RESEARCH REPORT

Normalizing Forbearance

Alexei Alexandrov *Laurie Goodman* *Ted Tozer*

July 2022

URBAN INSTITUTE · ELEVATE · THE · DEBATE

ABOUT THE URBAN INSTITUTE

The Urban Institute is a nonprofit research organization that provides data and evidence to help advance upward mobility and equity. We are a trusted source for changemakers who seek to strengthen decisionmaking, create inclusive economic growth, and improve the well-being of families and communities. For more than 50 years, Urban has delivered facts that inspire solutions—and this remains our charge today.

Contents

Acknowledgments IV

Normalizing Forbearance 1

Evidence on the Causes of Foreclosures 3

Forbearances in 2020 and 2021 5

The Proposal to Make Forbearance an Integral Part of the Loss Mitigation Toolkit 7

Back-of-the-Envelope Cost-Benefit Analysis 14

Impact on Various Parts of the Mortgage Industry 20

Conclusion 22

Notes 24

References 30

About the Authors 34

Statement of Independence 36

Acknowledgments

This report was supported by the Housing Finance Innovation Fund, a group of organizations and individuals that support high-quality independent research that informs evidence-based policy development. We are grateful to them and to all our funders, who make it possible for Urban to advance its mission.

The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at urban.org/fundingprinciples.

Normalizing Forbearance

When borrowers encounter life events that disrupt their ability to make their mortgage payments over several months, foreclosure is often the result. Temporary forbearance can give many borrowers a chance to get back on track. In fact, foreclosure is often the worst outcome for the holder of the mortgage risk, the borrower, and the community. In this report, we propose expanding mortgage payment forbearance eligibility, in a cost-effective manner, to prevent tens of thousands foreclosures each year. Our proposal would also help borrowers avoid a hit to their credit history.[1] We designed our proposal to be minimally disruptive to the mortgage industry and not require congressional action or major rulemakings. Although it is not possible to project accurately how many foreclosures could be avoided in each economic scenario (we believe tens of thousands per year), our back-of-the-envelope analysis suggests that societal benefits outweigh the costs, even if less than 5 percent of borrowers entering forbearance avoid foreclosure as a result, at a small benefit or at most a minimal cost to the financial system (approximately 1 basis point a year in average interest rates, even if forbearances save no borrowers from foreclosure or default).

More concretely, we propose adding forbearance into the loss mitigation waterfall for a limited set of circumstances. The borrower would be able to contact their servicer and provide the necessary documentation at any time (instead of waiting until they are already late or missing payments), and the servicer would be obligated to extend forbearance for up to four months, without a negative report to the credit bureaus. The limited set of circumstances includes job loss, death of a coborrower, the start of divorce proceedings (including filing in court or with state authorities for legal separation or an alternative), or a health issue that qualifies for leave under Family and Medical Leave Act (FMLA).[2] The arrearage of the missed payments becomes a part of the loss mitigation waterfall, now in use for COVID-19 pandemic forbearances.[3] Just like with pandemic forbearances, the servicer would be responsible for advancing payments to investors and for the borrower's escrow of hazard insurance and property taxes, to be reimbursed later.

Overall, we believe forbearance could counteract a wide variety of income interruptions and expense shocks that lead to mortgage default, but it might be worthwhile starting with a narrow set of common and documentable life events to prove the program's value before expanding eligibility to include more types of events, longer durations, and eased documentation or technology-enabled alternative verification approaches.

Our proposal is based on two recent developments. First, forbearances appear to have performed well during the pandemic. Wide forbearance availability has been a major factor in preventing a foreclosure wave, with most borrowers exiting forbearance either by becoming current on their payments or by prepaying the mortgage. Second, new data and research in the past five years suggest that most foreclosures are triggered by income and expense shocks, as opposed to the previously prevailing double trigger and strategic default theories that hold that a foreclosure is the result of an underwater mortgage, potentially coupled with a life shock.

We show how our proposal passes a cost-benefit test under plausible assumptions. But it is impossible to do a full cost-benefit analysis on our proposal because we are missing a crucial component of such an analysis: what percentage of borrowers who receive such forbearance will avoid foreclosure because of forbearance? Such forbearance was not widespread before the pandemic; the closest analogues were natural disaster relief efforts and prepandemic programs that required borrowers to already be behind on payments. During the pandemic, forbearance was widespread, making it hard to separate the effects of forbearances from the effects of a strong labor market later during the pandemic, massive cash transfers, and home price appreciation. Accordingly, our cost-benefit analysis should be treated with caution.

Both underwriting and foreclosures are racially inequitable, contributing to the racial homeownership gap.[4] Our proposal should decrease the number of foreclosures and thus disproportionately help Black and Hispanic homeowners sustain homeownership.[5] Moreover, we believe that decreasing the likelihood of foreclosures across the board, through programs such as the one we are proposing, allows policymakers to expand the tight credit box without producing higher foreclosure rates, further reducing the racial homeownership gap (Goodman 2017). Accordingly, our proposal could help Fannie Mae and Freddie Mac advance on their recently released Equity Housing Finance Plans.[6]

We start with evidence on the causes of foreclosure, discuss the pandemic forbearance experiences (now that we have some evidence of their performance, albeit incomplete), and then outline our proposal. We use the pandemic experience and other data to do a back-of-the-envelope cost-benefit analysis. Finally, we discuss our proposal's implications for market participants and place our proposal in the broader context of homeownership and racial equity.

Evidence on the Causes of Foreclosures

Foreclosures have been studied for decades, but new data are changing researchers' perspectives. The first evolution in the research literature happened in the late 1990s, moving from old models that assumed foreclosures are typically the result of strategic borrower decisions (borrowers cease making mortgage payments when they are underwater; that is, they owe more than the equity in the home is worth) to new models that emphasize a "double trigger" (borrowers go into foreclosure when they are underwater and experience a life shock, such as a job loss, divorce, or medical expenses).

The second evolution has happened in the past five years, as it increasingly appears that strategic default is uncommon and that even a double trigger is considerably less common than previously theorized, with most foreclosures caused by life shocks, regardless of whether the borrower is underwater. The research is also increasingly conducted using better data from federal agencies and the private sector.

Strategic foreclosures and double trigger models (as they also involve underwater borrowers) suggest that the way to prevent foreclosures is to have a policy restoring borrowers' equity positions (e.g., forgiving a sufficient amount of the loan owed to bring borrowers back above water). Because these policies are expensive, they are less likely to pass a cost-benefit analysis, even though borrowers are somewhat less likely to default as a result.

In contrast, if foreclosures are driven by life shocks (potentially through a double trigger), a forbearance-based policy can be successful by giving borrowers time to weather a temporary shock. This can allow the borrower to get back on their feet or, in the worst-case scenario, give them time to sell the house without as much damage to their credit history and, as long as they are not underwater, to recoup their equity (Low 2021a).[7]

Review of the Evidence on the Causes of Mortgage Default

Consistent with some of the economic modeling traditions at the time, researchers initially focused on strategic default, the theory that borrowers cease making mortgage payments and go into foreclosure when their mortgage is underwater.[8] Better data—in particular, Federal Housing Administration (FHA) data—show that many underwater borrowers do not default. This empirical finding led to the development of double trigger models (Goldberg and Capone 1998), suggesting that borrowers needed to be both underwater and experiencing another life shock (typically leading to a decrease in income or increase in spending) (Ambrose and Capone 1998; Goldberg and Capone 1998).

The double trigger and strategic default views (with researchers trying to ascertain what share of borrowers behave as predicted by either of the two theories) largely prevailed until well after the financial crisis, when researchers started analyzing even better data than were available in the late 1990s and 2000s, and where negative equity was widespread. Gerardi and coauthors (2018), who relied on survey data and various definitions of ability to pay, confirmed that job loss is tremendously important (comparable with a 35 percent drop in equity). The authors also estimated that about 40 percent of borrowers might be acting strategically. But those data are far from perfect, with notable measurement error on which borrowers experience life shocks.

The most current advances analyze even better data than previously available. Ganong and Noel (2022) analyze JPMorgan Chase data linking borrowers' mortgage records to their checking accounts. The researchers also use a new statistical technique, juxtaposing defaulting above-water borrowers with defaulting underwater borrowers, and show that most of the time, the two sets of defaulting borrowers have similar income shocks (unlike nondefaulting borrowers), suggesting that the underwater distinction might not be as relevant as previously estimated. In particular, the researchers estimate that 70 percent of borrowers default solely because of a life shock, while only 24 percent default because of a double trigger (experiencing a life shock and being underwater), and 6 percent of borrowers default strategically (solely because of being underwater).

Recent research analyzing unique data (National Mortgage Database, or NMDB) from the Consumer Financial Protection Bureau (CFPB) and the Federal Housing Finance Agency (FHFA) goes even further in showing that life shocks are considerably more important than other considerations. The data link administrative records on mortgage performance and originations of 5 percent of the US population, up-to-date home values, borrowers' credit histories, and a specifically designed survey with a high response rate.[9] Unlike proprietary data from private lenders, the data are available to researchers from various federal agencies. Based on these data, Low (2021b, 33) argues that "when negative equity is rare—as it usually is—cash-flow default is several times more common than double-trigger and strategic default combined."

CFPB and FHFA data further show how much life shocks matter. Defaulting borrowers typically report simultaneous life shocks. About 50 percent of defaulting borrowers experienced job loss; another 50 percent experienced illness, disability, or death; and another 50 percent experienced an unexpected expense shock (Lambie-Hanson, Vickery, and Akana 2021). About 40 percent experienced separation or divorce, and another 40 percent experienced payments on other large debts (Lambie-Hanson, Vickery, and Akana 2021, figure 3).[10]

Moreover, some life shocks are mentioned more frequently by defaulters who eventually lose their home to foreclosure than by defaulters who recover to remain current, suggesting that some shocks are easier to recover from than others: "Health shocks and especially divorce are much more common among foreclosures, suggesting that these shocks may be particularly severe. Indeed, health shocks appear to drive slightly more foreclosures than job loss does," while "unexpected expenses, job loss, and other debt payments—the top three reasons listed for default—are notably less common among foreclosures than among defaulters who became current, suggesting that these shocks could often be comparatively mild" (Low 2021b, 17).

