factors related to mortgage markets.* Institutional features of mortgage and mortgage-related financial regulation influence the supply of mortgage credit, bearing on whether access to mortgages is unduly limited in normal times and the degree to which access varies with the cycle. Relevant institutional features include the design of the primary and secondary mortgage markets and government mortgage-related entities such as the government sponsored enterprises (GSEs) and the Federal Housing Administration (FHA). A wide range of financial

regulations influence credit supply—from required bank capital buffers to restrictions on nonbank securitization activity and liquidity requirements for nonbank mortgage lenders.

Institutional factors, particularly the design of government mortgage-related entities, also matter for mortgage-related risks to taxpayers. In the current system, for example, the GSEs have limited capital buffers such that they might need to draw off general government funds to make good on the guarantees they have provided if unexpectedly large numbers of borrowers default or because they have suffered unanticipated losses in their operating income or hedging activities.

- *Bad actors.* Mortgage payment problems and limited access to credit do not always stem from fundamental economic risks or the design of the mortgage system and its regulations. They can also be the result of financial entities or actors that are behaving in manners that circumvent the way the system is designed, such as predatory lenders and lenders that discriminate. The full scope of remedying these problems are not directly addressed in this paper.

Six Lessons from the Financial Crisis and their Implications

The financial crisis highlighted a range of ways in which the existing U.S. mortgage system exposed households to risk, in some ways directly and in other ways indirectly through the interaction of the mortgage system with the economic environment. Some important reforms have already occurred in response to these vulnerabilities. But, in looking to future mortgage policy changes, we believe there is more to be learned. The episode highlights some features of the existing system that need to be preserved as well as areas where additional reforms could further minimize bad outcomes, fill in gaps that leave households vulnerable to shocks, and better insure households against risks.

LESSON 1. The procyclicality of mortgage credit can drive and amplify business cycles.

Mortgage credit played a central role during the housing boom and bust. The combination of an abundance of low-cost credit and rapidly rising home prices in the mid-2000s led homeowners to over-extend themselves (Mian and Sufi, 2011). The cutback in the supply of mortgage credit after home prices fell is widely viewed as contributing to the severity of the recession and the weakness of the recovery that followed (see, for example, Mian, Rao, and Sufi, 2013). The potential for cycles of credit to drive business cycle is underscored by research that looks beyond the Great Recession—Jordà, Schularick, and Taylor (2016) examined business cycles in 17 countries over as many as 140 years and find consistent patterns of credit booms being followed by financial crises and recessions. See also Piazzesi and Schneider (2016) for a review of the theoretical channels through which housing and mortgages can influence the business cycle.

Even in business cycles that are not explicitly driven by swings in credit supply, mortgage credit can play an important role amplifying the highs (making them less sustainable) and the lows (leading to deeper and more protracted economic slumps). Private lenders will tend to loosen mortgage standards in a strong economy, boosting housing demand, which, in turn, will increase housing investment, home prices, and consumption (via housing “wealth effects”). The reverse happens in a weak economy—the tightening of credit supply by private lenders reduces housing demand, housing investment, home prices, and consumer spending more than would be expected based on economic conditions alone. This amplification explains, for example, why housing investment growth is so much more volatile than GDP growth (Figure 2).

It is important to recognize that the Great Recession could have been much worse absent the government mechanisms that helped prevent an even larger contraction in the supply of mortgage credit. For example, the implicit and explicit government guarantees on GSE and GNMA mortgage-backed-securities (collectively known as “agency MBS”) allowed for mortgage credit to flow to households even though

investors were looking for less risky places to put their money.² Likewise, the availability of low down payment FHA loans through the Federal Housing Administration (FHA) meant that qualified borrowers who had lost access to such loans after the private nonprime loan market collapsed could still get mortgages. Indeed, the FHA share of mortgages shot up during the recession (Figure 3). These government mechanisms helped support the flow of mortgage credit during the crisis and recession, keeping housing investment, home prices, and consumption higher than they otherwise would have been. Preventing an even larger decline in home prices was particularly important as it limited the hardships of negative equity for homeowners and helped mortgage lenders stay in business.

Implications. The experience of the recent crisis highlights the importance of the mortgage finance system including mechanisms like those in the existing system that can mitigate the contraction in private mortgage credit that tends to occur in economic downturns (Dokko and Valverde, 2016). Of course, the GSEs and the FHA do not cover all types of mortgages and, moreover, the pullback in lending occurred in many different types of credit markets. Results in Bernanke (2018) suggest that, notwithstanding the step-up in government mortgage lending, the fallout from the broader financial panic induced by the mortgage crisis greatly increased the severity of the recession. For this reason, it is also important that central banks retain “lender of last resort” powers.³

Policies and mechanisms that help to reduce the potential for the easing of mortgage credit conditions in good times to lead to excessive risk-taking by households and financial institutions are also needed. The post-crisis efforts to ramp up macroprudential regulation, including the new responsibilities assigned to the Federal Reserve along these lines as well as the establishment of the Consumer Financial Protection Bureau, are constructive steps in this direction. Likewise, the higher bank capital and liquidity standards that have been put in place since the crisis should serve to dampen the tendency for credit supply to expand during a boom (and also create larger buffers to limit the weakening of financial institutions when the economy slumps).

