

Lessons Learned from Mortgage Borrower Policies and Outcomes during the COVID-19 Pandemic

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Summary:

This article evaluates how the most important policy responses to the COVID-19 pandemic affected the US mortgage market. In particular, we consider the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020; the follow-on American Rescue Plan (ARP) Act of 2021, which extended many of the provisions in the CARES Act; and the Federal Reserve's large-scale asset purchase (LSAP) program that was announced in March 2020. Our analysis considers both the aggregate effects and the distributional effects of these policies on mortgage borrowers. Overall, we find that pandemic-era forbearance worked very well in reducing foreclosures and mortgage delinquencies for all borrowers, better than the mortgage modification programs of the Great Recession, both because there were fewer restrictions and because the economic environment was so different. In contrast, while many borrowers benefited from the huge decline in mortgage rates caused, in part, by the LSAP program, Black and Hispanic borrowers were far less likely to benefit than White borrowers due to significantly slower refinancing speeds.

Key findings:

1. Forbearance, expanded unemployment insurance (UI) benefits, and economic impact payments (EIPs) were quite effective in alleviating financial distress for mortgage borrowers at the outset of the pandemic and in preventing longer-run problems in mortgage and housing markets.
2. Minority mortgage borrowers were much more likely to experience distress and miss mortgage payments during the pandemic period, which was likely due, in part, to higher rates of job loss. However, we show that minority borrowers who missed mortgage payments were just as likely to use forbearance as White borrowers who missed mortgage payments.
3. Low long-term interest rates, due in part to the Federal Reserve's large-scale asset purchases, spurred a refinancing wave. While borrowers who were enrolled in forbearance were unable to refinance, a large fraction of borrowers who remained current on their loans during the height of the pandemic took advantage of the refinancing opportunity and significantly lowered their payments.
4. Unlike forbearance, however, there were large differences in refinancing behavior across racial and ethnic groups. Through March 2021, only 10.6 percent of Black borrowers refinanced as compared with 15 percent of Hispanic borrowers, almost 19 percent of White borrowers, and 22 percent of Asian borrowers. After controlling for basic

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underwriting variables including credit score, loan-to-value ratio, income at origination, loan amount, as well as the potential amount of refinance savings, Black borrowers were 67 percent as likely as White borrowers to refinance.

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1 Introduction

The COVID-19 pandemic, which has proven to be the worst public health crisis in a century, has caused significant distress in the mortgage market. Widespread job loss in the early stages of the pandemic resulted in waves of missed mortgage payments. As figure 1 (panel A) shows, the share of loans past due approached levels last seen during the global financial crisis (GFC) and subsequent Great Recession more than a decade ago.

In this article, we detail how the most important policy responses to the pandemic affected the mortgage market. In particular, we focus on the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020; the follow-on American Rescue Plan (ARP) Act of 2021, which extended many of the provisions in the CARES Act; and the Federal Reserve's large-scale asset purchase (LSAP) program that was announced in March 2020. Our analysis considers the aggregate effects and the distributional effects of these policies on US mortgage borrowers. Although there are numerous ways to study the data, we will focus primarily on documenting differences across racial and ethnic groups. This decision is motivated by the fact that the COVID-19 virus disproportionately affected minority communities both as a disease and as a disruptive economic force. During the pandemic, Black and Hispanic individuals faced elevated risk of infection, hospitalization, and death.¹ Furthermore, minorities experienced significantly worse labor market outcomes during the pandemic. For example, the unemployment rate peaked in April 2020 at 16.7 percent for Black workers versus 14.1 percent for White workers. Even more concerning, though, unemployment stayed elevated much longer for minority workers than for White workers as the economy healed.² By September 2020 the White unemployment rate had fallen by more than half, to 7.0 percent, whereas in March 2021, almost a year after the pandemic started, the Black unemployment rate was still close to 10 percent (BLS (2022)). Although most of our focus is on documenting racial disparities, we also look at differential policy effects across gender, household income levels, and county unemployment levels.

The CARES Act included a national forbearance mandate, a foreclosure moratorium, significantly expanded unemployment insurance (UI) benefits, and economic impact payments (EIPs) to most households. We show that, although minority mortgage borrowers were much more likely to experience distress and miss mortgage payments, conditional on missing payments, forbearance uptake was similar across racial and ethnic lines. Furthermore, we argue that these CARES Act policies were quite effective in alleviating financial distress at the outset of the pandemic and in preventing longer-run problems in mortgage and housing markets.

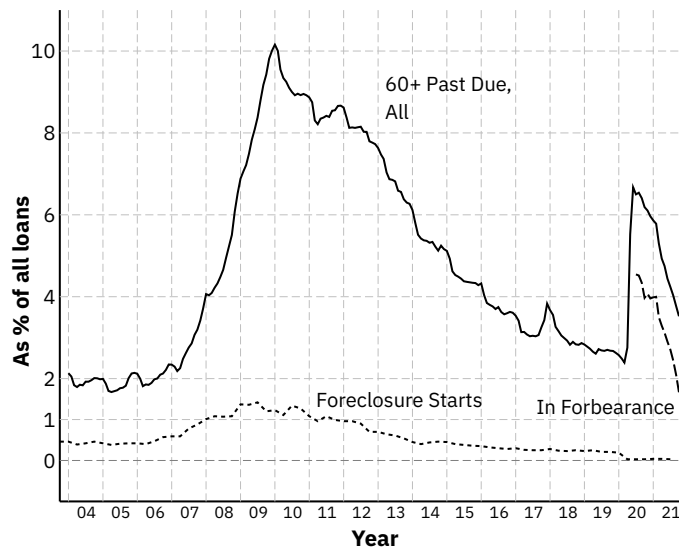
The Federal Reserve's LSAP program focused on improving market functioning and lowering long-term interest rates. Mortgage-backed security (MBS) purchases were a significant

¹ See [Van Dorn, Cooney and Sabin \(2020\)](#) as well as Centers for Disease Control and Prevention (CDC) data on hospitalizations and death rates by race and ethnicity ([CDC \(2019\)](#)).

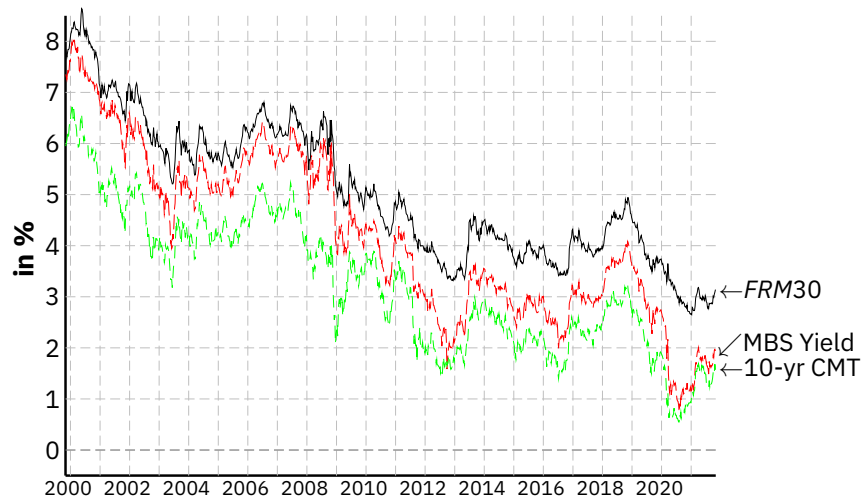
² For simplicity, we use "White" and "Hispanic" to refer to "non-Hispanic White" and "Hispanic White," respectively.

Figure 1: Mortgage Status and Interest Rates

Panel A: Mortgage Nonpayment and Foreclosure, 2005–Present



Panel B: Interest Rates, 2007–Present



Notes: Panel A: Mortgages past due and in forbearance are from McDash and McDash Flash data, respectively. Forbearance shares include only loans 60 days or more past due and in forbearance. Foreclosure starts reported by the Mortgage Bankers’ Association (MBA) National Delinquency Survey: <https://www.mba.org/news-research-and-resources/research-and-economics/single-family-research/national-delinquency-survey>. 60+ Past Due includes all past-due loans, including loans in foreclosure. Panel B: FRM30 is the note rate on a 30-year fixed-rate mortgage as measured by the Freddie Mac Primary Mortgage Market Survey. MBS Yield uses data from JPMorgan Markets to compute the yield on a security containing a 30-year FRM paying FRM30. 10-year CMT is the constant-maturity yield on a 10-year bond as reported in FRB H-15. For details, see [Fuster et al. \(2021\)](#).

Source: McDash and McDash Flash Data from Black Knight Data Analytics, LLC; [Fuster et al. \(2021\)](#); Mortgage Bankers’ Association Delinquency Survey; authors’ calculations

component of the program, and [Fuster et al. \(2021\)](#) show that they indeed lowered mortgage rates and spurred a significant wave of refinancing. Although borrowers who were enrolled in forbearance were unable to refinance, we show that a large fraction of borrowers who remained current on their loans during the height of the pandemic took advantage of the refinancing opportunity and significantly lowered their payments. Unlike the case of forbearance, however, there were large differences in refinancing behavior across racial and ethnic groups. We estimate that, through March 2021, only 10.6 percent of Black borrowers refinanced as compared with 15 percent of Hispanic borrowers, almost 19 percent of White borrowers, and 22 percent of Asian borrowers. After controlling for basic underwriting variables including credit score, loan-to-value ratio, income at origination, loan amount, as well as the potential amount of refinance savings, Black borrowers were 67 percent as likely as White borrowers to refinance. These refinance disparities could be driven by several factors including, but not limited to, differences in income/employment risk, differences in health risk, or possibly discriminatory practices. Unfortunately, though our mortgage data allow us to precisely document the disparities, they do not contain enough detail to identify the underlying factors. Our hope is that as better data become available, future research will pinpoint the causal mechanisms.