Forbearances in 2020 and 2021

The CARES Act, foreclosure moratoriums, and other government policies enacted in response to the pandemic enabled forbearances and stopped foreclosures for most mortgage borrowers starting in March 2020.[11] To qualify for forbearance, borrowers only had to attest that the pandemic presented a financial hardship. We argue below that hundreds of thousands of foreclosures were avoided during 2020 and 2021 (as opposed to simply postponed), saving borrowers, communities, and the loan risk holders vast costs. As of May 2022, the Federal Reserve Bank of Philadelphia reports that of the 8.68 million borrowers who have entered forbearance since March 2020, 92 percent have so far avoided foreclosure or redefault: 49 percent of the loans are performing, 28 percent have paid off, 7 percent are still in active forbearance, and 8 percent are delinquent or have defaulted.[12] One confounding factor, however, is that the forbearance policies coincided with historic home price appreciation and cash transfers (including extended unemployment insurance), making it hard to disentangle the stand-alone impact of forbearance policies.[13]

Macroeconomic conditions caused by the pandemic and government policies combined to produce expected changes. With the onset of the pandemic, mortgage delinquency rates (including borrowers delinquent but in forbearance) immediately jumped to more than 8 percent of mortgage borrowers—double the 4 percent in several preceding years and a level unseen since the Great Recession aftermath in 2010 (when delinquency rates peaked at 10 percent).[14] Most of the increase was attributable to borrowers in forbearance, with the share of borrowers in forbearance jumping from well under 0.5 percent in February 2020 to 8 percent by the end of May 2020.[15] Meanwhile, foreclosure starts crawled to a halt from 40,000 to 50,000 per month in 2019 (at that point, the lowest on record, as data series from Black Knight start in 2000) to less than 5,000 in a typical month for the pandemic period (Black Knight 2022, 5).

The key question at the time was how the borrowers would perform once forbearance (and various government policies that accompanied it) ended and whether forbearance was simply postponing a foreclosure wave.[16] Although some loans are still outstanding in forbearances (RADAR Group 2022) and foreclosure moratoriums ended around the beginning of 2022, we can already see results. Delinquency rates (including borrowers who are delinquent but are in forbearance) decreased to 4.11 percent by the second quarter of 2022, approximately the level in 2019.[17] Forbearances decreased to approximately 1 percent of outstanding mortgages.[18] And foreclosure starts were at 81,000 in the first quarter of 2022, considerably higher than during the pandemic moratorium but still at approximately half the 2019 level (already a historic low at that time).[19]

To summarize, it appears that borrower performance so far is almost back to prepandemic levels, while hundreds of thousands of foreclosures were avoided in 2020 and 2021 (relative to the prepandemic trends and even relative to 2022). And it appears these potential foreclosures have indeed been avoided, as opposed to simply postponed. As noted by the foreclosure data provider ATTOM, “It’s likely that we’ll continue to see significant month-over-month and year-over-year growth through the second quarter of 2022, but still won’t reach historically normal levels of foreclosures until the end of the year at the earliest, unless the U.S. economy takes a significant turn for the worse.”[20] If we were to make a back-of-the-envelope assumption that foreclosures would have continued at the already-low 2019 rate throughout 2020 and 2021, and will be back to the 2019 rate in 2022, there would have been hundreds of thousands more foreclosure starts.[21]

The key question is what role did forbearance and deferral play in preventing these foreclosures? We know that several factors contributed: availability of forbearances, servicing rule changes and foreclosure moratoriums, low unemployment rates by 2022 (resulting in relatively high salaries even for workers who experienced unemployment), historic levels of home price appreciation,[22] and massive cash transfers (including unemployment income) during the pandemic. In addition, staggered ends of the forbearance periods allowed servicers to handle the increase in volume of borrower interaction required, and missed payments being postponed until the end of the mortgage (either as a balloon or additional months of payments) ensured that borrowers did not face higher monthly payments as they came out of forbearance.

Research on the exact attribution to these factors will likely take years. But we can make educated guesses now.[23] Although the home price appreciation had been historic, it would be hard to attribute most of the impact to this factor alone, based on the newer research discussed above. Although unemployment was low in early 2022, it was approximately at 2019 levels, and it was even higher in 2020 and 2021. Thus it is unlikely that we had significantly fewer foreclosures simply because of the

low unemployment rate (otherwise, there would have been considerably fewer foreclosures in 2019).[24] But cash transfers—in particular, generous unemployment support—might have been an important complement to government policies on forbearances and foreclosures. Our educated guesses appear in line with the preliminary research analyzing the effectiveness of the pandemic forbearance performance (Gerardi, Lambie-Hanson, and Willen 2022b; Visalli, Dean, and Moulton 2022). In short, we do not believe forbearances will stop all foreclosures and that forbearances were single-handedly responsible for the lack of foreclosures in 2020 and 2021. But we do believe there is enough evidence to recommend making forbearances (at least in limited circumstances) an integral part of the loss mitigation toolkit.

The Proposal to Make Forbearance an Integral Part of the Loss Mitigation Toolkit

We propose building the forbearance option into the loss mitigation waterfall for circumstances that are common and where third-party documentation can be easily obtained to avoid fraud and to maintain efficiency: job loss, death of a coborrower, the start of divorce proceedings, or a health issue that qualifies for leave under the FMLA (documented by forms such as the US Department of Labor's WH-380F). One important lesson from the pandemic approach was how effectively servicers were able to implement the simple requirements of forbearance, compared with the complex, customized loss mitigation options and required documentation deployed during the foreclosure crisis. We recommend against limiting the number of times a borrower can use this program during the life of the loan, given our suggested documentation requirements and timing restrictions.

In fact, implementing our proposal should be considerably easier after the pandemic-related forbearance experience. First, the legal aspect is straightforward. The government-sponsored enterprises (GSEs), the FHA, and the US Department of Veterans Affairs (VA) each have the authority to change their respective servicing handbooks to include our forbearance proposal as, effectively, step 0 of the loss mitigation waterfall (this proposal would not require the borrower to be late on payments). Portfolio lenders can voluntarily adopt this proposal too.[25]

Our proposal is for the different mortgage players to adopt voluntarily, particularly the FHFA and the GSEs, the FHA and the VA, and portfolio lenders. Our proposal is bare-bones, establishing the proof of concept, yet there are ways to broaden the acceptable forms of documentation and the time limits

we propose. Accordingly, we encourage mortgage participants to go beyond our proposal when they believe it is prudent.

The optimal duration of forbearance will vary from borrower to borrower (Baily 1978; Chetty 2006). We expect forbearances will last a maximum of four months in most situations we outline below, and we believe that a four-month duration will be easier to implement and thus propose a four-month limit. Forbearance is intended to provide temporary relief to allow a borrower to get over a hardship, not permanent relief because of a dramatic change of circumstance. Forbearance is best suited for temporary life shocks, such as short-term unemployment or a temporary FMLA leave. But forbearance for a limited time can also help borrowers experiencing more permanent changes.

For example, both death of a coborrower and divorce are likely associated with a permanent loss in income. In both cases, forbearance gives the family time to better assess their future income and expenditures, potentially cut expenses or increase income,[26] and have time to explore all their options without rushing into a financial decision during a difficult personal time. The end decision may well be that a mortgage modification or home sale is necessary, but the time to assess this decision, without reporting delinquencies or default to the credit bureaus, is valuable. We discuss below how these considerations match up with the needs of the intended recipients.

Once in forbearance, the borrower should start working with their servicer promptly to assess options before the borrower has missed payments, damages their credit history, and run out of options.[27] A potential example here is natural disaster forbearances. The GSEs and the FHA, working through their servicers, have created a forbearance blueprint with incentives to ensure that borrowers who are in natural disaster areas are less likely to default after a natural disaster.

Some borrowers who go through forbearance will not be able to resume payments sustainably after forbearance is over. Even now, 8 percent of loans that were ever in forbearance are delinquent, and 7 percent more are still in active forbearance (thus, there will be even more delinquent loans than the current 8 percent) (RADAR Group 2022). Moreover, the 28 percent of borrowers prepaying their loans is likely too optimistic outside the rapid home price appreciation and low interest rates during the pandemic and is likely an indication that more borrowers will use the forbearance time to sell or refinance, rather than wait for the eventual delinquency. For borrowers who will eventually require a loan modification, we want to avoid adding more to the deferred principal balance. The GSEs and the FHA already require that no more than 30 percent of the unpaid principal balance be deferred. Thus, extra months of forbearance might hurt the borrower’s chance at a loan modification (as opposed to losing the house). Communication with the servicer about realistic prospects regarding ongoing income

and expenses will be key during forbearance and could result in a smooth loan modification serving all parties.

These causes and rationales are not new. For example, the US Department of Housing and Urban Development's 1996 report to Congress notes that "the most common cause of nonrecurring delinquency is financial stress, whether it be from a spell of unemployment, major unexpected expenses (house repairs, medical, etc.), or an overextension of consumer credit. Non-financial family stress is another cause of delinquency. Here we refer to both divorce and death." Even then, the report noted that "long-term forbearance/repayment plans are the most underutilized foreclosure avoidance tool currently available in the industry." The report noted that this might be because "what makes the industry uneasy about long-term forbearances is that they would generally involve unemployed borrowers. Agency guidelines require that the borrowers show regular income to qualify for a servicer-financed forbearance. They are not willing to take the risk that an unemployed worker will find work in the area within even 3-6 months" (Capone 1996, x, 9, and 27).

We also propose requiring servicers to inform borrowers of this forbearance option during the first required live contact with the borrower following a missed payment. Especially at first, borrowers will be unfamiliar with this option. Servicers are already required to make a good-faith effort to contact borrowers when they miss payments, both by the guarantors' servicing guides and the CFPB servicing regulations.[28] Thus, it is easy to interpret the requirement to inform the borrower of a forbearance option as simply a servicer informing borrowers of all available options. But it is possible to interpret our forbearance proposal as loss mitigation on the basis of an incomplete application, and some clarity from the CFPB might be useful.

Covered Events: Unemployment, Death, Divorce, and Temporary Medical Leave

UNEMPLOYMENT

For forbearance caused by unemployment, borrowers would be required to submit either a copy of a check from their state's unemployment insurance agency or standard documentation required by the GSEs and the FHA to document income loss that would also document that the borrower did not quit working voluntarily.[29] The requirement of unemployment insurance check copy is harder to game and makes it clear to the servicer when the borrower found another job within the first few months. But many borrowers are not eligible for unemployment insurance, and it might take 30 to 60 days (or longer) for eligible borrowers to start receiving their unemployment insurance checks. Moreover, if the employer informs the borrower in advance about the upcoming unemployment (some employers might

give two to four weeks' notice), the process should start even earlier. Thus, using documentation from employers documenting involuntary job loss increases the chances of the servicer and the borrower starting to work on forbearance and the eventual forbearance exit before the borrower is late on payments or misses any payments (while waiting for the first unemployment insurance check). For concreteness, we propose to limit forbearance to four months per unemployment spell.

Most states provide unemployment benefits for 26 weeks (approximately six months) (Chodorow-Reich and Coglianese 2019, 156).[30] Even during severe recessions, most claims last well under six months, and more than half of claims last four months or less (Chodorow-Reich and Coglianese 2019, figure 4B). Even at the peaks of severe recessions, only about one-third of claims last more than six months (Chodorow-Reich and Coglianese 2019, figure 4B). Outside severe recessions, we expect an even higher share of claims to last four months or less. On average, the probability of an unemployed person becoming unemployed for six months or more is 4 percent.[31]

We believe there will be only a trivial number of borrowers, if any, who would view forbearance as an incentive to stay unemployed longer. First, recent research indicates that even increasing the generosity of unemployment benefits is a weak incentive to stay unemployed (Ganong and Noel 2019; Holzer, Hubbard, and Strain 2021). Second, the amount in forbearance will ultimately have to get repaid (and we argue below that charging interest on the amount of missed payments could provide better incentives).