Finally, given the ongoing evolution of the financial system, policymakers need to monitor and address developments outside the banking system that could increase the procyclicality of mortgage credit—for example, Kim, Laufer, Pence, Stanton, and Wallace (2018) document a post-crisis shift of FHA lending toward nonbank mortgage lenders, which tend to be more thinly capitalized, and call for more attention to this issue in the mortgage finance reform debate. In addition, Bhutta and Keys (2018) explore how moral hazard in the private mortgage insurance market facilitated excess risk-taking by the GSEs during the mid-2000s boom.

LESSON 2: The institutional design of the mortgage market affects the transmission of monetary policy to households.

As described in Dudley (2012), one channel through which countercyclical monetary policy typically helps support a weak economy is by allowing homeowners to lower their mortgage payments, including both those with adjustable-rate mortgages (ARMs) and those with fixed-rate mortgages (FRMs) who refinance their loans. These homeowners will be able to more easily make the lower payments and they will also have more cash available to spend on other things, which boosts aggregate demand, or to pay

² GNMA securities are backed by loans insured by the FHA and the Department of Veterans Affairs. More generally, the guarantees on agency MBS allows lenders to forward-sell loans to the “to be announced” (TBA) market, which provides a liquid funding source for mortgages.

³ For example, the Term Asset Loan Facility (TALF), set up by the Federal Reserve in 2008 as part of its lender-of-last-resort activities, helped to stabilize the asset-backed-securities market that provides funding for consumer credit (Agarwal, Barrett, Cun, and De Nardi, 2010). The TALF may help explain why the supply of consumer credit recovered relatively quickly in the crisis (especially when compared with mortgage credit).

down debt.⁴ (The boost to aggregate demand assumes that refinancing homeowners have higher propensities to consume than the investors who provide the funding for mortgages, but this assumption is viewed as a reasonable one.) Many empirical studies support the potential importance of this channel. For example, Fuster and Willen (2017) show that lower mortgage payments help households avoid delinquency and foreclosure during bad times.⁵ Likewise, Abel and Fuster (2018) and Di Maggio, Kermani, Keys, Piskorski, Ramcharan, Seru, and Yao (2017) present evidence suggesting that lower mortgage payments help support consumption of non-housing goods and services.

During the Great Recession, this channel of monetary policy was obstructed not only by the procyclical tightening of mortgage standards but also by the prevalence of negative equity, as lenders are generally unwilling to refinance a mortgage that exceeds the value of the underlying home. As discussed in a subsequent lesson, the government put the Home Affordable Refinance Program in place during the crisis to facilitate the refinancing of underwater fixed-rate mortgages, but it was slow to ramp up and its reach was limited. Indeed, Beraja, Fuster, Hurst, and Vavra (2018) present evidence suggesting that reductions in interest rates spurred less refinancing activity and less spending in regions with higher negative equity during the recent crisis. The potential for negative equity to mute the effectiveness of monetary policy is a particularly important issue both because the regions with the most negative equity are likely to be those most in need of countercyclical support to demand and (relatedly) because these regions may have higher propensities to spend out of savings from refinancings than areas where the economy is healthier and households are less stretched.

Implications. The key institutional feature of the U.S. mortgage system that creates this challenge is the widespread use of fixed-rate mortgages. About 85 percent of American mortgage holders have some form of fixed-rate mortgage (Wilson, 2016). Encouraging more use of adjustable-rate mortgages (ARMs) could enhance the effectiveness of monetary policy in future recessions, but these mortgages pose other types of risks for households. Households with ARMs, for example, will face an unanticipated reduction of cash-flow if nominal interest rates unexpectedly rise.⁶ These risks need to be weighed before putting policies in place that encourage households to make more use of ARMs.

An alternative way to enable more homeowners to benefit from monetary easing is to make the *ex post* renegotiation of mortgage contracts more streamlined and less costly. This objective could be achieved by, for example, introducing fixed-rate mortgages that allow for the automatic refinancing of fixed-rate mortgages—even if the borrowers are underwater as suggested by Agarwal, Amromin, Ben-David, Chomsisengphet, Piskorski, and Seru (2016) and Di Maggio et al. (2017). Such mortgages might particularly benefit the GSEs (and presumably whatever government entity replaces them after mortgage finance reform), who bear some or all of the credit risk of the mortgages that they guarantee, because the losses associated with borrowers automatically refinancing into lower payments might, in certain circumstances, be smaller than the losses associated with some portion of these borrowers having to default. Similarly, mortgages that allow for countercyclical adjustments to payments could be developed. For example, Guren, Krishnamurthy, and McQuade (2018) and Eberly and Krishnamurthy (2014) propose having fixed-rate mortgages that can be converted to adjustable-rate mortgages even if the loan is

⁴ In recessions where home prices do not broadly decline (as was the case with the 2001 recession), refinancing homeowners can not only lower mortgage payment but also extract home equity to pay down debt or spend on other things. See Canner, Dynan, and Passmore (2002) for a discussion of how the proceeds of cash-out refinancing were used in the 2001-2002 refinancing boom.

