Federal Reserve Bank of Philadelphia

Consumer Finance Institute Special Report

Residential Mortgage Refinancing During the COVID-19 Pandemic

by Lauren Lambie-Hanson, September 2020

Abstract

Historically low interest rates have spurred a refinance wave among American homeowners, particularly those with higher credit scores and greater home equity. However, millions of borrowers may still benefit from refinancing, and industry forecasts suggest interest rates will remain low over the next 12 months. This special report provides a survey of recent activity in the market for mortgage refinances and estimates the number of refinance candidates remaining to be over 17 million, based on the most recent data available. The report describes indicators of borrower interest in refinancing and cautions that increased mortgage forbearance and nonpayment rates during the pandemic may preclude many borrowers from partaking in today's low interest rates, which have the potential to lower monthly mortgage payments at a time when such savings would be particularly beneficial to households.

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In 2019, the Federal Reserve cut the federal funds rate three times, followed by two emergency rate cuts in 2020 in response to the COVID-19–related economic crisis, leaving the federal funds rate near zero. These movements have resulted in a significant reduction in the 30-year, fixed-rate mortgage interest rate.[1] According to Freddie Mac's Primary Mortgage Market Survey, in mid-July, average weekly mortgage rates fell below 3 percent for the first time in recorded history (Freddie Mac, 2020). Over the last several months, many active mortgage borrowers have become candidates for refinancing to lower their interest rates.

This CFI Special Report surveys recent evidence from the mortgage market on refinance interest rate locks and originations, describing the uptick in volume and the characteristics of loans locked during the pandemic. Despite the significant increase in refinancing, many prime mortgage borrowers in the U.S. could gain financially from refinancing and appear to be eligible to refinance, based on observable underwriting characteristics. Specifically, as of July 2020, when the interest rate averaged 3.02 percent, about 17.3 million loans appeared to be good candidates for refinancing, or about 34 percent of active mortgages. This is the greatest number of refinance candidates in the last 18 years.

In most of August and the beginning of September, rates continued to fall, further expanding the pool of refinance candidates. For the week of September 10, Freddie Mac reported an average interest rate of 2.86 percent, the lowest observed rate since the beginning of the data series in 1971. It is conceivable that mortgage rates could fall even further in response to pandemic-related pressures and accommodative monetary policy. If mortgage rates were to fall to 2.8 percent, for example, 22 million borrowers in the July snapshot would stand to gain from refinancing, or 43 percent of all mortgage borrowers. However, interest rates fluctuated in late August, following the Federal Housing Finance Agency (FHFA)'s announced 50 basis point increase in loan-level pricing adjustments for refinance mortgages. This change was initially set to take effect for loans delivered to Fannie Mae and Freddie Mac on September 1 or later, and early evidence shows a spike in refinance interest rates, particularly relative to purchase rates, as

[1] The Federal Reserve System also directly influenced mortgage interest rates in two ways. In March, the Fed announced it "will purchase Treasury securities and agency mortgage-backed securities in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions and the economy," (Federal Reserve Board of Governors, 2020a). Indeed, between March and August, the Fed purchased about $1 trillion in agency mortgage-backed securities, and in May, the Fed began buying agency MBS with coupons of 2.0 percent (Federal Reserve Bank of New York, 2020), providing incentives for lenders to make loans with lower interest rates.

a portion of the fee is passed along to borrowers. Under usual conditions, interest rates for conventional purchase mortgages are very similar to rates for rate- or term-conventional refinances; however, since the “adverse market fee” was announced, a wedge between the two rates quickly emerged. On August 25, the FHFA announced it would delay the implementation of the fee until December 1, and shortly thereafter, the wedge between refi and purchase loans shrank.