DEATH

Three percent of borrowers with a purchase mortgage and 4 percent of borrowers with a refinance mortgage reported a death in the household in 2019, but we believe rates are lower for death of a coborrower (Avery et al. 2021, table 71).[32] We recommend allowing four months of forbearance to provide time to resolve the mortgage, allowing the family time to deal with estate issues, such as arranging for the collection of any inheritance, trusts, and potential survivor social benefits. In many cases, the forbearance period may facilitate a home sale.

DIVORCE

Eight percent of mortgage borrowers reported separation, divorce, or a partner leaving in 2019. Similarly, many of these might not involve a coborrower (Avery et al. 2021, table 71). The length of the divorce process is also highly dependent on state, amicability, and whether children are involved.[33] A survey reported that 39 percent of divorcing couples completed the process within 6 months, and an additional 26 percent completed the process within 7 to 12 months.[34] Divorce is also expensive and can

cost $7,500, on average, in attorney and other fees.[35] Many divorces start with a separation, and separation leads to a divorce in most cases.[36] Although it will not cover all cases, paperwork, such as a filing for legal separation to state authorities or a court filing for divorce, would be required to activate a forbearance. We also suggest the four-month maximum guideline apply to divorce or separation in the initial program; this can be expanded in future iterations.

TEMPORARY MEDICAL LEAVE

For FMLA leave, 30 percent of respondents of a Department of Labor survey said it became much more difficult to fulfill their financial obligations, with an additional 36 percent noting it was somewhat more difficult (Brown et al. 2020a, appendix exhibit B5-6), clearly outlining the need for additional financial flexibility. About 15 percent of employees took leave for an FMLA-qualifying reason in the year preceding the survey (conducted in 2018). Employees with less than a high school diploma (including a GED) were 1.5 times more likely to take leave (Brown et al. 2020a, appendix exhibit B4-2). In terms of duration, only 13 percent of respondents reported taking leave for 61 business days or longer (Brown et al. 2020a, appendix exhibit B4-4). Moreover, the federal government and most states do not require firms to provide job protection for family leave in excess of 12 weeks. We recommend that the only requirement be the FMLA eligibility forms that many workers already have to fill out for their employers.[37] The forms also indicate the length of the leave (and thus of the duration of forbearance), also up to four months.

Medical leave could require considerably less documentation (e.g., a statement from a medical professional or recent medical bills similar to some of the existing GSE and FHA procedures).[38] This documentation would likely result in considerably more ambiguity about the appropriate length of forbearance for any given medical event and raise questions about translating medical conditions and dollar value of medical bills into months of forbearance. An even less stringent requirement would be a simple statement from the borrower, akin to pandemic forbearances, that the borrower had experienced hardships caused by medical reasons.[39]

Possible Program Expansions That We Do Not Recommend

OTHER COVERED EVENTS

There are many other events where forbearance might be effective. Even in the event of unemployment, with the borrower receiving an unemployment insurance check promptly, the median

replacement rate of wages is approximately 50 percent (i.e., the unemployment check is only half the wage) (Ganong, Noel, and Vavra 2020).

Similarly, only 56 percent of US employees were eligible for FMLA. The remainder were not eligible for having worked too few hours or for an insufficient period for their employer or because of their worksite being too small (and thus carved out from FMLA) (Brown et al. 2020b). And many workers are part of the gig economy and thus have no employer (according to the FMLA definition).

Forbearance could also be extended to cover emergency repairs, such as replacing a roof (which would increase the home's value),[40] or an unexpected expense, such as repairing the car to get to work. In a CFPB survey on expense shocks (not limited to mortgage borrowers), consumers struggling to pay bills were asked, "What was the event that caused you to have difficulty paying for a bill or expense, if there was one?" In addition to some of the events mentioned throughout this proposal, auto repair and home repair were high on the list of such events. Moreover, 35 percent of respondents chose "mortgage or rent" when asked what they had difficulty paying for (Fulford and Rush 2020).

DURATION

We suggested time limits both to minimize the impact on investors and servicers and because we believe forbearances are more appropriate for temporary hardships. But forbearances could be extended for as long as borrowers can show that they are still receiving unemployment checks or are still on an FMLA leave after four months. For example, the few borrowers who go into extended medical leave for more than four months as covered by FMLA might be the borrowers who would even further benefit from a longer forbearance period. Similarly, long-term unemployed borrowers during recessions deep enough to require congressional action on prolonging unemployment duration (or during an extraordinary event such as the COVID-19 pandemic) might also be the borrowers who would even further benefit from a longer forbearance period.

DOCUMENTATION

Another extension would be to provide limited forbearance without any documentation, such as for three months, one time for the duration of the mortgage (or if the borrower pays back for these three months by the time they request the next forbearance—effectively establishing an easy-to-access but limited line of credit). Providing such relief could help in cases such as an emergency car repair and steer borrowers away from more expensive credit, such as payday loans. In addition, this relief would cover other cases documented by the aforementioned CFPB survey, such as "helping children, parents, or other family members." In general, the CFPB survey found that "52 percent reported they could cover

expenses for two months or less if they lost their main source of income," suggesting that many income shocks could lead to a temporary inability to make mortgage payments (Fulford and Rush 2020).

Especially for no-documentation forbearance, we have to balance two borrower interests. On one hand, the option for forbearance allows borrowers to be more resilient to various life shocks. On the other hand, the option for forbearance, when overused, leads to slower equity accumulation, diminishes the forced savings aspect of homeownership, and could rule out future loss mitigation efforts (including principal forbearance).

We recommend the pandemic approach to exiting forbearance, where deferred payments are added to the back of the mortgage with no interest, because of the market participants' familiarity with the practice. It may be preferable to have the deferred principal balance accrue reasonable interest that, even absent documentation, could almost eliminate opportunistic behavior by borrowers. But adding interest on the missed balance would add complexity for servicing, as this option would increase the cost of servicing the second mortgage for the deferred payments. Preliminary research on pandemic forbearances suggests that "forbearance, unlike modifications and principal reduction, is incentive compatible, meaning it is most attractive to those who really need it: financially distressed borrowers. The reason is that forbearance requires borrowers to pay back their missed payments. The emerging empirical evidence on forbearance usage suggests that it was, in fact, used by the borrowers who needed it the most, with little evidence that it was used strategically by nondistressed borrowers" (Gerardi, Lambie-Hanson, and Willen 2022b, 24).[41]

Although a consideration of these alternatives is worthy, we would do so at a later stage. Implementing our bare-bones proposal quickly would provide decisionmakers more data on what works and what does not and would provide insight into which scenarios an expansion might pass the cost-benefit test. And quick implementation is possible, as this program relies solely on well-established documentation and operational pathways.

We also believe a successful implementation of our proposal would increase willingness to explore further expansions. Alternatively, it would be quickly evident if our proposal did not pass the cost-benefit test. Meanwhile, we encourage agencies and lenders to experiment unilaterally and go further than our proposal. One notable example is MassHousing's MI Plus, which pays a portion of unemployed borrowers' mortgage payments, in a sense supplementing unemployment insurance.[42] Similarly, the US Department of the Treasury's 2010 Hardest Hit Fund demonstrated many of our proposal's benefits,[43] and our proposal could be a cost-effective complement. For risk holders that offer such an insurance

add-on for mortgage borrowers, an effective solution could combine four months of forbearance and transition to the add-on insurance if the borrower is still struggling after that.

Back-of-the-Envelope Cost-Benefit Analysis

Forbearances are not free. To simplify our analysis, let us assume there are three possible outcomes of forbearance.

- Forbearance works as intended and prevents foreclosure.
  - Credit risk holders, borrowers, and communities avoid the substantial costs of foreclosure, and administrative costs are lowered, on net, for servicers. The missed payments become an interest-free loan until the end of the mortgage (a transfer from credit risk holder to the borrower). The credit risk holder pays an incentive fee to the servicer.
- Foreclosure occurs despite forbearance.
  - The bearer of the risk incurs the cost of a delayed foreclosure process.
- The borrower receives forbearance, but it does not change the outcome; foreclosure would not have occurred, regardless of whether the borrower received forbearance.
  - The missed payments become an interest-free loan until the end of the mortgage (a transfer from credit risk holder to the borrower). The credit risk holder pays an incentive fee to the servicer.

Forbearance policies must be designed so that the benefits of foreclosure avoidance for the first outcome outweigh the costs of offering forbearances for the second and the third outcomes.[44] In practice, it appears that moral hazard was not an issue in the pandemic (Farrell, Greig, and Zhao, n.d.), but we believe that limiting our proposal to borrowers who can document job loss, death of a coborrower, divorce, or health issues eligible for FMLA greatly reduces the prevalence of moral hazard—the third category of borrowers asking for forbearance when they do not need it.

How Much Does a Foreclosure Cost?

Total loss severity is heavily dependent on home price appreciation and ranges from as low as 16 percent for mortgages originated in some periods (e.g., 2011–13) to 35 to 40 percent in other periods (2005–08), even using the same methodology.[45] But some estimates for a significant portion of the

market are higher. For example, the FHA estimates that its overall loss rate as a share of the unpaid principal balance had been well above 40 percent even in 2013–17 and had dropped below 35 percent only at the end of 2021 (HUD Offices 2022a, table A7). But many of these costs are fixed, and the FHA's unpaid principal balances are relatively small (around $120,000 in 2021) (HUD Offices 2022b). For our estimates, we use a conservative loss severity of 25 percent and an average balance of $140,000, giving a direct foreclosure loss estimate of $35,000.[46]

In addition to the direct costs to the creditor and the guarantors, foreclosures result in many negative consequences for multiple parties. There are costs to borrowers (both monetary and nonmonetary) and to the communities where foreclosures occur. The US Department of Housing and Urban Development estimated in 2010 that a borrower's average cost from a foreclosure was $10,300 and that neighboring home values decrease by $14,531 (HUD, n.d.). The CFPB notes in the cost-benefit analysis of its servicing rule on Protections for Borrowers Affected by the COVID-19 Emergency that, adjusted for 2021 dollars, the combined sum of $30,100 is likely an underestimate.[47] The CFPB also noted that other potential costs of foreclosure "include but are not limited to, increased housing instability, reduced homeownership, financial distress (including increased delinquency on other debts), and adverse medical conditions. Although the Bureau is not aware of evidence that would permit quantification of such borrower costs, they may be larger on average than the out-of-pocket costs."[48] A recent research study, Bhagat (2021b), cites similar numbers, and suggests other costs of foreclosure, similar to the CFPB, citing many of the same sources.[49] Thus, for this analysis, we use a total cost of $65,100. We quantify neither the cost of not further damaging the borrower's credit history (Li, Goodman, and Bonsu 2016) nor the decrease in servicing costs from avoiding foreclosure (Goodman 2016).

How Much Does It Cost If the Borrower Later Defaults?