⁵ Scharlemann and Shore (2017) also demonstrate a link between the size of mortgage payments and the likelihood of mortgage default.

⁶ Even an expected rise in rates can inflict hardship on holders of ARMs if they are cash-constrained, as discussed by Johnson and Li (2014). Moreover, Bucks and Pence (2008) show that many ARM holders do not understand the degree to which their payments can change with interest rates.

underwater. Of course, the gain in borrower welfare would need to be weighed against the costs of such mortgages, including the additional complexity for most borrowers – more research needs to be done to evaluate this tradeoff.

The case for mortgage contracts that avoid the need for refinancing when interest rates fall is arguably bolstered by other institutional features of the mortgage market that appear to blunt the transmission of countercyclical monetary policy via refinancing. In a paper that examined the degree to which changes in market interest rates are passed through to mortgages borrowers, Fuster, Lo, and Willen (2017) showed that pass-through is lower when refinancing volume is high, likely reflecting capacity constraints. Scharfstein and Sunderam (2016) show that mortgage rates and refinancing activity are less sensitive to movements in MBS yields in markets where mortgage lending is more highly concentrated. If more mortgages had their payments automatically, capacity constraints on refinancing would be less relevant and the adjustments might be less sensitive to local market concentration.

LESSON 3: Negative equity not only imposed large direct costs on households, it impeded the deployment of homeowner assistance

According to Zillow, the number of single-family homes with mortgages in negative equity (meaning they exceeded the value of the underlying home, also referred to as being “underwater”) peaked at more than 16 million in 2011 (Figure 4). As discussed above, homeowners with negative equity generally cannot refinance their mortgages. More broadly, negative equity presents risks to households because it constrains their options when they experience financial difficulties. If job loss, divorce, or a health shock affects a household, negative equity prevents them not only from refinancing but also from selling their home to get out of trouble (Foote, Gerardi, and Willen, 2008).

The government put in place two types of housing assistance programs to help households struggling to make their mortgage payments and with negative equity during the financial crisis: (1) large-scale refinancing programs and (2) mortgage modification policies. However, mortgage assistance reached distressed borrowers very slowly, if at all. Indeed, federal programs created to allow large-scale refinancing or loan modifications among borrowers with little or no equity saw weak take-up through mid-2011 (Agarwal et al. 2017, Federal Reserve Board, 2012).

Widespread negative equity contributed to delays in implementing these programs in part because it constrained the set of politically feasible solutions. In particular, policy discussions had to balance concerns about fairness and moral hazard in designing refinancing and modification programs for underwater borrowers. Targeting the assistance to the subset of underwater borrowers who needed it rather than those who might strategically default was an important consideration.⁷ Moreover, choosing how to allocate the costs of negative equity (and foreclosure) across borrowers, taxpayers, and financial institutions, left policymakers balancing competing interests. As a result, the federal loan modification programs featured complex screening mechanisms to separate the truly deserving from the strategic defaulters. For example, borrowers had to be in “imminent default” and pass an “NPV test.” In turn, struggling borrowers had a difficult time understanding whether they qualified for assistance. The complexity also hampered lenders’ willingness to expediently process paperwork and comply with the parameters of the loan modification programs. And the government mortgage assistance programs received extensive criticism for being both too generous and too restrictive.

⁷ Strategically defaulting (sometimes also described as “ruthlessly defaulting”) is a term used to characterize cases where borrower choose to default, thinking they will come out ahead financially, as opposed to having no choice but to default because they have insufficient resources to make the payments on the mortgage.

Implications. We note that, all else equal, being in negative equity will not necessarily cause immediate problems for mortgage holders or lenders. Strategic defaults appear to have been isolated instances, consistent with evidence in Bhutta, Dokko, and Shan (2017) showing that ruthless default behavior was much more limited than simple economic theory would suggest. Rather, defaults were concentrated among mortgage holders that also experienced income shocks making it difficult for them to make their mortgage payments (Gerardi, Herkenhoff, Ohanian, and Willen 2013, Ganong and Noel 2017).⁸

Given the political frictions related to negative equity that slowed the timely deployment of assistance to homeowners, there is a strong argument for promoting mortgage innovation that would reduce the frequency of negative equity arising. To this end, many have proposed changes to the design of mortgage contracts that would insure households against large house price declines. Shiller, Wojakowski, Ebrahim, and Shackleton (2017) argue for “continuous workout mortgages,” which automatically adjust the loan balance and monthly payment based on changes in house prices. The adjustments happen in a way that the borrower is never underwater. Caplin, Cunningham, Engler, and Pollock (2008) and Mian and Sufi (2014) proposed limiting the number of borrowers who become under water through shared appreciation mortgages, which facilitate more efficient risk-sharing between borrowers and lenders. Notably, with these mortgages, borrowers are insured against house price declines in exchange for sharing house price gains with the lender. Pinto, Oliner, and Peter (2017) offer a somewhat different approach through their “wealth-building home loan,” whose amortization schedule is faster than that for a 30-year fixed-rate mortgage; with these mortgages, homeowners accumulate equity much faster, giving those with small down payments the opportunity to self-insure against large house price declines.