An alternative way to measure inequality in refinances is to look at the payment savings. In [Gerardi, Lambie-Hanson and Willen \(2021\)](#), we estimate that the typical refinance reduced the borrower's monthly payment by about \$280, leading to a payment reduction of \$5.3 billion per year for all households that refinanced in the first 10 months of 2020. Of those savings, we estimate that only \$198 million, or 3.7 percent, went to Black households, who held 5.9 percent of mortgage debt in our sample. To put these numbers in perspective, Black households account for 13.3 percent of the population and 9.1 percent of all homeowners.

Finally, we conclude the article with a discussion of some of the lessons that we believe policymakers should take away from the pandemic experience. 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 simply been aligned, as the state of the prepandemic housing and mortgage markets and the dynamic of the pandemic itself set up almost perfectly for forbearance to be an especially effective policy. Specifically, the rapid labor market recovery in the late spring and early summer of 2020 meant that most borrowers only needed a few months of assistance. In addition, the majority of outstanding mortgage debt (65–70 percent) was insured by the US government going into the pandemic ([Institute \(2021\)](#)), including that held by the most financially vulnerable segments of the market, and thus most financially distressed borrowers had direct access to the forbearance policy mandated by the CARES Act. Finally, we note that the housing market was exceptionally healthy as a result of years of robust house price growth and low defaults and foreclosures, which meant that most borrowers exiting forbearance were not in danger of being evicted from their homes. So although 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.

Although forbearance was very effective in mitigating mortgage market distress, we

argue that the Federal Reserve’s LSAPs, implemented at the onset of the pandemic, had more modest effects. Although empirical evidence suggests that LSAPs lowered mortgage rates (Fuster et al. (2021)) and spurred a refinancing boom in the spring and summer of 2020, most borrowers experiencing pandemic-related financial distress were likely unable to refinance. A first-order impediment was forbearance itself, as borrowers enrolled in a forbearance plan were required to exit the plan and make three consecutive mortgage payments in order to qualify for refinancing. Combined with the high fees associated with refinancing, this requirement meant that many borrowers facing pandemic-related financial distress and liquidity constraints were unable to exploit rate declines to lower their debt burdens. This factor likely played a role in the large racial disparities in refinancing described above. We offer a few suggestions to ensure that the benefits of lower mortgage rates reach a broader set of borrowers in future downturns. These suggestions include the development and marketing of alternative mortgage products that automatically lower payments when rates decline as well as more widespread adoption of streamlined refinance programs that do not require employment or income verification.

2 Data

For much of the analysis in this article, we track mortgage performance over time by borrower race and ethnicity by combining several sources of anonymized data. These sources are Black Knight McDash mortgage servicing data; Home Mortgage Disclosure Act (HMDA) data; and two credit bureau data sets from Equifax: one from Credit Risk Insight Servicing data linked to McDash data (known as CRISM) and the other from the Federal Reserve Bank of New York/Equifax Consumer Credit Panel.³ The McDash data provide information on loan performance, while the Equifax data allow us to observe other mortgages the borrowers have and to determine if any mortgages are in forbearance. The HMDA data enable us to identify the race, ethnicity, and gender of the borrower and to capture borrower income at the time of underwriting. We focus on 30-year, fixed-rate, first-lien loans originated during the 2010 to 2019 period. Loans originated during that period made up about 75 percent of active accounts and 85 percent of active loan balances in 2019. We restrict our sample to mortgages secured by owner-occupied, single-family homes and condos. We further limit the sample to Federal Housing Administration (FHA) loans and conventional loans held by Fannie Mae or Freddie Mac (government-sponsored enterprises, or GSEs). Although we exclude portfolio and private-label securitized loans from our analysis, they make up less than 35 percent of loans active during the pandemic. As An et al. (2021) show, the forbearance rates of portfolio loans were similar to GSE loans, and the rates among private-label securitized loans were similar to FHA loans.

We supplement the matched data set with data from Optimal Blue to estimate the interest rate that borrowers in our sample would likely receive upon refinancing.⁴ To do this, we

³ See Gerardi, Lambie-Hanson and Willen (2021) for more information on the matching procedures and match rate.

⁴ Optimal Blue data, as referenced throughout this article, are anonymized mortgage market/rates data

use the median interest rate locked each month by borrowers with similar credit scores and loan-to-value ratios, as captured in the Optimal Blue database.⁵ We use CoreLogic Solutions house price indices at the ZIP code, county, and state levels to analyze recent trends in home price appreciation for our mortgage sample and to calculate updated monthly loan-to-value ratios and home equity accumulation.⁶

3 Mortgage Market Policy Responses to the COVID-19 Pandemic

A key premise of the policy response to the COVID-19 pandemic was that alleviating financial distress at the household level had desirable macroeconomic consequences. A summary measure of the financial burden faced by a mortgage borrower is the debt service ratio (DSR)

$$DSR = \frac{m}{y}$$

where m and y are the mortgage payment and income, respectively. All else equal, an increase in the DSR makes a household worse off, suggesting that an increase can be a signal of distress. Borrower responses to a higher DSR can also have negative spillover effects, particularly when increases in DSRs are widespread across households. For example, borrowers can reduce spending on nonhousing goods and services, reducing aggregate demand. Or they can default on their mortgages and weaken the financial system. Finally, borrowers can list their homes on the market and flood the market with unsold property.

Absent any policy intervention, the COVID pandemic would have led to a massive fall in income and a consequent increase in the DSR. To reduce financial distress, policymakers took three actions early in the pandemic that affected the DSR. The first two—*forbearance* and *asset purchases*—lowered mortgage payments (m), the numerator. The third, *income support programs*, raised income (y), the denominator.

We now discuss details of the three policy interventions.

Forbearance

The CARES Act, passed into law on March 27, 2020, instructed lenders to allow borrowers to postpone payments for up to a year, later extended to 18 months, without incurring any penalty.

that do not contain lender or customer identities or complete rate sheets.

⁵ We calculate the rate assuming the borrower pays zero points (and receives zero credits) from the lender at closing. We observe the borrower's credit score in month t in the CRISM data, and we estimate the loan-to-value ratio of their mortgage by dividing its unpaid principal balance by the estimated value of the home.

⁶ We do this by adjusting the property value at origination by the growth in the CoreLogic ZIP code home price index. We then use the CoreLogic county-level index for loans located in ZIP codes for which CoreLogic does not provide an index, and we use the state-level index if neither ZIP code nor county data are available.

Specifically, the CARES Act stipulated that any borrowers who had mortgages insured by the federal government could enroll in forbearance by simply attesting to financial hardship caused by COVID-19; households did not need to document this hardship.⁷ While the CARES Act forbearance mandate formally applied only to federally backed loans, which accounted for approximately 65–70 percent of the market at the time, servicers of portfolio and private-label securitized mortgages also routinely granted forbearance (An et al. (2021), Cherry et al. (2021)).

Figure 2 shows the stock of loans in forbearance from the first quarter of 2020 through the third quarter of 2021. The gray area in the chart corresponds to loans that remain in forbearance, while the colored areas correspond to the stock of loans that exited forbearance in various ways. The stock of loans in forbearance peaked early in the pandemic, in the second quarter of 2020, and has been slowly declining since. The figure clearly shows that the flows into forbearance were heavily concentrated during the first few months of the pandemic. More than 80 percent of borrowers in our sample who missed mortgage payments in the first three months of the pandemic (April–June 2020) enrolled in forbearance, suggesting that the policy helped most borrowers who experienced financial distress due to the pandemic. Furthermore, previous research (Lambie-Hanson, Vickery and Akana (2021)) has shown that forbearance was concentrated among borrowers who were employed in hard-hit industries before the pandemic, such as leisure, hospitality, arts, and entertainment, as well as among households who had experienced a job disruption or income loss due to the pandemic. Interestingly, approximately one-third of borrowers who enrolled in forbearance during this period stayed current on their mortgage payments, which suggests that forbearance was also widely used by nondistressed borrowers as a form of insurance against employment uncertainty early in the pandemic.⁸

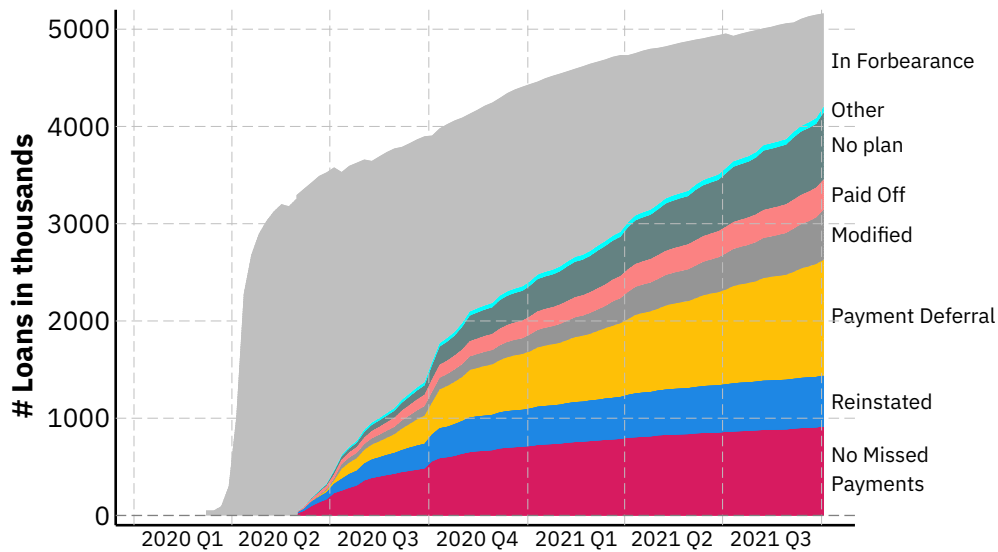
The CARES Act further stipulated that forbearance resulting from the pandemic could not negatively affect a borrower’s credit score, which meant that lenders were not allowed to report borrowers in forbearance as being delinquent on their payments. We show in section 3.3 that this stipulation largely prevented significant declines in the credit scores of borrowers who missed payments.