Various researchers have attempted to estimate the effects of an additional month in the foreclosure process, primarily by correlating lenders' ultimate foreclosure costs to whether the property is in a judicial or a nonjudicial foreclosure state (with judicial states requiring considerably more time to foreclose). But most foreclosure estimates are of total loss severity of foreclosure (how much the lender receives relative to the loan's unpaid principal balance), as opposed to the marginal effects of an additional month. These estimates highly depend on macroeconomic conditions (e.g., home price appreciation). There are only a few marginal estimates of an additional month in foreclosure (which include additional servicing costs). One recent estimate suggests that "cutting foreclosure timelines by one year would cause [loss-given-default] to decrease by 5 to 8 percentage points" (An and Cordell

2020, 1). Accordingly, we assume 6 percent per year of additional cost, or 0.5 percentage points per month.

But there is significant disagreement about the number. For example, Lambie-Hanson (2015) finds that this ignores externalities, as "single-family properties…are more than 10 times as likely to receive a complaint while bank owned as while owned by a borrower who is current on his mortgage." Le and Pennington-Cross (forthcoming) estimate that "for the representative loan, 40.5 percent of the unpaid balance is lost. The holding costs are [a] much smaller part of the losses than the sale of the property. For example, 32.7 percent of the losses come from the sale and 7.9 percent come from the holding costs" and "each month of the default timeline is associated with over 140 dollars of maintenance expenses and over 325 dollars in taxes and insurance expenses [for 2000–13 data]," suggesting numbers lower than the 0.5 percentage points per month noted above. Other research indicates that there might be positive spillover on other debt from a longer foreclosure process: "longer period of nonpayment of mortgage expenses results in higher cure rates on delinquent credit cards and reduced credit card balances" (Calem, Jagtiani, and Lang 2017).

For this report, we use a 0.5 percent per month estimate; this is also consistent with a 4 percent interest rate on the mortgage plus 1.75 percent in taxes and insurance plus 0.25 percent in deferred maintenance. We further assume, for the cases in which forbearance still ends up in foreclosure (the second group of borrowers), that forbearance will add time to the foreclosure process. We assume a one-to-one ratio: four months' forbearance should increase the foreclosure process by four months, and so on.

How Much Does Forbearance Cost?

The cost of deferring payments interest-free is a transfer from the societal perspective (the borrower gains as much as the financial institution loses). To calculate the cost to the lender, we use a median forbearance of four months, a 4 percent interest rate, and remaining loan duration of eight years. Postponing four months of payments (or, at most, 2 percent of the unpaid principal balance) for eight years costs about 0.7 percent of the unpaid principal balance.[50] This cost, which would have been borne by the borrower is borne by the bearer of the mortgage risk. We also assume the $500 in additional servicing costs for each loan that goes into forbearance (without going into foreclosure).[51]

This cost is incurred in the cases in which foreclosure is avoided (outcome 1) and the cases in which foreclosure would not have occurred (outcome 3). In the cases in which the borrower goes to foreclosure anyway, there is a cost, but it is included in the cost of postponing foreclosure timelines.

Putting It All Together

The first and third outcomes result in four months of payments being postponed, for a cost to the creditor of about 0.7 percent (and a similar benefit to the borrower) of the unpaid principal balance, for a total cost of $980. We also assume additional costs of servicing of $500 per mortgage in forbearance, for a total cost of around $1,480.

For the first outcome, we derive the benefit of avoiding a foreclosure, with at least $30,100 benefit to borrowers and their neighbors, and a midpoint of loss severity estimates of around 25 percent of the unpaid principal balance. Assuming an average defaulted loan balance of $140,000, this gives us a total estimate of $35,000 in direct creditor benefits and $65,000 in total benefits.

For the second outcome, the cost is 0.5 percent per month for extending foreclosure by four months, for a total cost of $2,800.

Although we and others can make reasonable assumptions to arrive at the numbers above, it is less clear what we should assume on the relative likelihood of the three outcomes. Research from the Federal Reserve Bank of Philadelphia indicates that 8 percent of borrowers who exited forbearance are currently delinquent (RADAR Group 2022).[52] It is highly unlikely that all of them will go into foreclosure. Note, however, that 28 percent of borrowers exited in a payoff, and that might be too optimistic of an estimate when home price appreciation is lower.

Let us assume that 20 percent of borrowers in forbearance will eventually go into foreclosure and that 5 percent of those borrowers will be saved from foreclosure because of forbearance. The remaining 75 percent of those borrowers will be able to postpone four months of payments, even though, at least ex post, they did not need to. With these assumptions, our total (social welfare) cost-benefit calculation per forbearance is as follows:

$$[5\% * \$65{,}000] – [20\% * \$2{,}800] – [(75\% + 5\%) * \$500] = \$2{,}290 \text{ benefit per forbearance} \quad (1)$$

The first term is the benefit produced by saving 5 percent of forbearance borrowers from foreclosure. The second term is the loss caused by prolonging foreclosure by four months (including any additional servicing costs) for borrowers we could not save from foreclosure. The third term is servicing costs for borrowers who do not end up in foreclosure. We perform a similar analysis from the creditor's perspective below (i.e., not counting borrower or community benefits).

This calculation also implicitly suggests that, for those who qualify and take up this forbearance proposal, we would save one foreclosure out of five (instead of 25 percent having foreclosures, we have only 20 percent), which we believe is a reasonable approximation, given the drop in foreclosures

documented in 2020–22 and recent academic research. Given our proposal's limited scope, many borrowers will not qualify for this program, will not be able to take advantage of forbearance, and will end up in foreclosure.

The numbers above are the net benefit to society (including consumer benefits). Various industry players have different incentives. If we consider only the risk holder's costs and benefits (and assume they pay the entire servicing costs), there is still a marginal net benefit at 5 percent foreclosure avoidance:

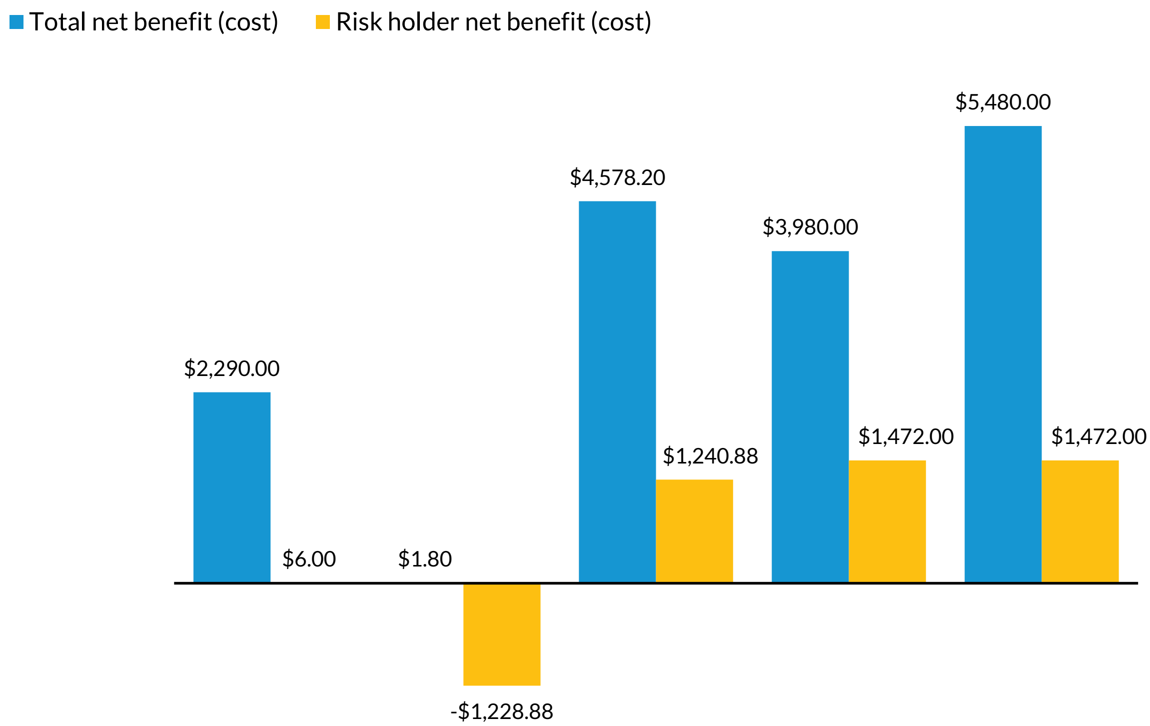
$$[5\% * \$35{,}000] - [20\% * \$2{,}800] - [(75\% + 5\%) * (500 + 980)] = \$6 \text{ benefit per forbearance} \qquad (2)$$

Our first term changes because we consider only the benefit to the creditor of saving foreclosure (without considering the benefit to the borrower or to the community). Our third term changes as well, as we also consider the creditor's cost of deferring missed payments interest-free. Given that some modifications are cap and extend, the last term is likely a considerable overstatement of the actual costs to the creditor, and depending on the program structure, the appropriate multiplier should be closer to $500 (as above) rather than to $1,480 (which assumes that four months of missed payments are rolled over to the end of the mortgage interest-free).

We present other scenarios in figure 1 to show the sensitivity of our calculations to various assumptions. First, forbearances could be either more effective or less effective in averting foreclosures. If forbearance reduced the probability of success from 5 percent to 1.6 percent, a number that is unrealistically low, the transaction breaks even for society and is negative for the mortgage risk holder. If the probability of success is increased from 5 percent to 8.6 percent, the transaction is hugely positive, both for society and for the risk holder. Second, foreclosure losses could vary because of different average loan balance and loss severity. For loans in forbearance, the unpaid principal balance is $180,000[53] instead of the $140,000 we assumed in the base case scenario. Applying the FHA's loss severity, which is closer to 40 percent of the unpaid principal balance, as opposed to our base assumption of 25 percent, gives the financial institution a $72,000 loss per foreclosure. Increasing the foreclosure loss to the risk holders makes it more valuable to avert these losses. Finally, the base case did not fully account for the costs to borrowers and neighborhoods caused by foreclosures; assuming $60,000 instead of $30,000 would further increase the benefit of avoiding foreclosure.

FIGURE 1

Cost-Benefit Scenarios



Foreclosures averted	5%	1.6%	8.4%	5%	5%
Risk holder loss per foreclosure	$35,000	$35,000	$35,000	$72,000	$72,000
Borrower and community loss per foreclosure	$30,000	$30,000	$30,000	$30,000	$60,000

URBAN INSTITUTE

Source: Authors' calculations.
Note: The scenarios are as follows: the base case, a lower share of foreclosures are averted than in the base case, a higher share of foreclosures are averted than in the base case, the base case with a higher loan amount and severity, and the base case with a higher loan amount and severity and higher borrower and community costs.

This cost-benefit analysis is persuasive. In a typical year, we would expect no more than 1 percent of borrowers to be in forbearance. This is already the case, despite the fact that many borrowers in pandemic-related forbearances would likely not have been eligible according to our criteria. Thus, even if forbearances are useless, the cost is $20 per average mortgage per year, or 1 basis point on interest rates.