The worries about moral hazard and the resulting political frictions might also have been smaller if the mortgage modifications offered by the government’s programs had been more limited in size. Arguably, the period for which modifications typically lowered mortgage payments was much longer than the period for which the income of distressed borrowers could be expected to be depressed by the economic downturn. A shorter-lived reduction in payments might have provided the needed relief while also creating less incentive for strategic default.

LESSON 4: A variety of other factors also hindered efforts to reach distressed homeowners with government assistance

Negative equity was not the only factor that slowed or limited the ability of the government housing programs to help distressed homeowners. Despite policymakers’ best efforts, there were gaps (at least initially) in the design of the programs. For example, lenders were reluctant to modify loans because, many were uncertain about how “troubled debt restructuring” would be treated under accounting rules. Many borrowers failed to meet the eligibility criteria for modification programs due to missed payments. And, importantly, the eligibility criteria for the federal government’s loan modification program excluded borrowers who had experienced sharp declines in income due to job loss, an important driver of mortgage

⁸ Even if political obstacles had not stood in the way of using taxpayer funds to pay down the mortgages of underwater homeowners who were able to make their payments, there is little evidence that such policies would have materially reduced defaults or have been an efficient way to conduct fiscal stimulus. Scharlemann and Shore (2016) found that the principal forgiveness included in some HAMP modifications did reduce defaults for some types of borrowers but that the effects were small enough to imply a high cost to the policy—their results imply that the government spent \$320,000 in subsidies per foreclosure avoided in the 2-3 year period they studied. Eberly and Krishnamurthy (2014) use a theoretical model to argue that reducing mortgage principal is not an efficient way to the government to reduce mortgage defaults. The low effectiveness of principal reduction for reducing defaults suggests also that allowing mortgage cramdowns as part of bankruptcy would have had a limited effect.

defaults.^{9,10} In 2009, only 64,000 mortgage modifications were started as part of the government’s Home Affordable Modification Program; in 2010 the number of cumulative modifications grew to 600,000, a much larger number but still only about one-third of the total number of HAMP modifications started through 2017 (Figure 5).

The reach of the Home Affordable Refinance Program, designed to help underwater borrowers refinance their mortgages, was slow at first in part because lenders initially feared that the GSEs would “put back” newly-refinanced loans and so did not aggressively market refinancing opportunities to their borrowers. (This problem dissipated after the GSEs agreed in late 2011 not to enforce the provisions of their contracts with lenders that would have allowed them to force the lenders to take back troubled loans). In addition, borrowers wishing to refinance often faced smaller (if any) reductions in their mortgage rates through refinancing because the GSEs applied loan-level pricing adjustments (LLPAs) to higher-risk borrowers (that is, those with higher loan-to-value ratios).

Some have argued that mortgage servicers were slow to modify and refinance mortgages borrowers because of capacity constraints or problematic incentives in their contracts. While complaints about servicers holding back loss mitigation activity are common, studies are mixed on the degree to which misaligned incentives among servicers played a role (Campbell, 2013). Also, there is little evidence on how capacity constraints among servicers inhibited their ability to widely apply loss mitigation tools to deal with large numbers of mortgage defaults.

Implications. In the next mortgage crisis, it will be critical to deploy assistance to distressed borrowers quickly and in a scalable matter. Obviously avoiding the idiosyncratic design mistakes that slowed assistance in the last crisis will be an important component to doing so. Two more general points apply with respect to servicers. First, the large differences across servicers in how they addressed defaults suggests scope for designing a mortgage servicing architecture that deploys assistance quickly at a large scale. The Consumer Financial Protection Bureau’s servicing guidelines are a step in the right direction, as are the industry’s efforts to improve servicing. The role of specialty servicers for dealing with delinquent loans may also help. Second, the mortgage products discussed earlier that automatically refinance or modify in a downturn could help by taking servicers out of the mix altogether.

LESSON 5: Stabilizing a weak housing market is not just about “housing” policy.

As discussed above, special government programs put in place during the crisis helped homeowners avoid foreclosures and realize the benefits of lower market interest rates by facilitating the refinancing of mortgages. However, struggling homeowners and the housing market were also greatly helped by the general strengthening of the economy that resulted from countercyclical monetary and fiscal policy. The stronger economy led to less job loss than would otherwise be the case. In turn, fewer homeowners suffered income disruptions that would have otherwise impaired their ability to make their mortgage payments.

Likewise, social insurance programs like food stamps, Medicaid, and unemployment insurance help homeowners continue to make their mortgage payments in the face of income losses, whether because of aggregate economic shocks or idiosyncratic economic shocks. For example, Hsu, Matsa, and Melzer

⁹ The NPV test considers whether the NPV of a modification is higher than the NPV without, subject to the restriction that the modified payment takes the borrower to a certain DTI threshold. Hence a borrower who loses income due to job loss will never pass an NPV test because no amount of modification/reduced payment will allow him to get to the DTI threshold.