The CARES Act also included a moratorium on foreclosures. Initially, the moratorium only went through May 17, 2020, but it was extended twice and finally expired on July 31, 2021. For borrowers covered by CARES Act forbearance provisions, the moratorium was largely irrelevant because forbearance prevents any action by the lender against a past-due borrower. However, the moratorium did help borrowers who had payment problems that preceded the pandemic stay in their homes.

⁷ Section 4022 of the CARES Act mandated that borrowers of federally backed mortgages could request forbearance for up to 12 months. It further states, “No fees, penalties, or additional interest will accrue on the loan beyond what is scheduled” (sec. 4022 (b)(3)). In February 2021 the Biden administration extended the CARES Act forbearance mandate through June 2021.

⁸ The fraction of borrowers in forbearance but current on their mortgage payments quickly declined to trivial magnitudes in the second half of 2020.

Figure 2: Forbearance Outcomes with Exit Codes



Note: This figure uses data from the Mortgage Bankers Association’s (MBA) Weekly Forbearance Survey to measure the cumulative outcomes of all loans that entered forbearance at some point. “In forbearance” measures the stock of all loans in forbearance at a moment in time. All other data series are cumulative exits. Note that the MBA cannot distinguish between new entrants and reentrants to forbearance. Thus the same loan may appear twice in the sample. For example, most of the loans that exited with “No plan” most likely reentered forbearance meaning that at the end of the sample, many loans appear in both “No plan” and “In forbearance.” The MBA also does not track loans after the end of forbearance so, for example, many of the “no missed payments” loans may have refinanced after exit but will *not* show up in the “paid off” category. The size of the surveyed universe varies but is typically around 38 million loans per week. A small number of borrowers exited using a repayment plan, and those are included in the “other” category. The first week of data is from May 31, 2020

Source: Mortgage Bankers’ Association (MBA) Weekly Forbearance Survey; authors’ calculations

Asset Purchases

The first mortgage market policy response to COVID-19 came from the Federal Reserve. On March 3, 2020, the Federal Open Market Committee (FOMC) cut the fed funds target rate by 50 basis points. Less than two weeks later, on March 15, the FOMC cut the rate by an additional 100 basis points, taking it essentially to zero. In addition, on the same date, the FOMC initiated large-scale purchases of both mortgage-backed securities (MBS) and Treasury securities. It initially committed to purchasing at least \$200 billion of MBS and \$500 billion of Treasury securities. Panel B of figure 1 shows that on March 20—following these activities—the 10-year, nominal Treasury rate fell below 1 percent for the first time, and MBS yields also fell to historically low levels.

Mortgage rates also fell, though more slowly than Treasury rates or MBS yields. The Freddie Mac Primary Mortgage Market Survey (PMMS) 30-year, fixed-rate mortgage rate fell at the beginning of March, reaching a historic low of 3.29 percent. However, disruptions in the MBS market caused the PMMS rate to rise later in the month. Fed interventions in the MBS market meant that rates fell again in the beginning of April. However, as documented by [Fuster et al. \(2021\)](#), capacity constraints among originators meant that the spread between the primary market rates charged by originators and rates in the MBS market remained wide for an extended period, as illustrated in panel B of figure 1. Rates were historically low but most likely about 20 or 30 basis points higher than they would have been in the absence of binding capacity constraints in the mortgage origination industry, driven by a shortage of qualified workers and operational frictions such as how to complete appraisals and closings while maintaining social distancing.

Not surprisingly, historically low interest rates led to a wave of refinancing. In March 2020, the Mortgage Bankers Association (MBA) refinance index increased to its highest level in more than a decade and remained elevated throughout the entire year.

Income support

In addition to its direct effect on the mortgage market through forbearance, the CARES Act also indirectly affected the market through direct payments to households to make up for income lost as a result of the pandemic. From the standpoint of households, the main program was the expanded provision of UI. The key UI provisions of the CARES Act included expanded coverage to nonsalaried workers who normally do not qualify for UI as well as a supplemental payment of \$600 per week per household. Panel A of figure 3 shows that, starting in May 2020, expanded UI was enough to ensure that aggregate personal income remained at or above its pre-COVID trend for almost every month of the pandemic through February 2022. Additional income support programs, including the Paycheck Protection Program (PPP), meant that, in fact, personal income *exceeded* its prepandemic trend throughout most of that period. Panel B of figure 3 shows that, during the GFC and subsequent Great Recession, income support programs did not play a similar role. The 2008 stimulus program did lead to an increase in income in May and June 2008, but government assistance from September 2008 to March 2009—the acute phase of the Great Recession—was minimal. Congress passed the American Recovery and Reinvestment Act of 2009, which expanded UI and provided other stimulus, but those measures did not compare

to relief provided by the CARES Act and subsequent legislation. In the Great Recession, personal income never returned to its precrisis trend.

Outcomes

Policy was clearly successful at reducing household financial distress caused by income losses due to the pandemic. The heavy, solid black line in panel A of figure 4 shows the mortgage DSR, which the Federal Reserve Board defines as the ratio of scheduled mortgage payments relative to personal disposable income from the National Income and Product Accounts.⁹ The figure shows that the DSR fell by about 55 basis points or roughly 13 percent over the four quarters from the first quarter of 2020 to the first quarter of 2021.

Why did the mortgage DSR fall during the crisis? In panel A of figure 4, we conduct a series of counterfactual experiments to illustrate how policy improved household budgets. Starting from the top, the area labeled “(1) Income Loss” shows what would have happened without any direct assistance from the government. The DSR would have gone up by about 20 basis points and then drifted down as the economy recovered. Our next counterfactual isolates the effect of policy by asking what would have happened if income had remained at its prepandemic level and borrowers had benefited from the policy changes. The area labeled “(2) Forbearance” shows that forbearance would have lowered the DSR initially by about 20 basis points. Visually, panel A of figure 4 shows that early in the pandemic, forbearance and income loss were roughly the same size, which leads to a crucial point: forbearance alone was roughly able to offset the effects of the pandemic if we measure financial distress using the DSR. Our next counterfactual exercise adds interest rate reductions while holding income constant. The area labeled “(3) Interest rate reductions” shows that they had a similar effect to forbearance in overall magnitude. However, the timing of the benefits of forbearance and interest rate reductions was quite different. The benefits of forbearance were front-loaded and played little role by the spring of 2021, whereas interest rate reductions had little effect initially but grew over time.

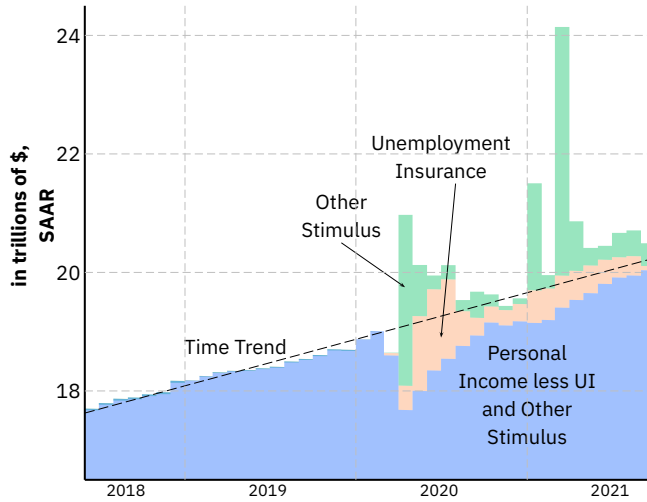
Our final counterfactual experiment consists of adding income support programs to interest rate reductions and forbearance, still holding income constant at prepandemic levels. The area labeled “(4) Income support programs” shows that income support programs had a bigger effect on the DSR than forbearance and interest rate cuts combined in all but one quarter of the pandemic.