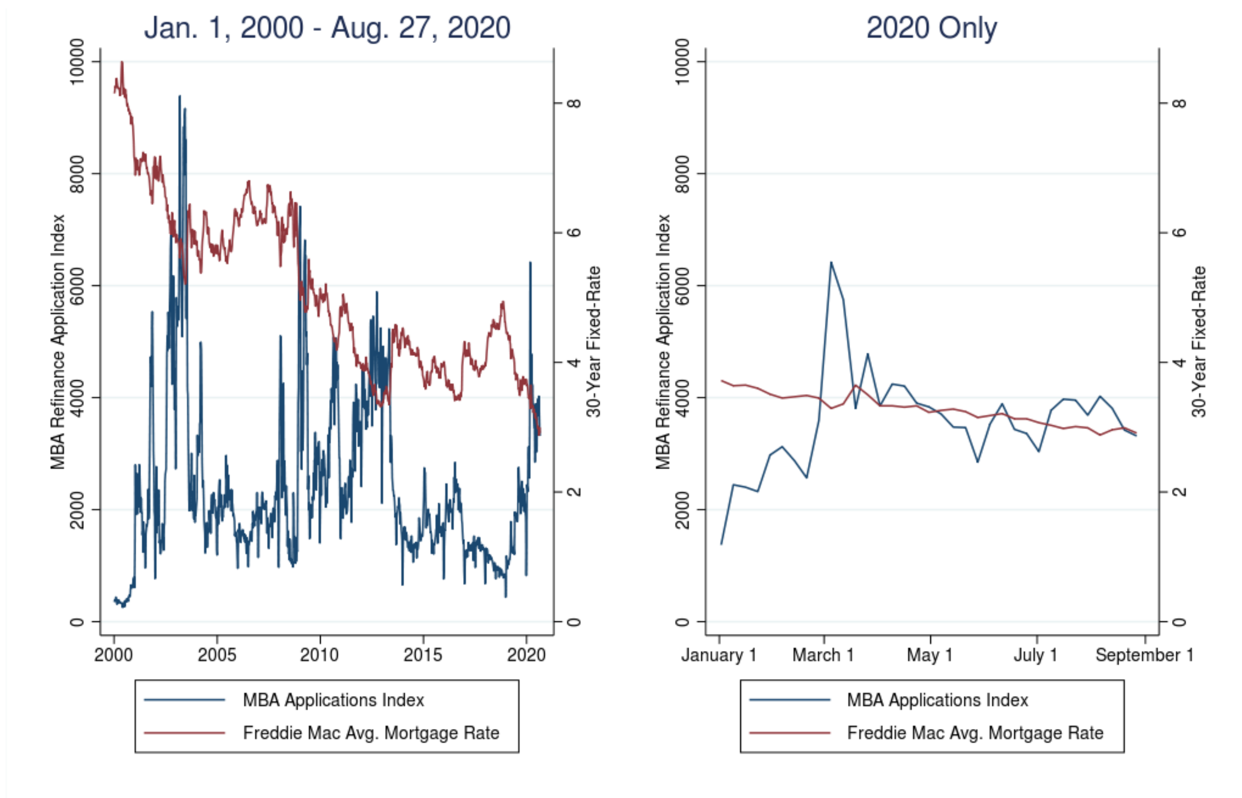
In the end, not all borrowers who are in the money to refinance will, even if they appear to be qualified, based on observable underwriting characteristics. Borrower interest in refinancing — measured through credit report inquiries — has ticked up during the pandemic but still remains lower than in previous periods of falling interest rates. And lenders appear to be reducing mortgage supply — the July 2020 Federal Reserve Board of Governors’ Senior Loan Officer Opinion Survey (SLOOS) on Bank Lending Practices found that 55 percent of banks had tightened mortgage credit standards in the previous three months.[2] Furthermore, given widespread job losses, furloughs, and reductions in workers’ hours, many borrowers who want to refinance will not be able to because of standard income and employment underwriting requirements. In other words, refinancing may be out of reach for many households that need the monthly savings the most.

Falling Rates Generate Surging Refinance Applications, Especially Among Borrowers with Excellent Credit

Mortgage interest rates most recently began falling in November 2018, causing refinance applications to surge, according to the Mortgage Bankers Association (MBA) refinance application index (Figure 1). However, the continued reduction in rates that accompanied the onset of the pandemic resulted in a particularly large refi application surge in March 2020, when the MBA refinance application index reached its highest point since 2009. The spike was short lived, but the index remains more than twice as high as its typical level over the past five years.