¹⁰ Another possible constraining factor with the NPV test was the requirement that it should be applied to individual loans rather than to securities.

(2018) estimate that the expansion of unemployment insurance during the Great Recession prevented more than 1.3 million foreclosures, a figure larger than the number of HAMP modifications, and helped to stabilize the housing market. Similarly, Medicaid expansions under the Affordable Care Act have reduced household financial distress (Gross and Notowidigdo 2011; Hu, Kaestner, Mazumder, Miller, and Wong 2018).

Implications. It is important to recognize that the housing and mortgage-related policies that are the focus of this paper are a complement to other types of economic policy tools that mitigate aggregate economic risks to homeowners and households. It is the unfortunate case, that traditional countercyclical macroeconomic tools may be more limited and harder to use in the future. As many commentators have noted (see, for example, Peek, Rosengren, and Tootell, 2018), conventional monetary policy is more likely to be limited by the “zero lower bound” on nominal interest rates and policymakers may be reluctant to use fiscal policy because of the already high level of government debt by historical standards. The situation thus warrants more refinement of alternative tools of monetary policy and more thinking about what levels of government debt are sustainable as well as how to most efficiently target countercyclical fiscal policy.

In the interest of reducing risks related to both macroeconomic shocks and idiosyncratic economic shocks, policymakers also should look to preserve existing social insurance programs and be willing to expand safety programs during recessions.

LESSON 6: The ongoing conservatorship of Fannie Mae and Freddie Mac leaves taxpayers exposed to a risk of large losses in the mortgage market.

On September 6, 2008, the U.S. Treasury Department brought Fannie Mae and Freddie Mac into conservatorship, which required a \$187.5 billion taxpayer purchase of their senior preferred stock (Frame, Fuster, Tracy, and Vickery, 2015). Although the arrangement was explicitly designed to be temporary (Paulson, 2009), these government-sponsored enterprises (GSEs) remain in conservatorship, with taxpayers currently providing a \$254.1 billion backstop. Should there be another large financial crisis, additional taxpayer losses would likely exceed \$40 billion under the current arrangements (FHFA 2018). During the ten years of conservatorship, FHFA and Treasury have taken steps to minimize losses and make the losses remote and large only in catastrophic scenarios, but taxpayers still remain exposed. Fannie Mae and Freddie Mac may take draws from taxpayers due to fluctuations in income even in normal times. Changes to accounting rules for loan-loss reserves may also lead to draws.

Implications. When taxpayers bear risks on behalf of the mortgage market, important questions arise on the extent to which they should bear the risks. As discussed in Lesson 1, using taxpayer resources to offset the effects of a sharp contraction in the ability or willingness of private actors to provide liquidity to the mortgage market during severe recessions is likely to benefit taxpayers on net because it avoids the costs of an even larger downturn. Thus, under certain circumstances, taxpayers must play this role, as they did during the rescue of the GSEs in 2008. One way to avoid having taxpayers exposed to risks from the mortgage market during normal times or mild recessions would be for the private sector to take a “first-loss” position, meaning that taxpayers would only step in during catastrophic circumstances.¹¹ (Note, though that some, including Taylor, 2016, have advocated for larger taxpayer exposure to credit risks in order to promote home-buying among underserved households.)

Discussion

¹¹ See Wachter (2015) for a summary of such proposals.

In the previous section, we reviewed six lessons from the financial crisis, with an eye toward identifying potential guiding principles for policymakers as they undertake mortgage market reforms, including comprehensive housing finance reform. In particular, we are focused on guiding principles that would reduce the risks faced by homeowners and, to some extent, households more broadly. (Of course, there are other many other goals that policymakers might want to achieve in refining mortgage policy so the full set of guiding principles is potentially much larger.)

Both the individual hardship and the macroeconomic fallout from the swings in mortgage credit that occurred during the crisis and in other historical episodes (lesson 1) argue that one guiding principle should be retaining and, ideally, strengthening mechanisms that reduce swings credit over business cycle. Doing so is likely to be as or more important in future as in the past given the likely constraints on the other types of policy that can reduce bad outcomes for households in a downturn (lesson 5). In general, this guiding principle means that the government will need to continue to play an important role in the mortgage finance system such that it can easily intervene to ramp up mortgage lending in a crisis. Of course, such interventions would likely entail costs for taxpayers but there would be sizable benefits to taxpayers from avoiding a more severe recession. Some type of ongoing government role in mortgage markets would also likely make it easier to deploy assistance to distressed homeowners once in a crisis. We leave it to other papers and proposals to wrestle with the moral hazard and financial engineering issues that arise in designing the appropriate government backstops. But, we do note that the risk of a GSE draw on Treasury funds even when the economy is stable under the current conservatorship (lesson 6) suggests clear room for improvement over the status quo.