Overall, panel B of figure 4 illustrates that the multipronged assault of different parts of the CARES Act and monetary policy meant that, using the DSR as a measure, households were actually better off after the start of the pandemic than before. Either forbearance alone or income support programs alone would have been enough to blunt the effects of the job and income losses associated with the pandemic. Of course, it is important to stress that our analysis ignores any general equilibrium effects of the policies. For example, without forbearance, many households would have cut spending, which would have, in equilibrium, affected the time path of

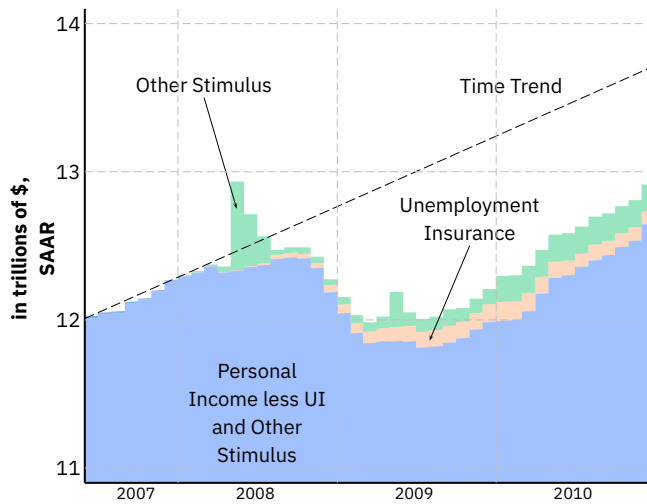
⁹ For details see <https://www.federalreserve.gov/releases/housedebt/about.htm>.

Figure 3: Personal Income after the Great Recession and the COVID-19 Recession

Panel A: COVID-19 Pandemic



Panel B: Great Recession

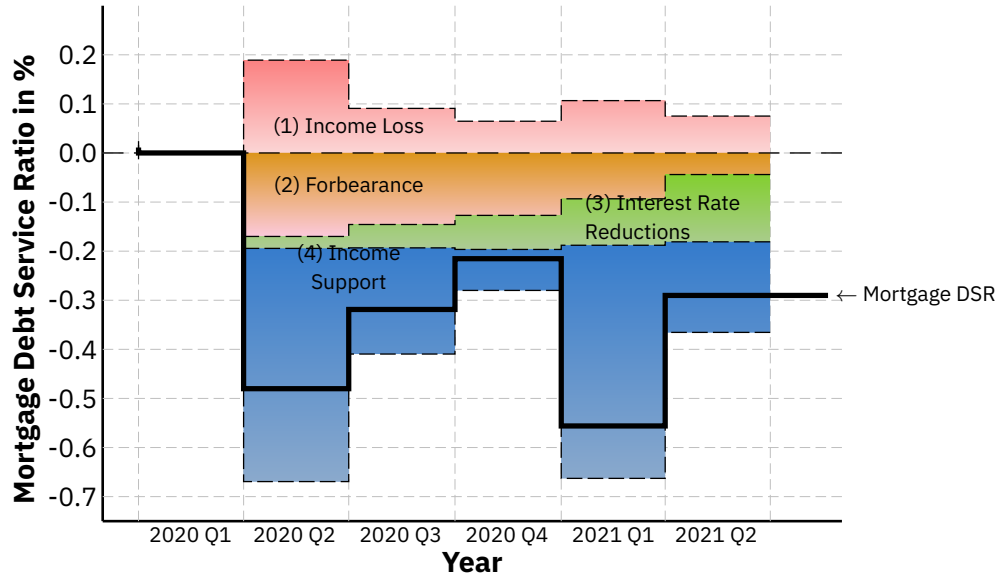


Note: This figure shows data on personal income and its components from the monthly “Personal Income and Outlays” release from the US Bureau of Economic Analysis. “Other stimulus” is “Government social benefits to persons: Other.” Time trends are based on linear regressions of personal income estimated over the period from January 2016 to February 2020, and the period January 2004 to December 2007 for the COVID-19 and Great Recession periods, respectively.

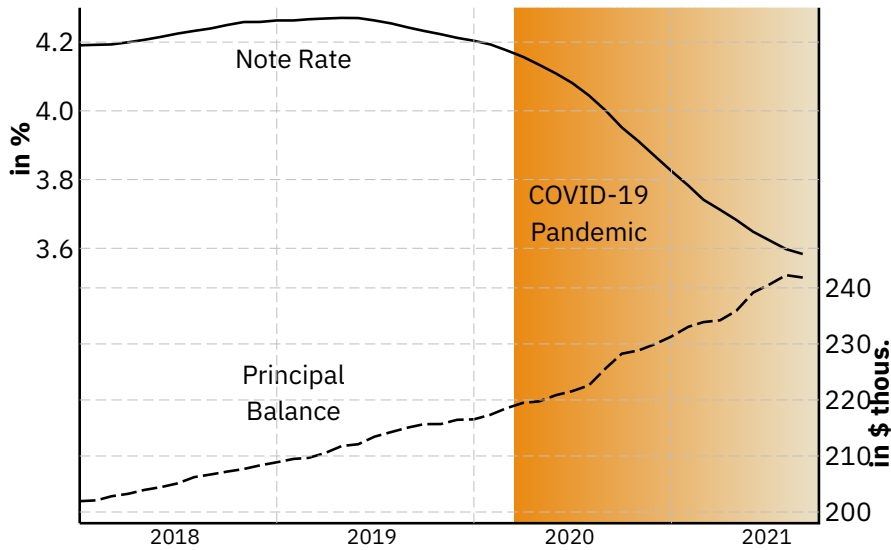
Source: US Bureau of Economic Analysis, data from 2006 to 2022

Figure 4: Evolution of the Mortgage Debt Service Ratio during the Pandemic

Panel A: Decomposition of the Mortgage DSR



Panel B: Sources of Variation in Mortgage Debt Service Costs



Note: In panel A, the four shaded areas represent deviations from a linear prepandemic trend. Panel B shows an unweighted average of the note rate and principal balance on all outstanding mortgages in the McDash dataset.

Source: Federal Reserve Board; McDash data; authors' calculations

household income.

It is perhaps somewhat surprising that the effects of the interest rate reductions were so small. The bottom panel of the figure shows that the average mortgage rate paid by borrowers did in fact fall significantly, dropping by 60 basis points, or about 15 percent, over the pandemic period. But several factors meant that lower rates didn't translate into correspondingly large reductions in monthly payments. The bottom panel shows that lower rates were offset by an acceleration in mortgage balance growth. In addition, some refinancers took advantage of exceptionally low rates on 15-year mortgages and, as a result, had higher payments despite paying less interest.

What Happened to Borrowers in Forbearance?

Forbearance is fundamentally different from interest rate reductions and income support. Interest rate reductions and UI do not need to be paid back; forbearance does. An important concern of policymakers was that, when forbearance ended, borrowers would have to quickly repay the arrears they had accumulated. The institutional evidence and the data suggest that this was not a major problem. On the institutional side, the main government lending programs did not demand immediate repayment of arrears but rather offered a waterfall of options. First, lenders offered to convert arrears into a non-interest-bearing second lien due on termination of the loan. This payment deferral option meant that the borrower could resume making monthly payments *as if* they had not missed any payments, meaning a restoration of the pre-COVID status quo, at least as far as cash flow was concerned. If the borrower had suffered a permanent reduction in income due to COVID, lenders could then offer a modification of the existing loan in addition to payment deferral.

The data show that, for the most part, the waterfall worked as intended. Figure 2 uses data from the MBA Weekly Forbearance Survey (MBA, to track the evolution of all loans that entered forbearance, including loans that exited and then reentered forbearance. According to the MBA, there were about 5 million entries into forbearance. As of October 2021, about a million loans remained in forbearance. What happened to the rest? About 700,000 loans had no plan, meaning that forbearance expired without the borrower making contact with the servicer to explore options. Although we cannot be sure, we think most of those loans subsequently reentered forbearance because data from Black Knight show that, starting in the fall of 2020, most entries into forbearance were, in fact, reentries. Another large exit category, especially in 2020, was borrowers who requested forbearance but then never actually used it and exited with no missed payments. In addition, a significant number of borrowers had missed only a small number of payments and were reinstated after repaying those missed payments. But, overall, most exits involved either a payment deferral or a modification, or a combination of the two.

Forbearance and Credit Scores

The CARES Act of 2020 includes language that protects borrowers who choose to use forbearance from experiencing a negative impact on their credit scores. Specifically, the legislation says that, if a borrower is in forbearance, the lender must report the loan as current to the credit bureaus (CARES Act 2020, sec. 4021). This stipulation dramatically affected the credit scores of borrowers who missed mortgage payments during the pandemic.

In February 2010, about 90 percent of past-due borrowers of FHA and GSE loans had credit scores (from Vantage 3.0) below 622, whereas the 90th percentile for past-due borrowers in February 2021 was 788, a super-prime score. The majority of the latter borrowers began missing payments in April and May 2020 and used forbearance under the CARES Act, which enabled them to avoid the serious damage to their scores that would normally accompany missing months of mortgage payments.