[2] See Federal Reserve Board of Governors (2020b). These statistics refer specifically to conventional, conforming loans that are eligible for purchase by Fannie Mae and Freddie Mac.

Figure 1. Refinance Application Volume and 30-Year Mortgage Interest Rates



Data sources: Mortgage Bankers Association Weekly Application Survey (Refinance Index, not seasonally adjusted) and Freddie Mac Primary Mortgage Market Survey interest rate data on 30-year fixed-rate mortgages

It is a known feature of the mortgage market that when interest rates drop, a greater percentage of the borrowers who refinance have higher credit quality as compared with periods when rates are not falling (Amromin, Bhutta, and Keys, 2020). This perhaps signals that borrowers with higher credit scores (many of whom have more experience refinancing) may be paying greater attention to interest rates (Agarwal, Rosen, and Yao, 2016). Indeed, as shown in Figure 2, not long after rates began dropping in late 2018, the percentage of borrowers with higher credit scores locking rates began to decline.[3]

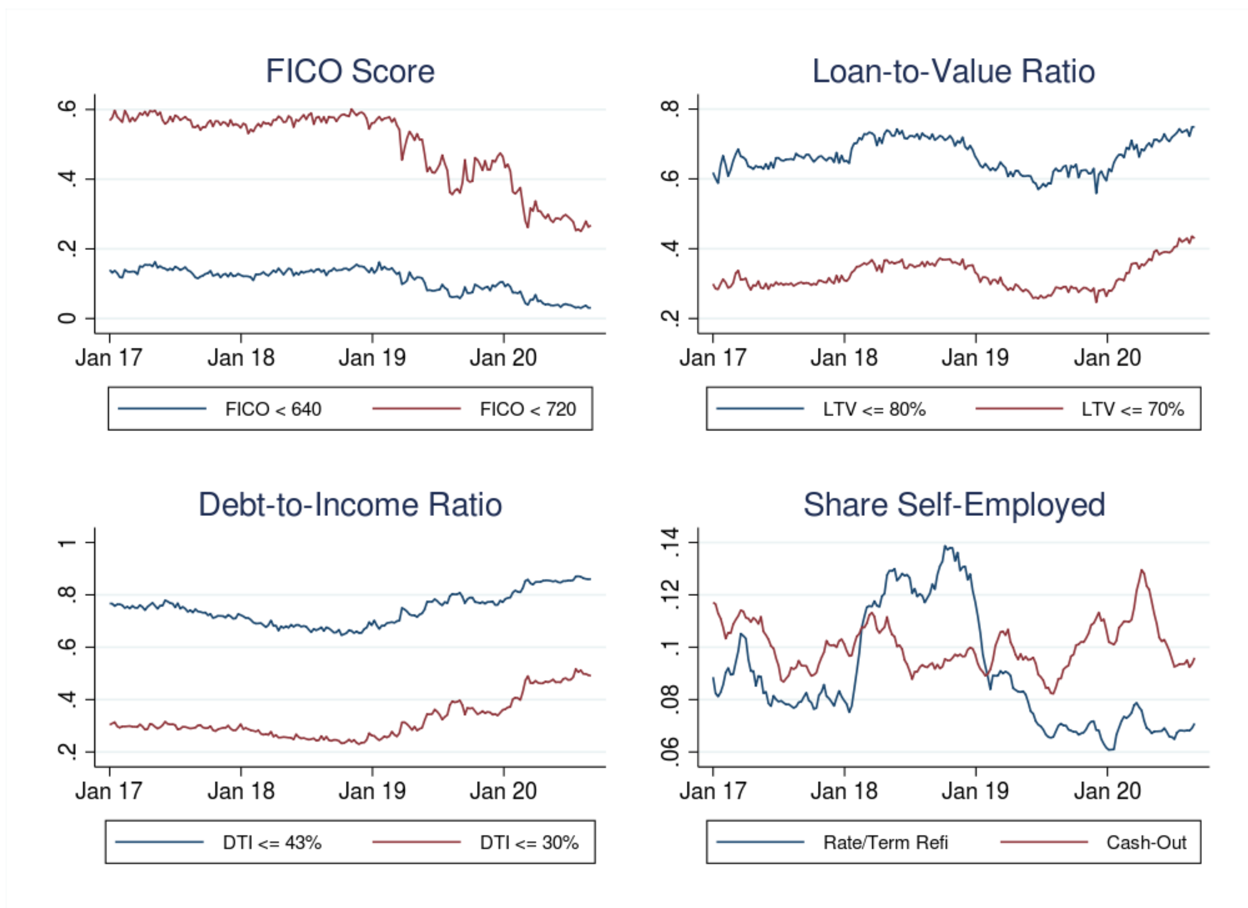
The percentage of borrowers with less-than-prime credit (here measured as having a FICO score below 720) has fallen dramatically during the pandemic. In late July and early August 2020, only 25 percent of borrowers who locked rates to refinance had FICO scores below