Impact on Various Parts of the Mortgage Industry

The GSEs and the FHA stand to gain much from implementing standard forbearance options into the loss mitigation waterfall by potentially considerably reducing defaults and foreclosures at modest potential costs. It is also worth examining the costs and benefits to other actors.

OTHER CREDIT RISK HOLDERS

The benefits calculation generally holds true for other credit risk holders—mortgage insurers, credit risk transfer investors, and portfolio lenders who hold loans on their balance sheets—though different considerations may arise. Before investors and mortgage insurance providers adjust their belief, the GSEs could bear the entire costs of forbearance, while sharing the benefits of fewer foreclosures with their counterparties. But the GSEs do not charge mortgage insurers if a loan avoids foreclosure, so the GSEs cannot recover the benefits to the insurers. Mortgage insurers do have to set aside reserves against delinquent loans (thus lowering their net income), but these reserves will be reversed for loans that reperform (thus increasing net income). Over time, as the policy proves effective, mortgage insurers may reduce their rates, and credit risk transfer investors may require smaller spreads.

Private portfolio lenders could adopt this proposal unilaterally.[54] Private portfolio lenders adopting this proposal too would ensure a level playing field across the industry and would not risk confusing borrowers who might hear about such developments but who do not know whether their loan qualifies, and so it should be highly encouraged by respective regulators and the CFPB in particular. The CFPB could also play a unifying role by providing a deeper analysis and collecting more representative information than we did in our back-of-the-envelope analysis.

MORTGAGE-BACKED SECURITIES INVESTORS

The implications of our proposed forbearance program on mortgage-backed securities investors should be minimal. The GSEs typically buy mortgages from the mortgage-backed securities pool after four months of nonpayment but do not have to do so in forbearances.[55] Thus, some of the loans that would have gone into foreclosure will be saved (resulting in slower prepayment), while the loans that do end up in foreclosure will be prepaid a few months later than otherwise (again, resulting in marginally slower prepayment on less than 1 percent of loans).

SERVICERS

Servicers might face liquidity issues, as was the concern for pandemic forbearances, because they must advance monthly payments even if the borrower is not making them. The GSEs and the FHA eventually

reimburse servicers. But temporarily, they may struggle with insufficient liquidity. Servicers (even nondepositories) did not ultimately require much assistance during the pandemic, but much of this resilience was likely because of heavy liquidity stemming from the refinancing wave. Our proposal will not add material additional stress to nondepository servicers. The four-month forbearance limit and documentation requirements would result in a lower volume of forbearances than in 2020–21 (or even currently), and GSE servicers are expecting to advance delinquent payments to investors for up to four months. This burden will be larger for Ginnie Mae servicers, as they must continue to advance for the full six months if necessary and will not recover their advances until the loan is resolved through a partial claim or modification (if the borrower successfully resumes payment) or a foreclosure (if the forbearance does not prevent foreclosure).

The proposal's impact on servicers would be minimized if pandemic policies, such as the GSEs' four-month advance limit for servicer obligations and Ginnie Mae's Pass-Through Assistance Program for servicers, were to continue.[56] Longer term, if the program is successful, servicers might benefit by having considerably fewer nonperforming loans, by far the most expensive loans to service (Goodman 2016).

In summary, this plan owes its credibility to the pandemic experience, in which a real-world large-scale forbearance policy was successfully implemented. The cost-benefit analysis shows that the upside can be high and potential costs to mortgage risk holders quite limited.

In fact, our analysis may beg the question why this has not been implemented before. We discussed the lack, until now, of research indicating that forbearance (or reduced payments, together with postforbearance deferral or modification) can help most borrowers (as opposed to principal write-downs) and real-world evidence from pandemic forbearances. In addition, there are several market failures, as almost no industry actors have an incentive or the ability to offer what we are discussing. Any private portfolio lender is too small relative to the rest of the market (any marketing and additional costs need to be repaid, but there will likely be considerable borrower confusion), and jumbo loans are considerably less likely to go into foreclosure than other loans. Servicers cannot implement a proposal like this without secondary market approval. Thus, the GSEs, the FHA, or the VA (and Ginnie Mae) would have to implement something similar, and these actors have lacked incentive.[57]

The GSEs have a social mission, and even if there is a small short-term net loss on this program, it should benefit their total revenue and profit in the long run, while achieving public benefits. Moreover, the GSEs are in the best position to lead the otherwise fragmented mortgage ecosystem to adopt this

approach. Most servicing advances—such as streamlined modifications and 40-year modifications—were developed initially by the GSEs, with the FHA later adopting them based on the lessons learned.

Adoption by the FHA and Ginnie Mae could vastly extend the impact of this approach. The FHA has historically a higher foreclosure rate than the GSEs, and Ginnie Mae has more than half of forbearances outstanding, despite a smaller stock of mortgages than the GSEs. Thus, the FHA might have a larger incentive to implement our proposal, and the benefits for taxpayers and for low-income and underserved borrowers and communities could be even greater.

Conclusion

Following the financial crisis, the credit box has become much tighter (Parrott and Zandi 2013). In the past few years, there has been an emphasis on uncovering more borrowers who have the same probability of default as borrowers who already receive mortgage credit. But the most efficient way to increase access to credit is to directly expand the credit box by allowing more combinations of lower credit score thresholds (or rent-based underwriting), higher loan-to-value ratios and higher debt-to-income ratios. Although an expansion of the credit box will give more people the opportunity to be homeowners and build wealth, it is likely that almost all these marginal borrowers will have a higher probability of being foreclosed on than the current borrower base, a cycle we do not want to repeat. But we have repeatedly seen the power of servicing practices to reduce default risk. Changing servicing practices to reduce the chance of foreclosure because of temporary income or expense disruptions can thus allow further expansion of the credit box, without increasing default risk.

It is important to realize that foreclosures have a racial equity aspect as well (just like the current underwriting criteria): “Black and Hispanic homeowners were more than two times as likely to be behind on housing payments as of December 2020.”[58] We also know that “black households are less likely to sustain their homeownership after first buying, which aggravates their future wealth-building potential,” contributing to the racial gap in homeownership.[59]

This proposal could be considered part of a larger group of complementary policies that would help us break out of this cycle. If we can decrease foreclosure rates across the board, it will increase the homeownership rate in general and will allow us to expand the credit box further, without suffering as many foreclosures as an expansion would suggest under the current regime.[60] This would be powerful. Our proposal is also complementary to other ways of effectively expanding the credit box and lowering foreclosure rates through faster accumulation of equity: down payment assistance and 20-year loans.

The time has come for this action. Introducing forbearance policies in times of relative market calm provides clarity both to the industry and to borrowers. In retrospect, the government's decision to implement forbearance during the pandemic has paid off. But ideally, proposals such as this one should be implemented well ahead of the next crisis, so that government officials do not have to make decisions like this over a weekend and industry and borrowers do not have to adjust on the fly, however well this decision in 2020 played out. Indeed, the time is right to make forbearance the first step on most loss mitigation waterfalls.

Notes

[1] Although servicers will report the loan as current, the credit history will still show a $0 payment, and thus there could still be some impact on the borrower's credit history. But the impact is likely to be closer to the mild impact of a revolving credit card balance (did the borrower pay off the entire monthly payment?), rather than the impact of mortgage delinquency or default. See Joanne Gaskin, "Research Looks at How Mortgage Delinquencies Affect Scores," FICO blog, March 24, 2011, https://www.fico.com/blogs/research-looks-how-mortgage-delinquencies-affect-scores.

[2] We discuss potential documentation requirements below.

[3] Historically, the first step of the waterfall has been to capitalize arrearages (adding the missed payments to the principal and increasing monthly payments accordingly, while keeping the loan term the same). But the pandemic policy of deferring arrearages until the end of the mortgage is likely to produce fewer redefaults (simply based on keeping monthly payments the same, as opposed to increasing them with capital arrearages).

[4] See, for example, Jung Hyun Choi, Alanna McCargo, and Laurie Goodman, "Three Differences between Black and White Homeownership That Add to the Housing Wealth Gap," *Urban Wire* (blog), Urban Institute, February 28, 2019, https://www.urban.org/urban-wire/three-differences-between-black-and-white-homeownership-add-housing-wealth-gap. Kermani and Wong (2021, 1) document that the "racial gap in realized housing returns…is driven almost entirely by differences in distressed home sales (i.e. foreclosures and short sales). Black and Hispanic homeowners are both more likely to experience a distressed sale and to live in neighborhoods where distressed sales erase more house value."

[5] An and coauthors (2021, i) find that "government and private-sector forbearance programs have mitigated these inequalities in the near term, as lower income and minority borrowers have taken up the short-term debt relief at higher rates."

[6] Freddie Mac (2022, 27) notes that "borrowers impacted by a temporary financial hardship may need access to payment deferral options, so we are exploring permitting certain borrowers to be eligible for automatic deferrals of monthly mortgage payments that would otherwise cause the borrower to become delinquent." In particular, we believe that adopting a version of our proposal achieves Freddie Mac's key goals to "identify tangible servicing improvements for potential implementation" and to "complete analysis to understand automatic payment deferral benefits for defined eligible population" (28). Similarly, Fannie Mae (2022 ,35) notes that "Black households, on average, have more limited emergency savings to cushion against unexpected expenses or temporary disruptions to income," and our proposal alleviates this gap.

[7] Ganong and Noel (2020) present evidence for lowering monthly payments being an effective loss mitigation strategy, as opposed to principal reductions.

[8] Consistent with research, we talk about both defaults and foreclosures. Most research focuses on defaults, likely because they appear in the data earlier and there are more default data. But some researchers look at foreclosures too, and recent performance data show that more than half of defaults end up in foreclosure.

[9] See "National Mortgage Database Program," Federal Housing Finance Agency, last updated May 27, 2022, https://www.fhfa.gov/PolicyProgramsResearch/Programs/Pages/National-Mortgage-Database.aspx.

[10] Although "unexpected expense shock" is a broad category and potentially overlaps with other categories reported in the survey, Low (2021b, 15) notes that, based on another survey, "the most important expense shocks…include medical expenses, auto repair, helping a friend or family member, and home repair, but the category is broad and also includes legal expenses, appliance repair, etc."

[11] See also the CFPB's servicing rule for borrowers affected by the pandemic: Protections for Borrowers Affected by the COVID-19 Emergency under the Real Estate Settlement Procedures Act (RESPA), Regulation X, 86 Fed. Reg. 34848 (June 30, 2021).

[12] Data are as of May 9, 2022; the remaining 7 percent are "servicing transfer," defined as "loans sold where a status could not be determined." See RADAR Group (2022).

[13] We largely agree with the researchers from the Atlanta, Philadelphia, and Boston Federal Reserve Banks in their chapter of the Brookings Institution volume on the effects of pandemic policies (Gerardi, Lambie-Hanson, and Willen 2022a, 168): "We argue that forbearance was an especially effective policy in reducing borrower distress because of its timeliness, high accessibility, and incentive compatibility. However, we also acknowledge that the stars may have been all aligned as the state of the pre-pandemic housing and mortgage markets and the dynamic of the pandemic itself set up almost perfectly for forbearance to be an especially effective policy. Thus, while we argue that forbearance should remain an important tool in the policy kit going forward, it is unclear if it will be as effective in a future crisis."