An additional role for government suggested by lesson 1 is setting mortgage regulation to limit the upswings in mortgage credit that can amplify booms and make them less sustainable. In judging the right level of such regulation, policymakers will need to learn more about both *when* regulation ought to “lean against the wind” and *by how much*. They will also need to balance the benefits of doing so with the costs of limiting innovation and raising the compliance burden on financial institutions. Research that helps policymakers evaluate these trade-offs would be constructive.

The difficulties that many homeowners with fixed-rate mortgages had refinancing so as to benefit from lower interest rates during the crisis (lesson 2) suggest that another guiding principle would be to make the *ex post* renegotiation of mortgage contracts more streamlined and less costly. These difficulties, which obstructed a key channel through which monetary policy traditionally supports the economy, were particularly acute in the last crisis because of the tightening of credit conditions and the prevalence of underwater mortgages. Alternative forms of mortgages that would facilitate mortgage payment reductions in a downturn have been proposed, but the fact that such mortgages are not already widely available suggests that cost and regulatory barriers may be an obstacle. The trade-offs associated with reducing cost (perhaps via a subsidy) and lowering regulatory barriers would need to be carefully considered. So too would the consumer financial protection issues that might arise from promoting new and potentially more complex mortgage products. Another consideration should be the possible negative consequences of reforms that make refinancing and equity extraction easier during periods with booming house prices or low interest rates (Bhutta and Keys, 2016).

The problems that underwater homeowners had refinancing their mortgages (lesson 2) and the challenges related to negative equity that arose in designing programs for deploying mortgage assistance (lesson 3), along with other hardships that can occur with negative equity, suggest that another guiding principle should be to reduce the likelihood that borrowers will fall underwater in the first place. Tamping down the tendency of mortgage credit to amplify booms (the first guiding principle) would help to accomplish this objective in that it would reduce the occurrence of home price bubbles. We also pointed to new mortgage products here that might help accomplish this objective, although, as with new mortgage products that streamline the *ex post* renegotiation of mortgage contracts, subsidies or regulatory changes may be

needed to make such products widely available and there are similar consumer protection issues surrounding their potential complexity.

Finally, the last crisis also illustrated the importance of deploying assistance to distressed borrowers quickly and in a scalable matter (lesson 4); reducing obstacles that stand in the way of doing so is another guiding principle when it comes to future changes in mortgage policy. There are few apparent downsides to studying and then avoiding the particular mistakes that slowed the deployment and take-up of the housing assistance programs used in the last downturn. It may also be worth revisiting the merits of policy options that were not pursued as political constraints and popular opinion may be quite different in the future.¹² Of course, in an ever-evolving financial system, there are likely to be at least some unanticipated shortcomings of any housing assistance program that needs to be developed in a limited time frame should another downturn occur.

¹² See Brophy and Godsil (2009) for examples of such proposals, including one by Bart Harvey and Barry Zigas that explores the countercyclical role of the Department of Housing and Urban Development during housing downturns.

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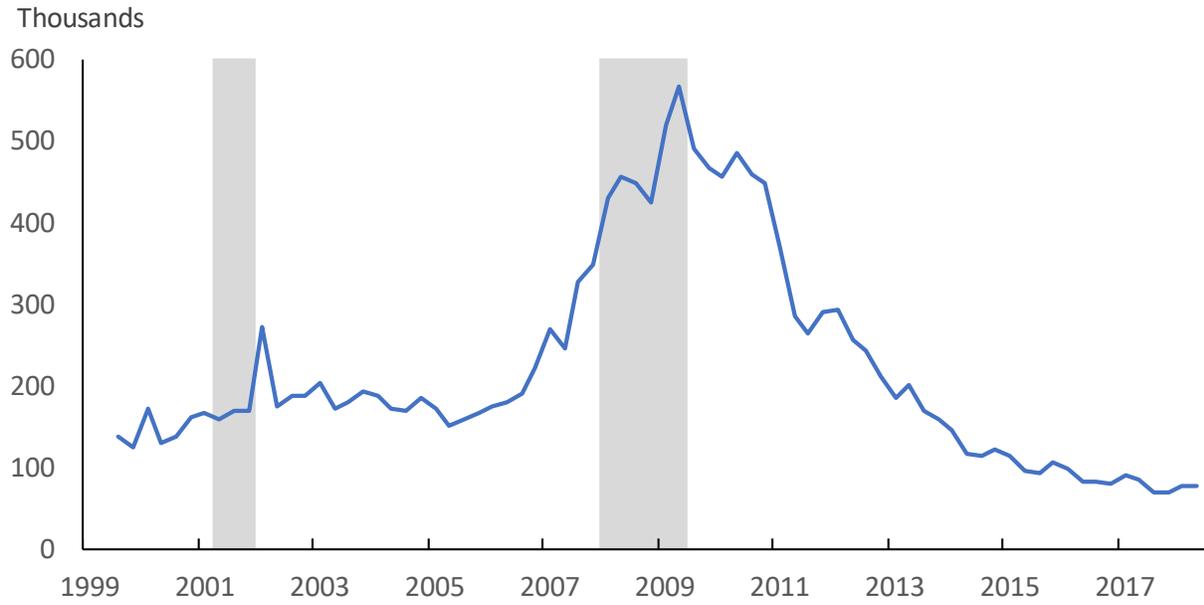
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Figure 1