This difference in the distribution of credit scores is also partly a product of stricter underwriting in the aftermath of the GFC. Specifically, the 90th percentile score among borrowers current or up to 30 days past due was 812 in February 2010, as compared to 824 in February 2021. It is also possible that because the pandemic caused a very large swath of borrowers to become unemployed, nonpayment in the pandemic was less concentrated among low-score borrowers than it was in the GFC. Even if not entirely driven by the role of forbearance in protecting distressed borrowers' credit scores, the fact that VantageScores of distressed mortgage borrowers were significantly higher at the end of the pandemic than they were in the last crisis has important implications. It suggests that borrowers exiting forbearance should have more robust access to consumer credit markets and a greater ability to tap their housing wealth. In addition, borrowers who are not able to cure their distress and who are forced to sell will likely face an easier return to future home ownership compared with similarly distressed borrowers a decade ago.

4 Distributional Impacts of Mortgage Policies

We now turn to a discussion of the distributional effects of the policies. In particular, we focus on differences in outcomes by race and ethnicity as well as by household income, household composition, and the growth in county-level unemployment rates. For our analysis of race/ethnicity we use information from HMDA and construct indicators for Black, White, Asian, and Hispanic borrowers. For our income analysis we use HMDA income, which is reported by borrowers when they file their loan applications, along with Census data on metro area income. We then compute an indicator variable for whether a borrower meets the US Department of Housing and Urban Development's definition of either low or moderate income.¹⁰

Mortgage Nonpayment and Forbearance

The top panels of figures 5, 6, and 7 display monthly, unconditional nonpayment rates for federally insured mortgages from January 2019 through the end of our sample in October 2021, broken down by borrower race/ethnicity, whether household income falls in the low or moderate category, and the amount by which unemployment increased in the borrower's county early in the pandemic. We use a 60-plus days past due (DPD) definition of nonpayment (in other words, at least two missed payments), which is common in the mortgage default literature. The figures

¹⁰ HUD's definition of low income corresponds to household income being less than or equal to 50 percent of area median income, and its definition of moderate income corresponds to income that is greater than 50 percent but less than 80 percent of area median income.

correspond to the stock of mortgage nonpayments (or the share of active mortgages that are at least 60 DPD in each month).

The differences across race/ethnicity in the pattern of nonpayment hazards is striking. Nonpayment rates spike for all borrowers beginning in May 2020 with the onset of the pandemic, but the increase is significantly larger for borrowers of color.¹¹ Black borrowers experienced the most distress; their nonpayment rates rose from around 3 percent just before the pandemic to 13 percent in mid-2020. Hispanic and Asian borrowers experienced a similarly sharp rise in nonpayments, from 1 percent to 11 percent and from 1 percent to 8 percent, respectively. White borrowers experienced less distress; their nonpayment rates rose from 1 percent to 6 percent.

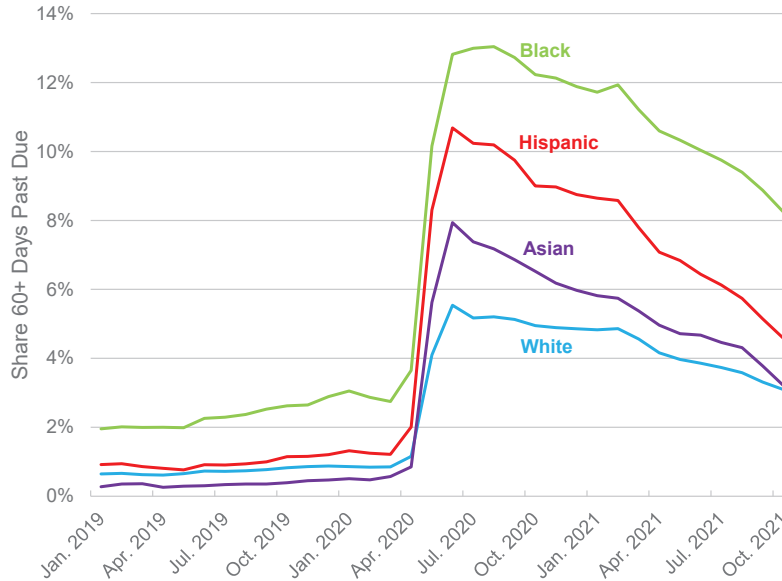
The time-series pattern of the stock of nonpayment rates in panel A of figure 5 suggests that mortgage distress was concentrated almost entirely within a two- to three-month period at the beginning of the pandemic. Indeed, new mortgage nonpayments for all borrowers spiked in May 2020, remained elevated in June, but they quickly declined in July. New nonpayments flattened afterward at levels that were slightly more elevated relative to their prepandemic levels. The fact that we see the stock of 60 DPDs stay extremely elevated through the end of the sample, despite the flows into nonpayment receding in the summer of 2020, suggests that many borrowers who experienced distress at the beginning of the pandemic were unable to quickly resolve their financial difficulties. We show below that most of those borrowers obtained relief with the CARES Act forbearance policy and that many remained in forbearance through the end of our sample.

Figures 6 and 7 (Panel A) clearly show that minority borrowers and lower-income borrowers experienced significantly higher levels of mortgage distress compared with White borrowers and higher-income borrowers, respectively, during the pandemic. This observation is not surprising, given the fact that job loss was significantly higher for minority households and that sectors characterized by lower-paying jobs like leisure and hospitality were affected more by the lockdown and social distancing measures implemented in response to the pandemic. Panel A in figure 8 shows that counties with top quartile increases in the unemployment rate between February and April 2020 experienced significantly higher nonpayment rates than counties in the bottom quartile during the same period, which is consistent with the idea that employment losses from the pandemic created a lot of financial distress for some mortgage holders—despite expanded unemployment insurance benefits. We now turn to an analysis of forbearance, the primary policy response to the distress in the market, to see if it had a differential impact across racial/ethnic lines or across borrowers with low versus high incomes.

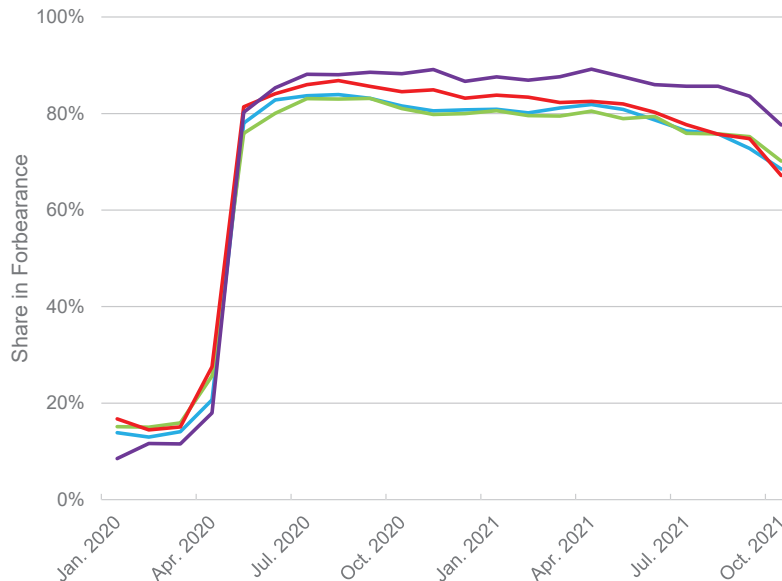
The bottom panels of figures 5, 6, and 7 plot forbearance rates by race/ethnicity, by income group, and by unemployment growth groups. Importantly, the figures show forbearance rates *conditional* on being behind on payments so that the large differences in nonpayment rates do not influence the forbearance differences. Conditional on being past due on payments,

¹¹ The spike in 60 DPD in May 2020 corresponds to borrowers missing their first payment at the beginning of April and their second payment in May.

Figure 5: Households Past Due on Mortgage Payments and in Forbearance, by Race/Ethnicity
Panel A: More Than 60 Days Past Due



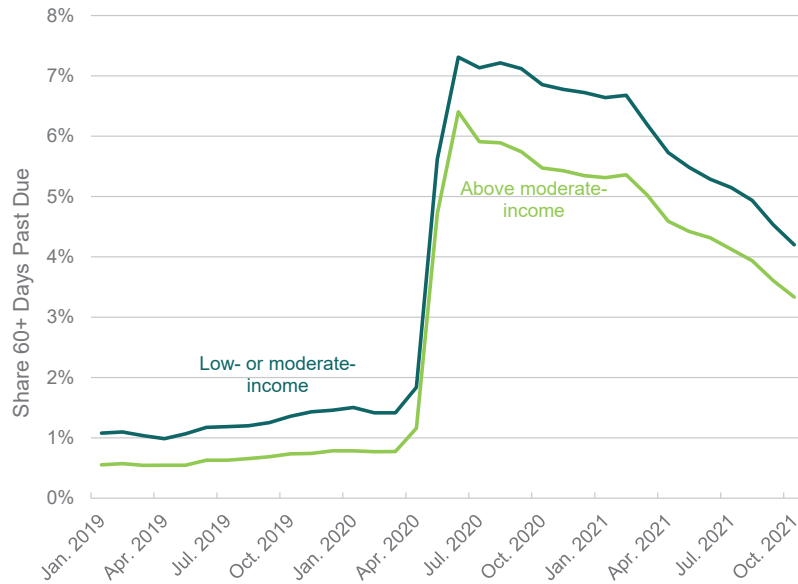
Panel B: In Forbearance Given 60 Days or More Past Due