[3] This analysis uses data from Optimal Blue on mortgage interest rate locks. Optimal Blue data (as referenced throughout) is aggregated, anonymized mortgage market/rates data that does not contain lender or customer identities or complete rate sheets. Optimal Blue estimates that about one-third of U.S. mortgage locks are included in the data.

720 (down from nearly 60 percent in January 2017–November 2018), and only 3 percent of borrowers had subprime scores (below 640). Similarly, a much larger share of borrowers in recent months had debt-to-income ratios of 30 percent or less.

Interestingly, however, the percentage of borrowers with low LTVs (below 80 percent or 70 percent) initially fell as rates dropped in late 2019, indicating greater credit risk among refinancers, all else equal. But in 2020, the share of low-LTV borrowers began to increase. As of mid-August, 42 percent of borrowers locking rates to refinance had very low LTVs (less than 70 percent), the highest percentage in over three years. Although this is probably in part driven by increased demand for refinancing coming from borrowers with lower credit risk, as is typical in most refinance waves, the patterns from SLOOS indicate a tightening of credit conditions, suggesting that in this time period, both demand- and supply-side explanations were at work.

Figure 2. Who Is Refinancing? Characteristics of Mortgage Rate Locks, January 2017–August 2020

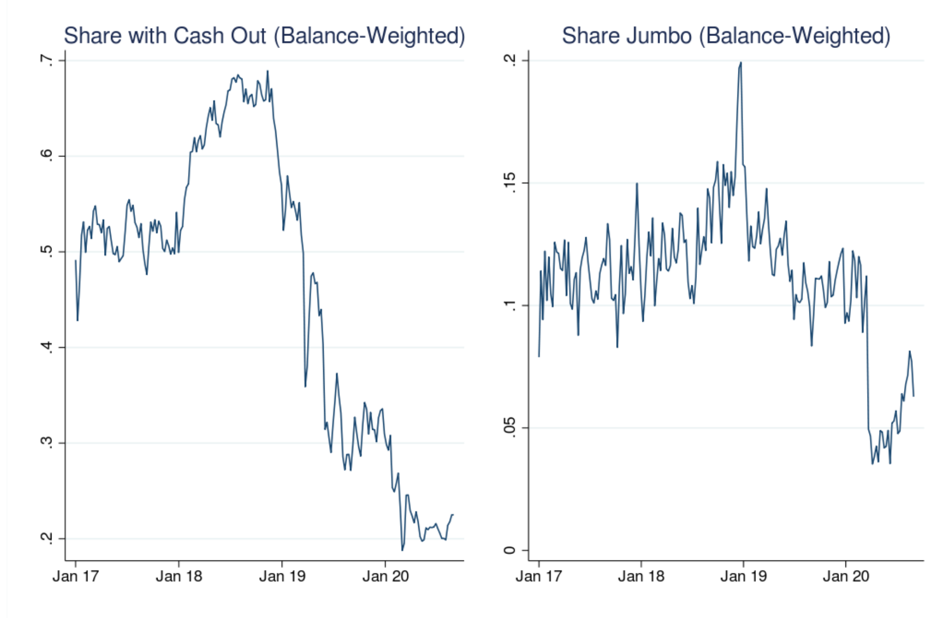


Data source: Optimal Blue data. Note: Charts include conventional conforming, FHA, VA, and jumbo refinance mortgages. Data are displayed weekly.