[14] Mortgage Bankers Association, "Mortgage Delinquencies Decrease in the First Quarter of 2022," news release, May 5, 2022, https://www.mba.org/news-and-research/newsroom/news/2022/05/05/mortgage-delinquencies-decrease-in-the-first-quarter-of-2022.

[15] Mortgage Bankers Association, "Share of Mortgage Loans in Forbearance Decreases to 0.94% in April," news release, May 16, 2022, https://www.mba.org/news-and-research/newsroom/news/2022/05/16/share-of-mortgage-loans-in-forbearance-decreases-to-0.94-in-april.

[16] William R. Emmons, "How Many Mortgage Foreclosures Is Forbearance Preventing?" *On the Economy* (blog), Federal Reserve Bank of St. Louis, December 18, 2020, https://www.stlouisfed.org/on-the-economy/2020/december/mortgage-foreclosures-forbearance-preventing.

[17] Mortgage Bankers Association, "Mortgage Delinquencies Decrease."

[18] Mortgage Bankers Association, "Share of Mortgage Loans in Forbearance."

[19] ATTOM, "U.S. Foreclosure Activity Sets Post Pandemic Highs in First Quarter of 2022," news release, April 21, 2022, https://www.prnewswire.com/news-releases/us-foreclosure-activity-sets-post-pandemic-highs-in-first-quarter-of-2022-301529782.html.

[20] ATTOM, "U.S. Foreclosure Activity Sets Post Pandemic Highs."

[21] ATTOM appears to be even more aggressive in its estimate of foreclosures avoided: "Government and mortgage industry efforts have prevented millions of unnecessary foreclosures." See "U.S. Foreclosure Activity Drops to an All-Time Low in 2021," ATTOM, January 13, 2022, https://www.attomdata.com/news/market-trends/foreclosures/attom-year-end-2021-u-s-foreclosure-market-report/. It is also possible that government policies prevented the contagion effect seen in the previous foreclosure crisis, where mass foreclosures brought down the value of other properties. In other words, it is possible that the counterfactual foreclosures in 2020 and in 2021 would have been considerably higher than the trend from 2016 to 2019 would indicate.

[22] Federal Housing Finance Agency, "U.S. House Prices Rise 18.7 Percent over the Last Year; Up 4.6 Percent from the Fourth Quarter," news release, May 31, 2022, https://www.fhfa.gov/Media/PublicAffairs/Pages/US-House-Prices-Rise-18pt7-Percent-over-the-Last-Year-Up-4pt6-Percent-from-the-Fourth-Quarter.aspx.

[23] For a very early attempt, see Lisa Dettling and Lauren Lambie-Hanson, "Why Is the Default Rate So Low? How Economic Conditions and Public Policies Have Shaped Mortgage and Auto Delinquencies during the COVID-19 Pandemic," *FEDS Notes* (blog), Board of Governors of the Federal Reserve System, March 4, 2021, https://www.federalreserve.gov/econres/notes/feds-notes/why-is-the-default-rate-so-low-20210304.htm.

[24] Bureau of Labor Statistics, "The Employment Situation—June 2022," news release, July 8, 2022, https://www.bls.gov/news.release/pdf/empsit.pdf.

[25] The challenge for the private-label market to offer forbearance and deferred principal is that it might be difficult or impossible to increase the balance of private-label mortgage-backed securities with current structures.

[26] See Fulford and Rush (2020, figure 2), with 49 percent of respondents reporting cutting expenses and 13 percent reporting increasing income when faced with financial difficulties.

[27] We believe that giving borrowers an option for forbearance, along with exploring the available servicing alternatives, would not violate the CFPB's servicing rules or could be fixed easily if the CFPB decides otherwise.

[28] See, for example, "§1024.39 Early Intervention Requirement for Certain Borrowers," Consumer Financial Protection Bureau, accessed July 12, 2022, https://www.consumerfinance.gov/rules-policy/regulations/1024/39/.

[29] For example, the borrower could present verification that the borrower recently finished working for a particular employer involuntarily and that the borrower had income from this employer in the past (based on W-2s or pay stubs), similar to what the GSEs and the FHA require to document income loss. The statement from the employer could be a mass layoff notice (that employers are required to provide when laying off a significant portion of their workforce), a notice of a firm closing its operations, or an HR statement that the employee lost their job involuntarily or that there is a temporary unpaid furlough (in which case the forbearance period would be limited to the rounded number of months of furlough, to be updated if there is more documentation from the employer later). See also HUD (2021, 359) and Fannie Mae and Freddie Mac (2017).

[30] Research has shown that increases in unemployment insurance alone can lower the risk of foreclosure (Hsu, Matsa, and Melzer 2018).

[31] During severe recessions, states and the federal government typically extend these benefits. Severe recessions can be addressed outside this program. See Ben Casselman, "The Biggest Predictor of How Long You'll Be Unemployed Is When You Lose Your Job," FiveThirtyEight, April 17, 2014, https://fivethirtyeight.com/features/the-biggest-predictor-of-how-long-youll-be-unemployed-is-when-you-lose-your-job/.

[32] The data are from the National Survey of Mortgage Originations, the survey that targets new mortgage originations, and thus might not be representative of seasoned borrowers. Both the CFPB and the FHFA (and the FHA and the VA through interagency cooperation) have necessary data representative of all mortgage borrowers (through another survey, the American Survey of Mortgage Borrowers, that does not have a public use file).

[33] Martindale-Nolo Research, "How Long Does Divorce Take?" Lawyers.com, January 21, 2020, https://www.lawyers.com/legal-info/family-law/divorce/how-long-does-divorce-take.html.

[34] See Martindale-Nolo Research, "How Long Does Divorce Take." The source did not mention how representative the survey is of the general population, let alone of mortgage borrowers.

[35] Sara Gaynes Levy, "Yes, Divorces Can Cost a Lot, But There Are Ways to Save," Oprah Daily, February 28, 2022, https://www.oprahdaily.com/life/relationships-love/a31155117/divorce-cost/.

[36] Robert Talbbl, "Why Separations Usually Lead to Divorce," *Psychology Today*, August 8, 2020, https://www.psychologytoday.com/us/blog/fixing-families/202008/why-separations-usually-lead-divorce.

[37] "FMLA Forms," US Department of Labor, accessed July 11, 2022, https://www.dol.gov/agencies/whd/fmla/forms.

[38] For the requirements for some of the FHA and GSE loss mitigation procedures, see HUD (2021, 359) and Fannie Mae and Freddie Mac (2017).

[39] For other procedures, these statements suffice for the FHA and GSEs; see HUD (2021, 695) and Fannie Mae and Freddie Mac (2017).

[40] For other home repair programs, see Taylor Mayes and Carlos Martín, "Home Repair Programs Serve Critical Needs for Low-Income and Vulnerable Homeowners," Joint Center for Housing Studies of Harvard University blog, June 27, 2022, https://www.jchs.harvard.edu/blog/home-repair-programs-serve-critical-needs-low-income-and-vulnerable-homeowners.

[41] See also Lambie-Hanson, Vickery and Akana (2021).

[42] "Are You Eligible for MI Plus Benefits," MassHousing, accessed July 11, 2022, https://www.masshousing.com/en/home-ownership/homeowners/mi-plus-eligibility.

[43] Moulton and coauthors (2022) show that the Hardest Hit Fund program from 2010 (targeting unemployed borrowers and borrowers experiencing other shocks) resulted in a 40 percent reduction in defaults and foreclosures. The program paid monthly mortgage bills for qualified borrowers, with the time limit depending on the state (e.g., up to 18 months in California) and required unemployment insurance checks as documentation of unemployment (Keep Your Home California 2018). Moulton and coauthors (2022) note, "About half of applicants experienced unemployment, while an additional 25 percent reported other involuntary loss of income (such as reduction in wages), and 11 percent reported reduction in income due to illness. Other less common income shocks included death of spouse or divorce, or significant medical expenses."

[44] For a cost-benefit analysis from the servicers' and investors' perspective, see Adelino, Gerardi, and Willen (2013). We did not explicitly consider modifications, as servicers are required to have exhausted all available loss mitigation strategies, including modifications, before moving to foreclosure. This is true whether or not the borrower uses forbearance. Assuming the loss mitigation opportunity set is the same whether or not the borrower selects forbearance, it did not make sense to consider additional modifications that could be generated using forbearance.

[45] Losses are the combination of accrued interest, penalties, and expenses such as foreclosure and legal expenses, and property preservation expenses. These expenses often add up to more than the lost interest, which is why severities are relatively high even during times of appreciation. See Cordell and coauthors (2015) and Goodman and Zhu (2015).

[46] From the recent FHA data, the unpaid principal balances were approximately $120,000, which is likely lower than GSE loans, but FHA mortgages are also more likely to end up in foreclosure (HUD Offices 2022b, table 6). We adjust this amount by the ratio of the median 2020 purchase loan amount to the median 2020 FHA purchase loan amount to arrive at $140,000 as an estimate of average unpaid principal balance. But the CFPB releases only median amounts, which ideally should not be adjusted as we have done (Liu et al. 2021, table 3A).

[47] Protections for Borrowers Affected by the COVID-19 Emergency under the Real Estate Settlement Procedures Act (RESPA), Regulation X, 86 Fed. Reg. 34848 (June 30, 2021), 34889. See also Joint Economic Committee (2007), showing a higher estimate of $77,935 in 2007 dollars.

[48] Protections for Borrowers Affected by the COVID-19 Emergency under the Real Estate Settlement Procedures Act (RESPA), Regulation X, 86 Fed. Reg. 34848 (June 30, 2021), 34889. See also Joint Economic Committee (2007). The CFPB cited the following research in support of its position: Diamond, Guren, and Tan (2020); Currie and Tekin (2015); Anenberg and Kung (2014); Gerardi et al. (2015).

[49] Bhagat (2021b) notes the following: "Foreclosed-upon households also suffer significant after-effects. Diamond, Guren, and Tan (2020) examined foreclosure filings in Cook County, Illinois, and found that, on average, homeowners who are foreclosed upon are likely to move more frequently, are 20 percentage points less likely to own their home, have more unpaid debt collections, and have slightly higher rates of bankruptcy. After foreclosure, some homeowners move to worse neighborhoods (measured by income and school test scores) and are more likely to get divorced. Foreclosed-upon homeowners also suffer from negative physical and mental

health consequences. Currie and Tekin (2015) analyzed foreclosure, emergency room visit, and hospitalization data from Arizona, California, Florida, and New Jersey. Their work shows that one additional foreclosure within a zip code was associated with 0.78 additional urgent unscheduled hospital and emergency room visits in the following year, with increases in the cases of serious illness such as heart attack, stroke, gastrointestinal hemorrhage, kidney failure, and respiratory failure. The negative impact of foreclosure on health is further compounded today because COVID-19 mortality rates are higher for those suffering from comorbidities. Tsai (2015) reviews research examining the link between foreclosure and mental health and finds that the stress of experiencing foreclosure was associated with higher rates of depression, anxiety, alcohol use, psychological distress, and suicide. Foreclosures have additional spillover effects into the surrounding neighborhood. Gupta (2019) finds that foreclosures are contagious: one foreclosure in a neighborhood leads to an additional 0.46 foreclosures in the neighboring area. Following a foreclosure, refinancing activity drops by at least 33 percent among neighbors over the next two years, suggesting a reduction in credit availability for homeowners in a neighborhood experiencing a foreclosure." The citations in this excerpt are available in the reference list. See also Fisher, Lambie-Hanson, and Willen (2015).