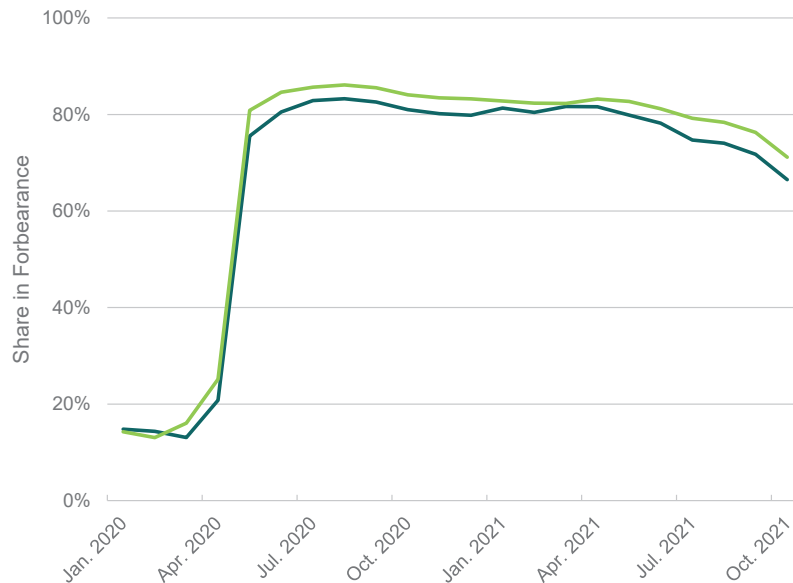
Source: Home Mortgage Disclosure Act (HMDA) data; Equifax Credit Risk Insight Servicing-McDash data; Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP) data; authors' calculations. Borrower race and ethnicity are captured in HMDA. Forbearance indicators are derived using tradeline-level data from the CCP.

Figure 6: Households Past Due on Mortgage Payments and in Forbearance, by Income

Panel A: More than 60 Days Past Due



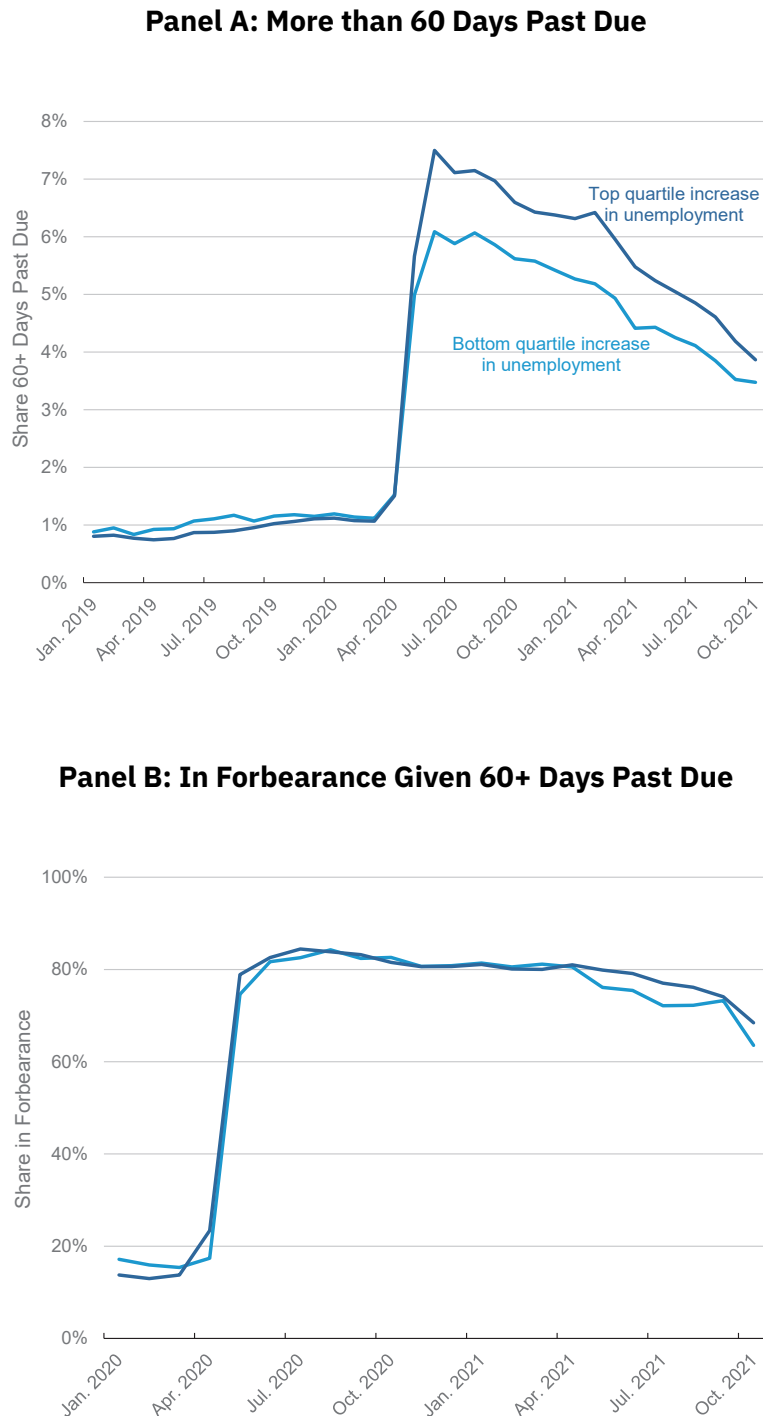
Panel B: In Forbearance Given 60+ Days Past Due



Note: Borrowers are classified as low- or moderate-income (LMI) if their real income at origination (measured in 2021 dollars) is less than 80 percent of the 2021 median family income in their metro area (or state, for borrowers outside metro areas).

Source: Home Mortgage Disclosure Act (HMDA) data; Equifax Credit Risk Insight Servicing-McDash data; Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP) data; authors' calculations. Borrower income is captured in HMDA data.

Figure 7: Households Past Due on Mortgage Payments and in Forbearance, by Unemployment



Note: Borrowers are classified as top-quartile if their county’s unemployment rate increased by more than the 75th percentile of counties nationwide (10.6 percentage points) between February and April 2020. Bottom-quartile borrowers resided in counties with unemployment rates that increased by less than 4.9 percentage points during this period. Nonpayment indicators are derived using McDash data; forbearance is derived from Equifax data. Source: Home Mortgage Disclosure Act (HMDA) data; Equifax Credit Risk Insight Servicing-McDash data; Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP) data; Bureau of Labor Statistics; author's calculations

similarly high fractions of minority and white borrowers were enrolled in forbearance plans. For example, as of August 2020 84 percent of all White borrowers who were 30-plus DPD were enrolled in forbearance, compared with 88 percent of Asian borrowers, 83 percent of Black borrowers, and 87 percent of Hispanic borrowers. We also see similar forbearance enrollment rates across the income distribution: borrowers with low or moderate incomes were only slightly less likely to enroll in forbearance compared to higher-income borrowers. Finally, figure 7 shows that conditional forbearance rates are nearly identical across counties with top quartile versus bottom quartile increases in unemployment rates. Thus, although minority and low-income borrowers were much more likely to miss payments during the pandemic relative to White and high-income borrowers, those who missed payments were approximately equally as likely to take advantage of payment relief offered through forbearance.

Refinancing

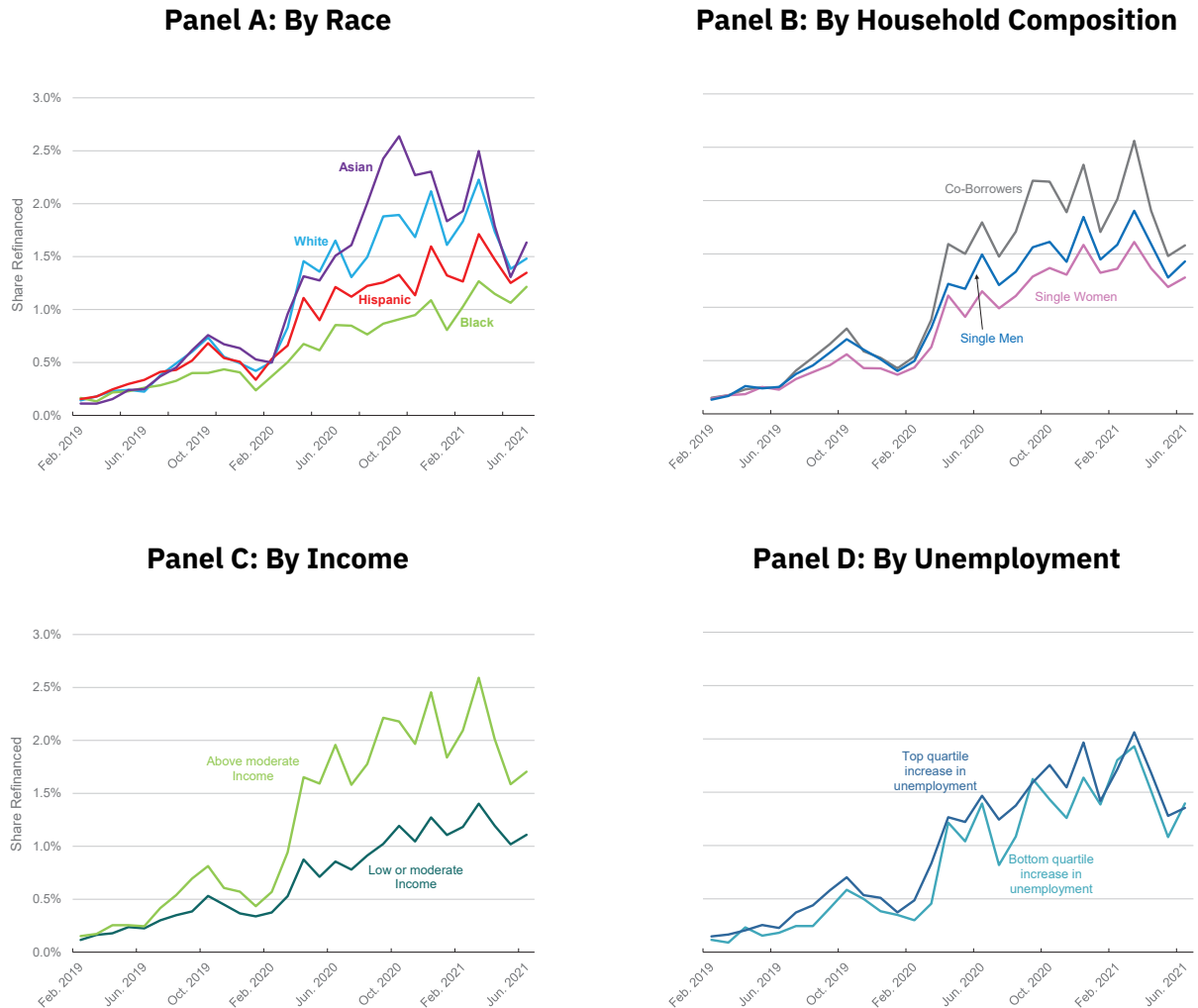
Using prepandemic data, [Gerardi, Willen and Zhang \(2020\)](#) showed that racial disparities in refinance behavior are significantly exacerbated during periods of low interest rates and high refinance volume. Since the pandemic was characterized by both historically low mortgage rates and significant refinance activity, we might expect to find similarly large disparities during this period.