Borrowers who are self-employed have consistently made up just 6 percent to 8 percent of those locking refinance loans in 2020 to lower their interest rate or change their loan term (Rate/Term Refi in Figure 2's lower right panel). In March, as pandemic-related business shutdowns loomed, an increased share of rate locks for cash-out refinances were by self-employed borrowers (as high as 13 percent). This groups' share of cash-out locks fell dramatically in April onward and now sits at about 9.5 percent.

Intuitively, in times when interest rates are falling, a greater share of refinances are interest rate or term refinances (such as refinancing from a 30-year to a 15-year mortgage), as opposed to refinances in which cash is taken out by the borrower. In recent months, just one in five borrowers who refinanced took cash out. In late April, the FHFA announced that Fannie Mae and Freddie Mac would be allowed to purchase new loans that are in forbearance, but they would not if the loan was a cash-out refinance. Lenders argue that this policy change forced mortgage interest rates for cash-out refinances higher, diminishing demand (Berry, 2020).

Figure 3. Types of Refinance Loans Locked, January 2017–August 2020



Data source: Optimal Blue data. Note: Charts include conventional conforming, FHA, VA, and jumbo refinance mortgages. Data are displayed weekly.

Finally, refinances by jumbo mortgage borrowers declined substantially (and abruptly) since the onset of the pandemic. Wells Fargo, the nation's largest jumbo mortgage lender, announced in April that it would restrict its jumbo refinance lending only to its wealth

management clientele and would not purchase jumbo refinance loans originated by other institutions (Eisen, 2020; McLaughlin, 2020), although in July, Wells Fargo began offering jumbo refinances to its broader base of existing customers (Finkelstein, 2020). Jumbo loans are often originated by or sold to banks, which hold them in portfolio. As a large number of institutions eschewed jumbo loans to make room on their balance sheets for other types of pandemic lending, it became more difficult for borrowers to refinance a jumbo loan, and interest rates in the jumbo market rose and became more volatile (McLaughlin, 2020).

Many Refinance Candidates Remain — But How Many Will Attempt to Refinance?

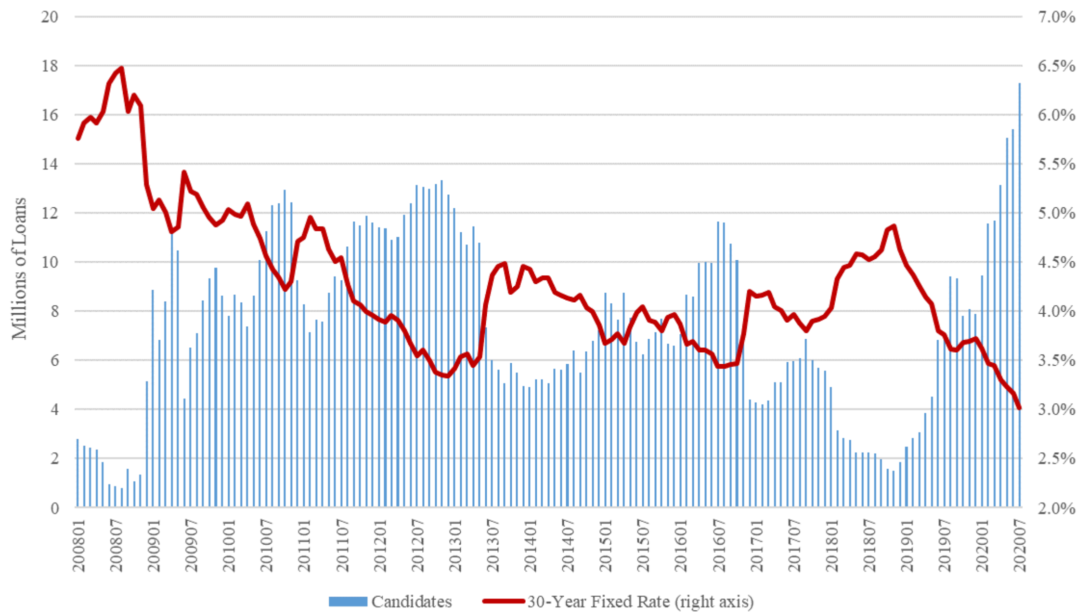
Despite the strong demand for refinancing during the pandemic, many candidates remain — either because they did not refinance yet or because rates have continued to fall and the pool of borrowers eligible to refinance has continued to grow. Borrowers who lock an interest rate do not always go through with the loan. Between June 2019 and February 2020, about 80 percent of refinance locks resulted in an origination. In March, this briefly dropped to about 72 percent but then rebounded to normal levels in April and May (Optimal Blue and Andrew Davidson & Company, 2020).