[50] We believe the interest rate and duration assumptions are reasonable (if not conservative) for the average loan in forbearance in the next few years. For a present-value calculator, see "Present Value Calculator," Calculator Soup, accessed July 11, 2022, https://www.calculatorsoup.com/calculators/financial/present-value-calculator.php.

[51] We got the $500 number from the FHFA's calculations (OIG 2021). The remainder of the details of their calculation is not clear from the OIG's description. Moreover, the FHFA's bottom-line number of $6 billion cost should not be compared with ours. The FHFA appears to have estimated the pandemic's costs to the GSEs' balance sheets, with the majority of the FHFA's estimate coming "from expected loan losses due to anticipated defaults in the wake of forbearance," which would have been the effect of borrowers defaulting during the pandemic (as opposed to being a causal effect of forbearances).

[52] This excludes the 7 percent of borrowers who are still in forbearance.

[53] As suggested by data from the Federal Reserve Bank of Philadelphia and Black Knight.

[54] For the lenders that use private-label mortgage-backed securities instead of keeping loans in portfolio, implementing forbearance could be difficult. For the proposal to work, servicers must be reimbursed for forborne payments at the end of the forbearance period. Private-label mortgage-backed securities do not currently have the ability to add principal to a mortgage.

[55] See, for example, Fannie Mae (2021, 11): "Involuntary prepayments, on the other hand, occur when borrowers are unable to make their mortgage payments and go into default. The responsibility then lies with Fannie Mae to purchase these delinquent loans out of the MBS trust, generally after a borrower has defaulted on their mortgage payments for four or more consecutive months."

[56] See Bonnie Sinnock, "4 Servicing Changes from the Pandemic That HUD Will Keep," National Mortgage News, February 28, 2022, https://www.nationalmortgagenews.com/list/4-servicing-changes-from-the-pandemic-that-hud-will-keep; and Federal Housing Finance Agency, "FHFA Addresses Servicer Liquidity Concerns, Announces Four Month Advance Obligation Limit for Loans in Forbearance," news release, April 21, 2020, https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Addresses-Servicer-Liquidity-Concerns-Announces-Four-Month-Advance-Obligation-Limit-for-Loans-in-Forbearance.aspx. The Pass-Through Assistance Program currently covers only principal and interest. Ideally, the US Department of Housing and Urban Development would develop a periodic partial claim where servicers could get reimbursed for taxes and insurance expenses as well, similar to the current Fannie Mae practice. The Pass-Through Assistance Program could also be adjusted to decrease the potential stigma for servicers using it, as servicers essentially declare that this program is their last credit resort.

[57] The FHA and the VA (and Ginnie Mae) have been historically underfunded, and thus it might be hard to expect them to lead the way. Fannie Mae and Freddie Mac were in conservatorship for close to 15 years and thus have little incentive to implement this type of program. Moreover, it would likely be unprofitable in the short run, as mortgage insurance providers and credit risk transfer investors already insure the GSEs against much of their short-term losses. The benefits to the GSEs would be in the distant future and would be far smaller than the social benefit (as our cost-benefit analysis above shows).

[58] See Protections for Borrowers Affected by the COVID-19 Emergency under the Real Estate Settlement Procedures Act (RESPA), Regulation X, 86 Fed. Reg. 34848 (June 30, 2021); and Lambie-Hanson, Vickery, and Akana (2021).

[59] Jung Hyun Choi, Alanna McCargo, and Laurie Goodman, "Three Differences between Black and White Homeownership That Add to the Housing Wealth Gap," *Urban Wire* (blog), Urban Institute, February 28, 2019, https://www.urban.org/urban-wire/three-differences-between-black-and-white-homeownership-add-housing-wealth-gap.

[60] The refinance wave that reduced many borrowers' monthly payments had not touched many of the borrowers who needed it the most: borrowers with low incomes, borrowers who lost employment or were missing payments, borrowers with low loan balances, and Black and Hispanic borrowers. Allowing for a more streamlined refinance program would put these borrowers on firmer financial footing when interest rates are low, giving them more bandwidth to withstand negative changes in financial circumstances. See Agarwal et al. (2021); Edelberg, Sheiner, and Wessel (2022); Gerardi, Lambie-Hanson, and Willen (2021); Golding et al. (2020); Defusco and Mondragon (2020); Gerardi, Willen, and Zhang (2020); and Bhagat (2021a).

References

Adelino, Manuel, Kristopher Gerardi, and Paul S. Willen. 2013. "Why Don't Lenders Renegotiate More Home Mortgages? Redefaults, Self-Cures, and Securitization." *Journal of Monetary Economics* 60 (7): 835–53. https://doi.org/10.1016/j.jmoneco.2013.08.002.

Agarwal, Sumit, Souphala Chomsisengphet, Hua Kiefer, Leonard C. Kiefer, and Paolina C. Medina. 2021. *Refinancing Inequality during the COVID-19 Pandemic*. Working paper. Washington, DC: Federal Deposit Insurance Corporation, Center for Financial Research.

Ambrose, Brent W., and Charles A. Capone. 1998. "Modeling the Conditional Probability of Foreclosure in the Context of Single-Family Mortgage Default Resolutions." *Real Estate Economics* 26 (3): 391–429. https://doi.org/10.1111/1540-6229.00751.

An, Xudong, and Larry Cordell. 2020. *Mortgage Loss Severities: What Keeps Them So High?* Working Paper 20-37. Philadelphia: Federal Reserve Bank of Philadelphia.

An, Xudong, Larry Cordell, Liang Geng, and Keyoung Lee. 2021. *Inequality in the Time of COVID-19: Evidence from Mortgage Delinquency and Forbearance*. Working Paper 21-09. Philadelphia: Federal Reserve Bank of Philadelphia.

Anenberg, Elliot, and Edward Kung. 2014. "Estimates of the Size and Source of Price Declines Due to Nearby Foreclosures." *American Economic Review* 104 (8): 2527–51.

Avery, Robert B., Mary F. Bilinski, Tim Critchfield, Craig Davis, Ian H. Keith, Ismail E. Mohamed, Saty Patrabansh, Jay D. Schultz, Rebecca Sullivan, and Shelly Ver Ploeg. 2021. *Appendix D: National Survey of Mortgage Originations Public Use File: Select Weighted Tabulations, 2013–2019*. Washington, DC: National Mortgage Database.

Baily, Martin Neil. 1978. "Some Aspects of Optimal Unemployment Insurance." *Journal of Public Economics* 10 (3): 379–402. https://doi.org/10.1016/0047-2727(78)90053-1.

Bhagat, Kanav. 2021a. "Extending the Benefits of Mortgage Refinancing: The Case for the Auto-Refi Mortgage." New York: JPMorgan Chase Institute.

———. 2021b. "Avoiding COVID-19 Related Foreclosures by Implementing Cost-Effective Mortgage Modifications for Federally Backed Loans." New York: JPMorgan Chase Institute.

Black Knight. 2022. "Mortgage Monitor: April 2022 Report." Jacksonville, FL: Black Knight.

Brown, Scott, Jane Herr, Radha Roy, and Jacob Alex Klerman. 2020a. *Employee and Worksite Perspectives of the Family and Medical Leave Act: Supplemental Results from the 2018 Surveys*. Rockville, MD: Abt Associates.

———. 2020b. "Employee and Worksite Perspectives of the FMLA." Rockville, MD: Abt Associates.

Calem, Paul S., Julapa Jagtiani, and William W. Lang. 2017. "Foreclosure Delay and Consumer Credit Performance." *Journal of Financial Services Research* 52:225–51.

Capone, Charles A. 1996. *Providing Alternatives to Mortgage Foreclosure: A Report to Congress*. Washington, DC: US Department of Housing and Urban Development.

Chetty, Raj. 2006. "A General Formula for the Optimal Level of Social Insurance." *Journal of Public Economics* 90 (10–11): 1879–901. https://doi.org/10.1016/j.jpubeco.2006.01.004.

Chodorow-Reich, Gabriel, and John Coglianese. 2019. "Unemployment Insurance and Macroeconomic Stabilization." Washington, DC: Brookings Institution.

Cordell, Larry, Liang Geng, Laurie S. Goodman, and Lidan Yang. 2015. "The Cost of Foreclosure Delay." *Real Estate Economics* 43 (4): 916–56. https://doi.org/10.1111/1540-6229.12107.

Currie, Janet, and Erdal Tekin. 2015. "Is There a Link between Foreclosure and Health?" *American Economic Journal: Economic Policy* 7 (1): 63–94.

Defusco, Anthony A., and John Mondragon. 2020. "No Job, No Money, No Refi: Frictions to Refinancing in a Recession." *Journal of Finance* 75 (5): 2327–376. https://doi.org/10.1111/jofi.12952.

Diamond, Rebecca, Adam Guren, and Rose Tan. 2020. *The Effect of Foreclosures on Homeowners, Tenants, and Landlords*. Working Paper 27358. Cambridge, MA: National Bureau of Economic Research.

Edelberg, Wendy, Louise Sheiner, and David Wessel, eds. 2022. *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19*. Washington, DC: Brookings Institution.

Fannie Mae. 2021. "Basics of Fannie Mae Single-Family MBS." Washington, DC: Fannie Mae.

———. 2022. *Equitable Housing Finance Plan*. Washington, DC: Fannie Mae.

Fannie Mae and Freddie Mac. 2017. "Mortgage Assistance Application." Washington, DC: Fannie Mae; McLean, VA: Freddie Mac.

Farrell, Diana, Fiona Greig, and Chen Zhao. n.d. *Did Mortgage Forbearance Reach the Right Homeowners? Income and Liquid Assets Trends for Homeowners during the COVID-19 Pandemic*. New York: JPMorgan Chase & Co. Institute.

Fisher, Lynn M., Lauren Lambie Hanson, and Paul Willen. 2015. "The Role of Proximity in Foreclosure Externalities: Evidence from Condominiums." *American Economic Journal: Economic Policy* 7 (1): 119–40.

Freddie Mac. 2022. *Equitable Housing Finance Plan: Our Commitment to Making Home Possible Equitably*. McLean, VA: Freddie Mac.

Fulford, Scott, and Marie Rush. 2020. "Insights from the Making Ends Meet Survey." Washington, DC: Consumer Financial Protection Bureau.

Ganong, Peter, and Pascal Noel. 2019. "Consumer Spending during Unemployment: Positive and Normative Implications." *American Economic Review* 109 (7): 2383–424.