Figure 8 (panel A) shows the evolution of refinance propensities during the pandemic by plotting monthly, unconditional refinance rates for different racial and ethnic groups. Refinance rates were similar across all groups in the first couple of months of 2020, before the onset of the pandemic. Beginning in March 2020, however, a significant gap between White or Asian borrowers and Black or Hispanic borrowers emerged. Asian borrowers had the highest refinance propensities during the pandemic, while Black borrowers were the least likely to refinance. Notably, the racial gaps in refinance activity persisted through the entire pandemic. Panel B in the figure displays refinance rates for loans taken out by single male borrowers, single female borrowers, and multiple borrowers. Panel C shows refinance propensities for low- and moderate-income borrowers and higher-income borrowers. Finally, panel D shows refinance hazards for loans originated in counties with top and bottom quartile increases in the unemployment rate during the pandemic.

Refinance rates were significantly higher for loans with multiple borrowers during the pandemic period compared to loans with only a single borrower. Among single borrowers, males were slightly more likely to refinance than females. Although the difference in refinance rates between higher-income and low-to-moderate income borrowers was small in the prepandemic period, higher-income borrowers were approximately twice as likely to refinance during the pandemic. [Agarwal et al. \(2020\)](#) also find significantly lower refinancing activity among low-income borrowers, and we find them less likely to apply. Differences in refinance propensities among loans in high-unemployment and low-unemployment growth counties were small.

While Figure 8 shows unconditional refinance rates, the size of the disparities is not materially affected if refinance rates are conditioned on observable borrower and loan

Figure 8: Share of Borrowers Who Refinanced Their Mortgage, February 2019–June 2021



Note: Panel C: Borrowers are classified as low- or moderate-income (LMI) if their real income at origination (measured in 2021 dollars in HMDA data) is less than the 2021 median family income in their metro area (or state, for borrowers outside metro areas). Panel D: Borrowers are classified as top quartile if their county’s unemployment rate increased by more than the 75th percentile of counties nationwide (10.6 percentage points) between February and April 2020. Bottom-quartile borrowers resided in counties with unemployment rates that increased by less than 4.9 percentage points during this period.

Source: Home Mortgage Disclosure Act (HMDA) data; Equifax Credit Risk Insight Servicing-McDash (CRISM) data; Bureau of Labor Statistics; authors’ calculations. Borrower race, ethnicity, gender, and income are captured in HMDA. Refinance indicators are derived using data from CRISM.

characteristics like credit scores, whether the borrower has been current on mortgage payments, loan-to-value ratios, the incentive to refinance (how much the borrower’s rate differs from what is available in the market), and geographic location.¹² That is, differences in loan or borrower characteristics included in our data do not explain the difference in refinance rates by group. An important factor that we cannot observe is how a borrower’s income and employment status change over time. Black and Hispanic households lost their jobs at higher rates during the pandemic, which likely contributed to the disparities in their ability to refinance.

The racial disparities in refinance activity documented in figure 8 are significant and lead to large differences in how the total benefits from the lower interest rate environment are shared. Those total gains are a function of the probability that a borrower refinances and how much borrowers who do refinance save. [Gerardi, Lambie-Hanson and Willen \(2021\)](#) find that the mean monthly payment reductions for borrowers who refinanced were generally similar across groups. White borrowers generally had lower existing interest rates, which lowered their gain from refinancing, but they also had bigger mortgages, which worked in the opposite direction. Annualizing the savings and multiplying them by estimates of the number of mortgages held by each racial and ethnic group, we estimate that US homeowners who refinanced through October 2020 will save about \$5 billion a year until they refinance again or sell their homes. We estimate that Black homeowners account for only \$198 million, or 3.7 percent, of the savings despite holding roughly 5.9 percent of balances in our mortgage sample. In contrast, White borrowers account for approximately 71.1 percent of the savings (\$3.8 billion), which is a slightly larger percentage of their sample share (69 percent).

5 Lessons Learned

Mortgage borrowers, like all Americans, experienced significant turmoil during the COVID-19 pandemic. According to the MBA, in the second quarter of 2020, the percentage of mortgage borrowers who were past due peaked at 6.7 percent. That rate fell to 3.5 percent of mortgage borrowers in the fourth quarter of 2021, almost a 50 percent reduction in six quarters. To put that in perspective, after the GFC, the rate peaked at 10.2 percent in the first quarter of 2010 and took until the third quarter of 2014 for the past due rate to fall by 50 percent, roughly three times as long. What role did policy play in those outcomes? What went right and what went wrong? How important was it that the nature of the downturns was so different? Does success in this episode provide us with a road map, or even useful insights, for the future? Can we say that the policies targeting homeowners had been a success? We now review the three policy levers—*forbearance, interest rate reductions and income support*—in turn.

Forbearance was especially effective due to its timeliness and the ease with which

¹² For more details about how controlling for observables affects refinance disparities, see [Gerardi, Lambie-Hanson and Willen \(2021\)](#). This finding is contrary to those of [Gerardi, Willen and Zhang \(2020\)](#), who show that differences in observable characteristics can account for approximately 80 percent of the unconditional refinance gap between Black and White borrowers.

borrowers were able to take advantage of it. Unlike the Home Affordable Modification Program (HAMP), the primary mortgage market policy enacted in the aftermath of the GFC, enrolling in forbearance required zero documentation on the part of borrowers and only minimal contact with mortgage servicers. Borrowers simply had to contact their servicer and attest to experiencing financial hardship due to the pandemic. Thus, whereas the HAMP program took about a year to really get up and running at full capacity, forbearance was heavily used almost immediately.

Furthermore, 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 and thus does not significantly lower the net present value (NPV) of payment obligations. 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. Using a survey of more than 1,000 homeowners, [Lambie-Hanson, Vickery and Akana \(2021\)](#) find that borrowers who used forbearance overwhelmingly had personally suffered a job loss or income disruption during the pandemic. They also show that forbearance was concentrated among borrowers who were employed prepandemic in industries hard hit by COVID-19, including leisure, hospitality, arts, and entertainment. An additional piece of evidence that forbearance targeted borrowers in need is that as financial distress waned over the course of the pandemic, so did forbearance usage. Forbearance was used most intensively in the second quarter of 2020 when labor income losses were most significant.

Incentive compatibility meant that forbearance contrasts favorably with the concessionary loan modifications used to assist borrowers during the GFC. The most common loan modifications reduced interest rates, thereby significantly lowering the NPV of payment obligations, making them appealing to distressed borrowers as well as nondistressed borrowers. Studies such as [Mayer et al. \(2014\)](#) have documented evidence that this moral hazard was a nontrivial issue for some of the modification programs rolled out in the aftermath of the GFC. To avoid modifying loans for borrowers not in need, lenders demanded extensive documentation of hardship and, even then, foreclosed on many borrowers even when it was more costly to foreclose than to modify.¹³ In addition, the complexity of dealing with these information problems meant that the flagship HAMP did not really start to make a difference until several years after policymakers identified a foreclosure problem in the United States. As our data show, forbearance was helping borrowers at the beginning of April, days after Congress passed the CARES Act and before even expanded unemployment insurance, which did not start to flow in earnest until May.