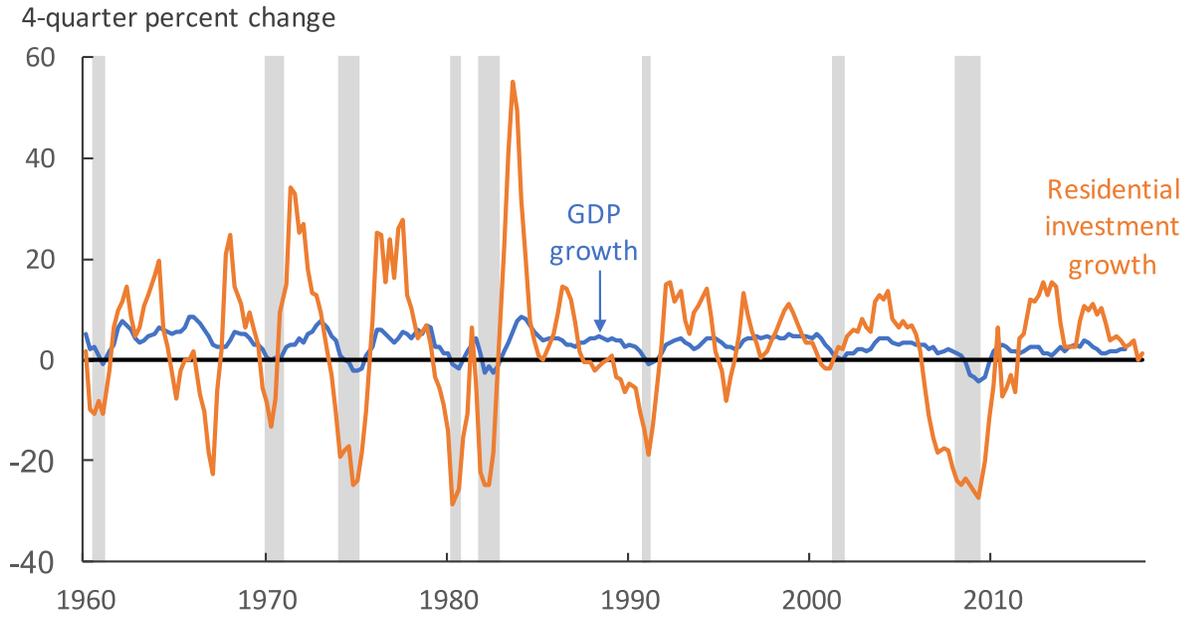
Number of Consumers with New Foreclosures



Source: Federal Reserve Bank of New York; Shaded Areas Correspond to Recessions.

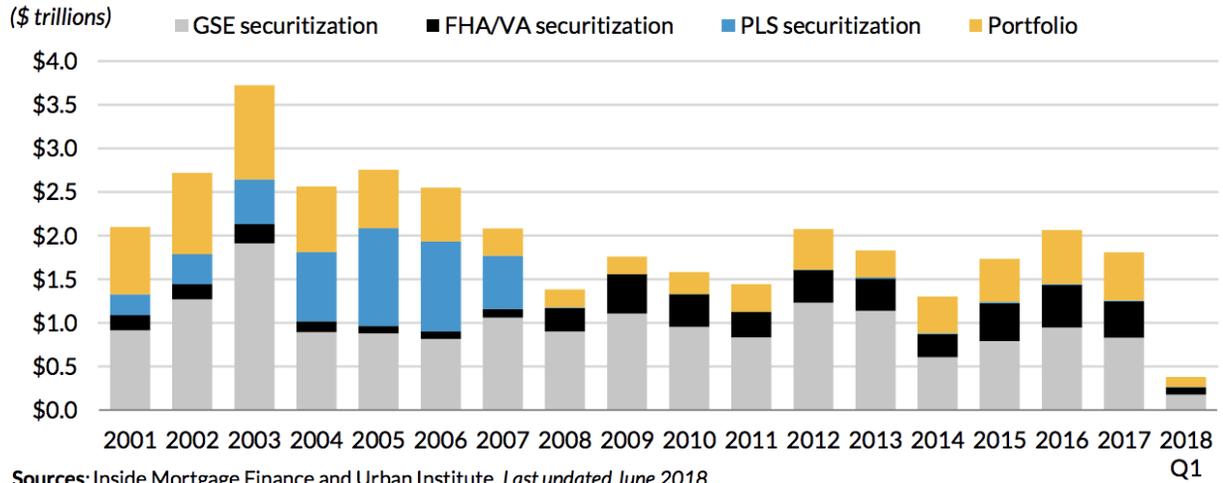
Figure 2

Growth in Real GDP and Residential Investment



Source: U.S. Department of Commerce; shaded bars correspond to recessions.