Estimating the Number of Refinance Candidates

Figure 4 captures the number of active borrowers who appear to be strong candidates for refinancing to the prevailing market rate (as reported by Freddie Mac) over time. We assume the borrower's interest rate must be at least 75 basis points above the market rate for the borrower to have a financial incentive to refinance. We also require that she stand to save at least $100/month in payments and that she must have at least five years left on her loan term. To be considered eligible, she must have a current credit score of at least 720, have at least 20 percent equity in her home (accounting for all liens), and be current on her mortgage payments.

As of July 2020, when the average fixed rate was 3.02 percent, there were 17.3 million active loans that were refi candidates (borrowers who appeared both qualified and in the money), about 34 percent of all active mortgages and the largest number of candidates observed over the past 12 years.

Figure 4. Estimated Refinance Candidates (Millions) by Month, January 2008–July 2020



Data sources: Black Knight McDash data and Freddie Mac Primary Mortgage Market Survey interest rate data.
Note: *Candidates* are borrowers who have FICO scores of at least 720, have at least 20 percent equity, are current on mortgage payments, and could lower their interest rate by 75bps (and payment by at least $100/month) by refinancing to current market rates. See the Technical Appendix for additional details.

If these 17.3 million borrowers all refinanced to the prevailing rate, they would save an aggregate $6.25 billion in mortgage payments each month (not accounting for closing costs). Dividing the potential aggregate payment reductions by the number of candidates yields the average monthly payment reduction per loan, which was $361 in July.[4] It is important to point out that these calculations are based on the assumption that borrowers refinance into either a new 30-year or 15-year mortgage, depending on the term remaining on their existing loan.[5]

The number of refinance candidates is very sensitive to interest rates, as shown in Figure 5. During the week of September 10, average rates fell to 2.86 percent, the lowest observed rate