Supporting these distressed borrowers also had spillover effects on their communities. Normally, increases in area unemployment and corresponding negative income shocks would

¹³ See [Adelino, Gerardi and Willen \(2013\)](#) for a discussion of why information asymmetries lead rational lenders to foreclose rather than modify loans even when the loss from foreclosure exceeds the reduced NPV from modification.

lead to more houses being put up for sale, which pushes down prices. But [Anenberg and Scharlemann \(2021\)](#) show that forbearance offset pandemic-related increases in unemployment, decreasing the number of new for-sale listings and propping up county-level home prices.

As a result, one might conclude that policymakers should have turned to forbearance in 2008 and should do so in any future economic downturn. However, three important points should be considered before settling on such a conclusion. First, forbearance is not costless. Put simply, lenders are effectively extending interest-free loans to borrowers, which is costly even in a low interest rate environment.

Second, although the government insures investors against any missed payments of interest and principal on MBS, there is a lag between missed payments by borrowers and insurance payments by the government. Loan servicers are contractually obligated to cover this gap and can find themselves in a liquidity squeeze.¹⁴ Indeed, a sufficiently high rate of forbearance could bankrupt mortgage servicers.¹⁵ To address this risk, federal agencies changed their reimbursement policies in March and April 2020. Fannie Mae lowered the number of months that servicers were responsible for covering missed payments from twelve to four. Ginnie Mae set up the Pass-Through Assistance Program (PTAP), an emergency credit facility that servicers could access to fund payments. In the end, lower-than-expected forbearance take-up and an increase in highly profitable refinance activity meant that servicers had ample liquidity throughout the pandemic. However, if policymakers consider a broad-based forbearance policy in response to a future crisis, servicer liquidity risk could resurface as a first-order concern. The third point to keep in mind before concluding that forbearance is a panacea is that certain features of the pandemic likely made a policy of broad-based forbearance particularly advantageous. First, the extremely rapid jobs recovery in the late spring and summer of 2020 meant that many distressed borrowers who had lost their jobs needed only a few months of assistance. Most recessions, especially the Great Recession, are characterized by much longer labor market recoveries. Second, most mortgages were federally insured, making risks to private investors minimal. At the start of the pandemic, 62 percent of mortgages by value were held in Fannie Mae, Freddie Mac or Ginnie Mae MBS, meaning that the US Treasury effectively guaranteed repayment of principal and interest. By contrast, before the GFC, the comparable figure was 43 percent.

Finally, perhaps the most important reason forbearance was so successful was the strong

¹⁴ Before the pandemic period, Fannie Mae required servicers to forward principal and interest payments for twelve months for loans in forbearance, while Freddie Mac required four months of advances before reimbursement could occur. For Ginnie Mae loans, servicers were expected to forward mortgage-related payments for the entire life of the loan.

¹⁵ This was especially true for the nonbank mortgage companies (NBMC), which are primarily funded by short-term wholesale debt, exposing them to greater liquidity and run risk than banks. NBMCs accounted for the majority of loan originations (approximately 70 percent) in the prepandemic period.

prepandemic housing market and, specifically, the robust house price growth that most areas of the country experienced in the years before and, more importantly, during the pandemic. Among borrowers in our sample whose loans were still active in February 2020, the median house price appreciation in their area over the next year was 9.8 percent, and the average was 10.2 percent. And house price growth was widespread, as even the 10th percentile of the growth distribution in our sample experienced more than 5 percent appreciation during the pandemic. Strong house price growth before and during the pandemic translated into significant amounts of accumulated housing wealth for borrowers. We estimate that the median borrower in our sample had an equity position of more than 45 percent as of February 2021. More importantly, unlike during the GFC and Great Recession, negative equity was not an issue. Even borrowers at the 5th percentile of the equity distribution in our sample had accumulated significant wealth in their homes. This wealth accumulation meant that most borrowers were not at risk of foreclosure when exiting forbearance, as they had the option to sell their properties if they were still unable to resume making mortgage payments. In contrast, during the GFC, negative equity was a huge problem, and temporary payment forgiveness was not as effective in preventing large numbers of defaults and foreclosures. As documented in [Adelino, Gerardi and Willen \(2013\)](#), most loan modifications granted by servicers in the lead-up to the GFC mirrored forbearance in that they did not change any of the loan terms but simply involved the capitalization of arrears into the balance of the loan. Before the GFC, these modifications were often successful in giving borrowers time to cure their delinquencies, but in the aftermath of the GFC, nonconcessionary modifications proved to be ineffective as household distress resulting from employment and income loss became more prevalent and persistent.

Despite these caveats, we believe that forbearance could be a useful tool in mitigating mortgage market distress in a future crisis. Many of the factors that made forbearance such an effective policy in the pandemic period are likely to be present in the next crisis. For example, the share of mortgages insured by the government has gone up since 2020, reaching 67 percent in the second quarter of 2021. The severe national house price decline that resulted in widespread negative equity was really a phenomenon unique to the GFC. In most postwar recessions, house prices did not significantly decline at the national level, and thus a future recession accompanied by deep, broad-based negative equity is unlikely.

Turning to the Federal Reserve's monetary policy and large-scale MBS purchases, the resulting reduction in mortgage rates and boom in refinances did serve to reduce household financial distress. However, as a method for offsetting the shock of the pandemic, its effectiveness was limited. Low mortgage rates were slow to diffuse through the economy, and intermediaries captured a significant portion of the benefits, at least initially ([Fuster et al. \(2021\)](#)). Figure 4 shows that the benefits of lower rates went into effect gradually over the course of six quarters. Several reasons are behind this lag. The first reason, as discussed above, is that lenders have limited capacity for processing refinances, a problem aggravated by the pandemic. Lenders rationed by raising prices, as panel B in figure 4 shows. Another is that refinances take 45 days or more even in normal times, and higher volumes, combined with pandemic-related constraints on production, elongated timelines even more. Finally, another reason for the slow

take-up of low rates is borrower inattention, as documented by [Andersen et al. \(2020\)](#).

As mentioned above, enrollment in a forbearance plan disqualified a borrower from refinancing into a new loan, and most lenders required a borrower who had exited forbearance to make three consecutive payments before approving a refinance. The refinancing process is also quite costly, with high fees and taxes, limiting take-up. In addition, as we showed in section 4, Black and Hispanic borrowers were significantly less likely to benefit from low interest rates.

There are a few possible ways to ensure that lower mortgage rates reach more borrowers and do so more quickly. One possibility is to increase the prevalence of streamlined refinance programs. [Gerardi, Loewenstein and Willen \(2020\)](#) argued that a streamlined refinance program that did not require documentation of employment or income during the early stages of the pandemic would have provided necessary payment relief to many borrowers who had experienced financial hardship. Another possibility would be to expand the use of adjustable-rate mortgages or other types of mortgage products that automatically pass interest rate declines through to borrowers. Borrowers with adjustable-rate mortgages, more prevalent outside the United States, would have seen more or less immediate payment relief in April 2020 rather than having to initiate a costly and time-consuming refinance. One promising product, in our view, is the ratchet mortgage, which combines the benefits of both fixed-rate loans and adjustable-rate mortgages. The ratchet mortgage allows downward adjustments in the mortgage rate but does not allow increases. This type of product provides lower costs to borrowers over the life of the loan and, in exchange for a potentially higher initial rate, eliminates the subsidization of those who refinance more frequently by those who refinance less frequently.

Finally, the income support programs during the pandemic clearly played a large role in alleviating financial distress, especially the expansion of the UI benefits program. As detailed in chapter 2 of [Edelberg, Sheiner and Wessel \(2022\)](#), UI expansion fully restored income for many unemployed individuals and in some cases more than restored it. [Dettling and Lambie-Hanson \(2021\)](#) construct a measure of income support (such as UI, stimulus checks, and PPP loans) relative to prepandemic incomes in each state and county. They document significant variation in the extent to which these federal programs provided under the CARES Act replaced lost income, and that geographic areas with more generous income support experienced better mortgage outcomes. Controlling for unemployment, the share of mortgages that are government-backed, COVID-19 cases, and social distancing policies, they find that a one-standard-deviation increase in the index of CARES Act income support generosity is associated with rates of mortgage nonpayment (delinquency and/or forbearance rates) that were about 2 percentage points lower, or roughly a 25 percent reduction.

While income support programs are broad based and can help to alleviate distress in both the rental and mortgage markets, they do have a few drawbacks. One issue is cost. They are much more expensive to taxpayers than forbearance or interest rate reductions. In addition, because income support is typically provided as a gift and not a loan, it suffers from much more severe moral hazard problems. People who have lost a job might have less incentive to seek a new job if they are receiving generous unemployment benefits, which are never repaid. However,

a borrower has less incentive to voluntarily skip mortgage payments through forbearance, since that debt must ultimately be repaid. As a result, it seems that few borrowers misrepresented themselves as negatively affected by COVID so they could gain forbearance. In contrast, fraud was a major concern for both the PPP and expanded UI benefits programs. Finally, although income support programs provide help to households much faster than rate cuts, they are not as timely as forbearance. In some states (for example, Florida) it took several weeks for UI benefits to reach newly unemployed individuals at the start of the pandemic.¹⁶

Our intention in writing this article is to provoke discussion and debate on the merits and drawbacks of recent policies enacted to mitigate distress during the COVID-19 pandemic in the US mortgage market. It is our hope that future research using better data will add even greater perspective on what worked, and what didn't, during this tumultuous period.

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