———. 2020. "Liquidity versus Wealth in Household Debt Obligations: Evidence from Housing Policy in the Great Recession." *American Economic Review* 110 (10): 3100–38.

———. 2022. *Why Do Borrowers Default on Mortgages?* Working paper. Chicago: University of Chicago.

Ganong, Peter, Pascal Noel, and Joseph Vavra. 2020. "US Unemployment Insurance Replacement Rates during the Pandemic." *Journal of Public Economics* 191 (November): 104273. https://doi.org/10.1016/j.jpubeco.2020.104273.

Gerardi, Kristopher, Kyle F. Herkenhoff, Lee E. Ohanian, and Paul S. Willen. 2018. "Can't Pay or Won't Pay? Unemployment, Negative Equity, and Strategic Default." *Review of Financial Studies* 31 (3): 1098–131. https://doi.org/10.1093/rfs/hhx115.

Gerardi, Kristopher, Lauren Lambie-Hanson, and Paul Willen. 2021. *Racial Differences in Mortgage Refinancing, Distress, and Housing Wealth Accumulation during COVID-19*. Philadelphia: Federal Reserve Bank of Philadelphia.

———. 2022a. "Part I. Lessons Learned from Mortgage-Borrower Policies and Outcomes." In *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19*, edited by Wendy Edelberg, Louise Sheiner, and David Wessel, 168–91. Washington, DC: Brookings Institution.

———. 2022b. *Lessons Learned from Mortgage Borrower Policies and Outcomes during the COVID-19 Pandemic*. Atlanta: Federal Reserve Bank of Atlanta.

Gerardi, Kristopher, Eric Rosenblatt, Paul S. Willen, and Vincent Yao. 2015. "Foreclosure Externalities: New Evidence." *Journal of Urban Economics* 87 (May): 42–56. https://doi.org/10.1016/j.jue.2015.02.004.

Gerardi, Kristopher, Paul Willen, and David Hao Zhang. 2020. *Mortgage Prepayment, Race, and Monetary Policy*. Working paper. Atlanta: Federal Reserve Bank of Atlanta.

Goldberg, Lawrence, and Charles A. Capone. 1998. "Multifamily Mortgage Credit Risk: Lessons from Recent History." *Cityscape* 4 (1): 93–113.

Golding, Edward, Laurie Goodman, Richard Green, and Susan Wachter. 2020. "The Mortgage Market as a Stimulus Channel in the COVID-19 Crisis." Philadelphia: Penn Institute for Urban Research.

Goodman, Laurie. 2016. "Servicing Costs and the Rise of the Squeaky-Clean Loan." Washington, DC: Urban Institute.

———. 2017. *Quantifying the Tightness of Mortgage Credit and Assessing Policy Actions*. Working paper. Washington, DC: Urban Institute.

Goodman, Laurie, and Jun Zhu. 2015. "Loss Severity on Residential Mortgages: Evidence from Freddie Mac's Newest Data." Washington, DC: Urban Institute.

Gupta, Arpit. 2019. "Foreclosure Contagion and the Neighborhood Spillover Effects of Mortgage Defaults." *Journal of Finance* 74 (5): 2249–301. https://doi.org/10.1111/jofi.12821.

Holzer, Harry J., R. Glenn Hubbard, and Michael R. Strain. 2021. *Did Pandemic Unemployment Benefits Reduce Employment? Evidence from Early State-Level Expirations in June 2021*. Working Paper 29575. Cambridge, MA: National Bureau of Economic Research.

Hsu, Joanne W., David A. Matsa, and Brian T. Melzer. 2018. "Unemployment Insurance as a Housing Market Stabilizer." *American Economic Review* 108 (1): 49–81.

HUD (US Department of Housing and Urban Development). 2021. *FHA Single Family Housing Policy Handbook*. Washington, DC: HUD.

———. n.d. "Economic Impact Analysis of the FHA Refinance Program for Borrowers in Negative Equity Positions." Washington, DC: HUD.

HUD Offices (US Department of Housing and Urban Development Office of Risk Management and Regulatory Affairs and Office of Evaluation, Reporting, and Analysis Division). 2022a. *Quarterly Report to Congress on FHA Single-Family Mutual Mortgage Insurance Fund Programs: FY 2022 Q1*. Washington, DC: HUD Offices.

———. 2022b. "FHA Single Family Loan Performance Trends." Washington, DC: HUD Offices.

Joint Economic Committee. 2007. *The 2007 Joint Economic Report*. Washington, DC: US Government Printing Office.

Keep Your Home California. 2018. "Unemployment Mortgage Assistance: Summary Guidelines." Sacramento: California Housing Finance Agency.

Kermani, Amir, and Francis Wong. 2021. *Racial Disparities in Housing Returns*. Working Paper 29306. Cambridge, MA: National Bureau of Economic Research.

Lambie-Hanson, Lauren. 2015. "When Does Delinquency Result in Neglect? Mortgage Distress and Property Maintenance." *Journal of Urban Economics* 90 (November): 1–16. https://doi.org/10.1016/j.jue.2015.07.002.

Lambie-Hanson, Lauren, James Vickery, and Tom Akana. 2021. "Recent Data on Mortgage Forbearance: Borrower Uptake and Understanding of Lender Accommodations." Philadelphia: Federal Reserve Bank of Philadelphia.

Le, Ben, and Anthony Pennington-Cross. Forthcoming. "Mortgage Losses: Loss on Sale and Holding Costs." *Journal of Real Estate Research*.

Li, Wei, Laurie Goodman, and Denise Bonsu. 2016. *The Lasting Impact of Foreclosures and Negative Public Records*. Washington, DC: Urban Institute.

Liu, Feng, Young Jo, Vanessa Jimenez-Read, and Alex Rodrigue. 2021. *Data Point: 2020 Mortgage Market Activity and Trends*. Washington, DC: Consumer Financial Protection Bureau.

Low, David. 2021a. *Psychic Moving Costs and Mortgage Default with Positive Equity*. Working Paper 2021-01. Washington, DC: Consumer Financial Protection Bureau, Office of Research.

———. 2021b. *What Triggers Mortgage Default? New Evidence from Linked Administrative and Survey Data*. Washington, DC: Consumer Financial Protection Bureau.

Moulton, Stephanie, Yung Chun, Stephanie Casey Pierce, Roberto Quercia, Sarah Riley, and Holly Holtzen. 2022. "Does Temporary Mortgage Assistance for Unemployed Homeowners Reduce Longer-Term Mortgage Default? An Analysis of the Hardest Hit Fund Program." *Journal of Policy Analysis and Management* 41 (2): 515–51. https://doi.org/10.1002/pam.22346.

OIG (Office of Inspector General). 2021. "FHFA Has Determined That the Enterprises Can Absorb the Full Cost of CARES Act Mortgage Forbearance." Washington, DC: Federal Housing Finance Agency, OIG.

Parrott, Jim, and Mark Zandi. 2013. "Opening the Credit Box." Washington, DC: Urban Institute.

RADAR Group (Risk Assessment, Data Analysis, and Research Group). 2022. "Rising Rates Put Existing Agency Loan Mod Programs at Risk of Missing Targets." Philadelphia: Federal Reserve Bank of Philadelphia, RADAR Group.

Tsai, Alexander C. 2015. "Home Foreclosure, Health, and Mental Health: A Systematic Review of Individual, Aggregate, and Contextual Associations." *PLoS ONE* 10 (4): e0123182. https://doi.org/10.1371/journal.pone.0123182.

Visalli, Katie, Matthew Dean, and Stephanie Moulton. 2022. "Racial Differences in Forbearance and Refinancing among Affordable Mortgage Borrowers during COVID-19." Presentation given at the Association for Public Policy Analysis and Management Research Conference, Austin, TX, March 27–29.

About the Authors

Alexei Alexandrov works with several nonprofit organizations on consumer finance policy, economics, and machine learning issues. Previously, Alexandrov was the chief economist at the Federal Housing Finance Agency; a senior manager at Amazon, where he built and led data science and machine learning teams; and director of central algorithms at Wayfair. He also worked on regulations and reports as a senior economist at the Consumer Financial Protection Bureau, including the ability-to-repay/qualified mortgage rule, the Truth in Lending Act Real Estate Settlement Procedures Act integrated disclosures, the 2014 Manufactured Housing Report, and arbitration rulemaking. Alexandrov was also a teaching award–winning tenure-track faculty member at the University of Rochester's business school. He received his PhD from Northwestern University and has published in multiple peer-reviewed academic journals.

Laurie Goodman is an Institute fellow and the founder of the Housing Finance Policy Center at the Urban Institute. The center provides policymakers data-driven analyses of housing finance policy issues they can depend on for relevance, accuracy, and independence. Before joining Urban, Goodman spent 30 years as an analyst and research department manager at several Wall Street firms. From 2008 to 2013, she was a senior managing director at Amherst Securities Group LP, a boutique broker-dealer specializing in securitized products, where her strategy effort became known for its analysis of housing policy issues. From 1993 to 2008, Goodman was head of global fixed income research and manager of US securitized products research at UBS and predecessor firms, which were ranked first by *Institutional Investor* for 11 straight years. Before that, she held research and portfolio management positions at several Wall Street firms. She began her career as a senior economist at the Federal Reserve Bank of New York. Goodman was inducted into the Fixed Income Analysts Hall of Fame in 2009. Goodman serves on the board of directors of MFA Financial, Arch Capital Group Ltd., Home Point Capital Inc., and DBRS Inc. and is a consultant to the Amherst Group. She has published more than 200 journal articles and has coauthored and coedited five books. Goodman has a BA in mathematics from the University of Pennsylvania and an AM and PhD in economics from Stanford University.

Ted Tozer is a nonresident fellow in the Urban Institute's Housing Finance Policy Center. Immediately before joining Urban, he was a senior fellow at the Milken Institute's Center for Financial Markets. Previously, Tozer was president of Ginnie Mae for seven years, bringing with him to the institution more than 30 years of experience in the mortgage, banking, and securities industries. As president of Ginnie

Mae, Tozer managed Ginnie Mae's nearly $1.7 trillion guarantees of mortgage-backed securities and more than $460 billion in annual issuance. He also led the modernization effort of the Ginnie Mae Securitization Platform. Tozer oversaw the transition for a depository-dominated issuer base to an independent mortgage banker–dominated base. He was the Obama administration point person for rewriting the Home Affordable Refinance Program. Tozer also oversaw the transition from the Ginnie Mae I program to the Ginnie Mae II program. Before joining Ginnie Mae, he was senior vice president of capital markets at the National City Mortgage Company (NCM) for more than 25 years, overseeing pipeline hedging, pricing, loan sales, loan delivery, and credit guideline exceptions. He was instrumental in transforming NCM from an originate-and-hold lender to an originate-and-sell lender. Tozer also serves on the board of directors of PennyMac Financial Services, a mortgage originator. He holds a bachelor's degree in accounting and finance from Indiana University.

Statement of Independence

500 L'Enfant Plaza SW
Washington, DC 20024

www.urban.org