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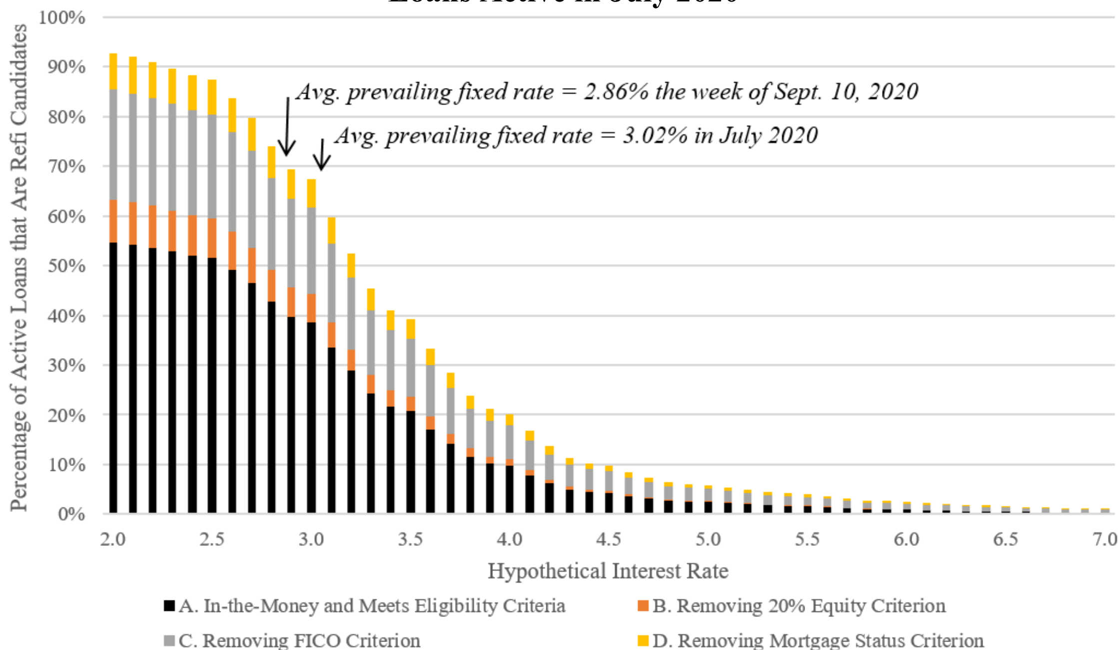
[4] Savings from refinancing can help boost the economy. Wong (2019) estimates a 4 percent increase in consumption (about $2,000 per borrower) in the first year after refinancing. Importantly, this increase in consumption appears to be a general equilibrium effect. Although refinances represent a wealth transfer from mortgage investors to borrowers when borrowers refinance to lower rates, there's no observable reduction in spending by these other parties in the economy (specifically, renters and owners who do not refinance). However, it's unclear how the $2,000 estimate extrapolates to the current crisis. Worse labor market conditions may mean that they spend a greater share of any mortgage payment savings, while quarantines, retail closures, and economic uncertainty may mean they spend less.

[5] In practice, 89 percent of refinances originated in 2020 did have a term of 15 or 30 years, according to the Black Knight McDash data used in this analysis.

since the beginning of Freddie Mac's data series in 1971. At that interest rate, over 21 million borrowers in the July snapshot (about 42 percent of active mortgages) would have been candidates for refinancing. Figure 5 also shows how the share of active mortgage borrowers in July who are refinance candidates increases if we include borrowers with less than 20 percent equity, with a credit score below 720, and who are not current on their mortgage payments.

Figure 5. Refinance Candidates' Sensitivity to Interest Rate Changes, Loans Active in July 2020



Data sources: Black Knight McDash data and Freddie Mac Primary Mortgage Market Survey interest rate data. See the Technical Appendix for calculation details. Category A is restricted to borrowers with adequate equity, credit score, and payment status. Categories B, C, and D sequentially relax these criteria.

Of course, not all candidates refinance. Borrowers may fail to refinance because of a lack of awareness, an intention to move in the near future, or an expectation that rates may fall further.[6] On the one hand, borrowers concerned about their household liquidity or potential depreciation of their homes may be energized to refinance. On the other hand, many borrowers have faced job loss or reductions in their work hours, threatening their eligibility to get a new loan.

[6] Based on the ratio of all mortgage applications and originations captured in Home Mortgage Disclosure Act data to the number of candidates, each month about 5 percent to 10 percent as many borrowers refinance as there are candidates during typical economic times.

Borrower Interest in Refinancing

One measure of attention and interest in refinancing is whether borrowers are applying for new mortgages, as indicated by mortgage credit inquiries appearing on their credit reports. Inquiries reflect "hard pulls" of a borrower's credit report, which typically happen after a borrower has requested a mortgage preapproval or completed a mortgage application. Figure 5 displays the percentage of active mortgage borrowers in each month who had inquired about a new mortgage at some point during the previous six months. The dark-blue solid line represents all active borrowers, and the orange line shows eligible, in-the-money borrowers (corresponding to the estimated candidates displayed in Figure 4). The teal dashed line shows eligible borrowers who are not in the money that month, and the dark-blue dotted line displays borrowers who are ineligible because of poor mortgage performance, a low credit score, or insufficient equity.