Figure 3
Mortgage Originations



(Reprinted from the Urban Institute Housing Finance Policy Center Chartbook)

Figure 4

Number of Underwater Homeowners

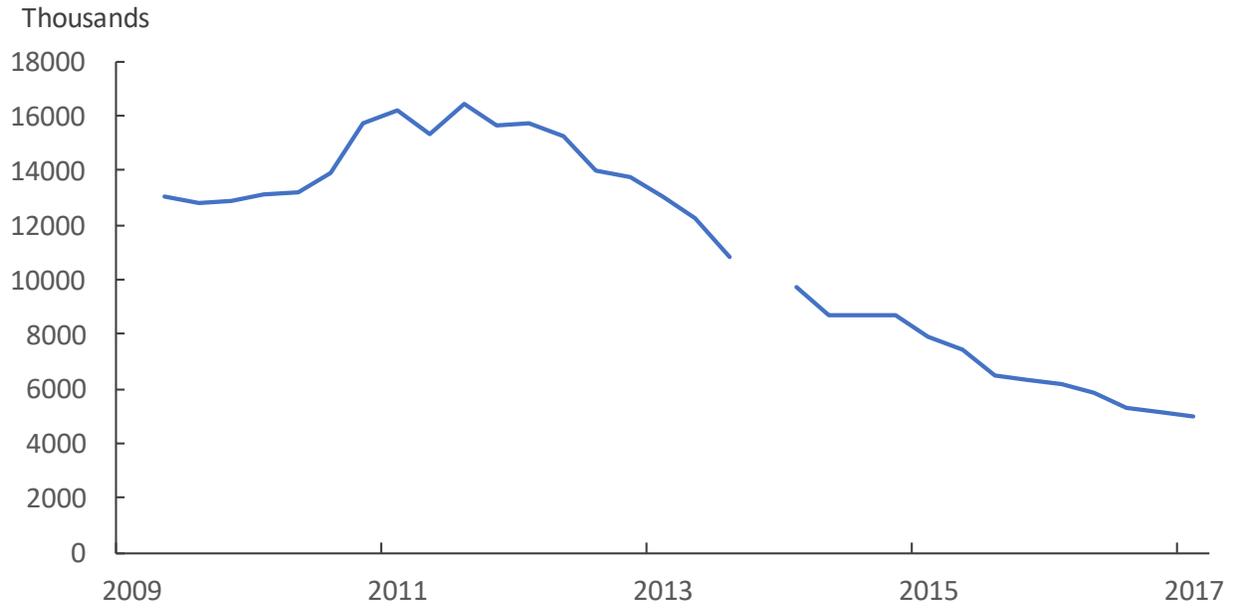
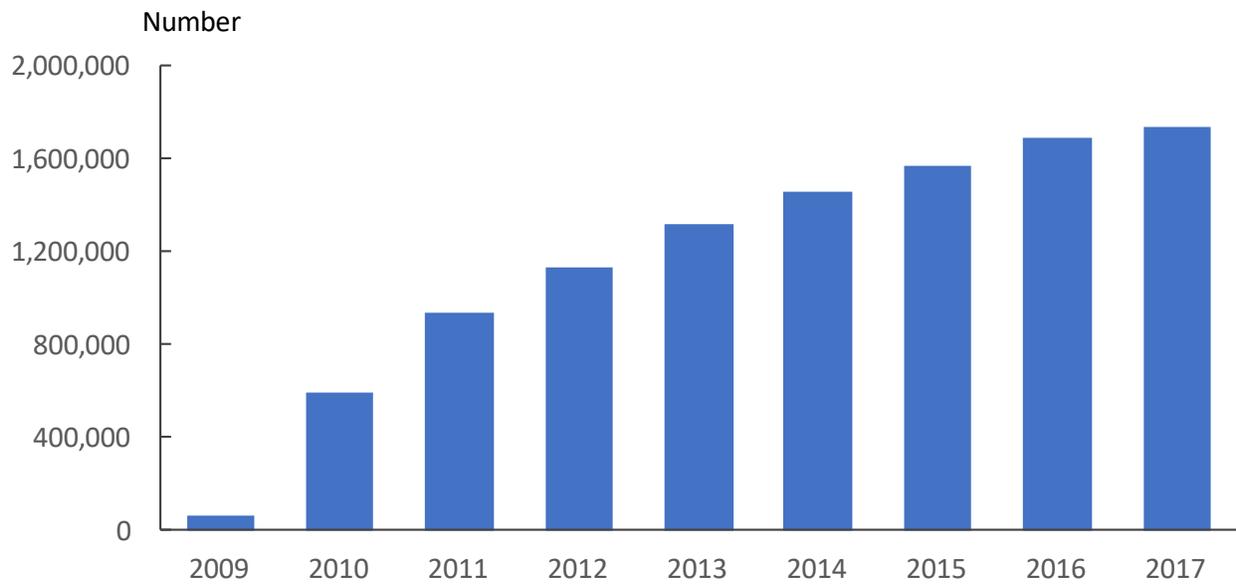


Figure 5
Cumulative HAMP Modifications



Source: U.S. Department of Treasury.