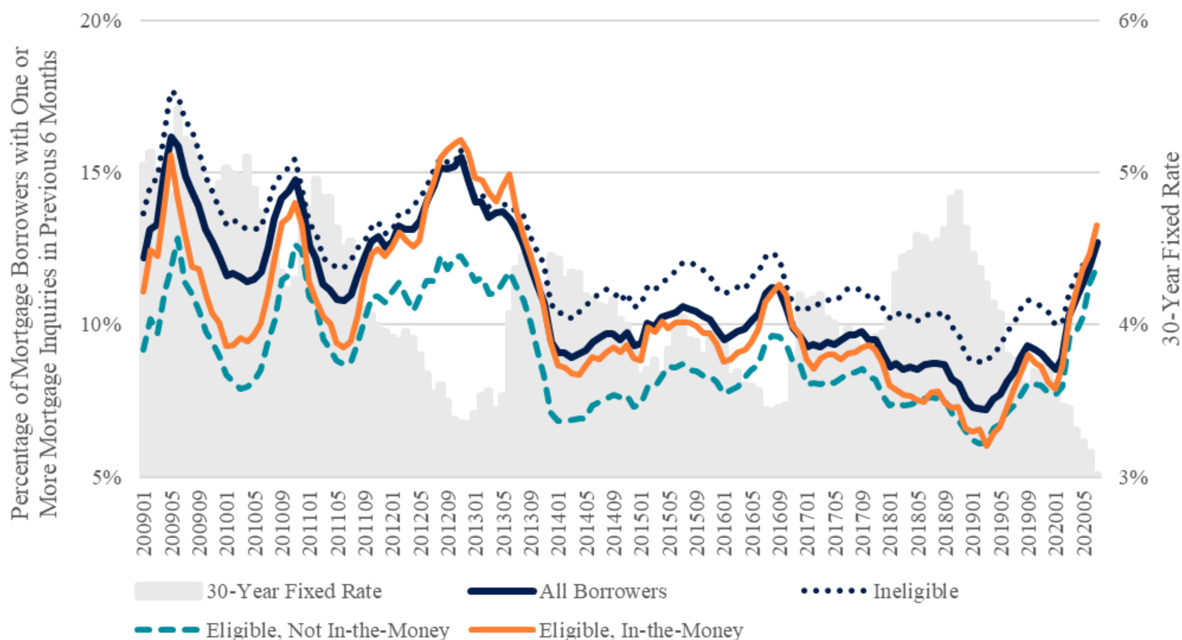
One might expect that those who are eligible and in the money to refinance would be more likely to apply for new mortgage credit than those who do not appear to have a financial incentive to refinance. In fact, the data tell us that those who are ineligible to refinance because of credit or equity constraints are actually the most likely to apply for new credit, except when rates have fallen rapidly, such as this year and in the mid-2012–2013 period. In each of these periods, rates fell to historic lows, and eligible, in-the-money borrowers quickly responded by applying for new mortgages.[7]

Over the 2009–2020 period displayed in Figure 5, inquiries tended to increase each time the 30-year mortgage rate dipped. However, there has been a general downward trend in inquiries over time, potentially indicating less interest in or attention to refinancing. This is consistent with borrowers in recent years having less potential payment savings from refinancing, relative to refinance candidates in earlier periods when rates were declining, whose interest rates had a larger spread relative to the market rate. Although the six-month inquiry rates have increased in recent months, they still remain lower than in previous refi waves. Borrowers

[7] Prior research has found that credit-constrained mortgage borrowers actively apply for new mortgage credit, but they are less likely to ultimately refinance (Lambie-Hanson and Reid, 2018), partly because their applications are less likely to be approved by lenders (Goodman, Bai, and Li, 2019). Several factors may be at play. Credit-constrained borrowers may have higher application rates because they need to apply for longer periods of time before being accepted, but it could also be because they have a stronger incentive to refinance, if reducing their monthly mortgage payments would have a greater relative impact on their budget.

may be responding weakly to historically low interest rates because of unemployment and greater economic uncertainty.

Figure 6. Mortgage Borrowers with at Least One Inquiry for Mortgage Credit in Previous Six Months, January 2009–July 2020



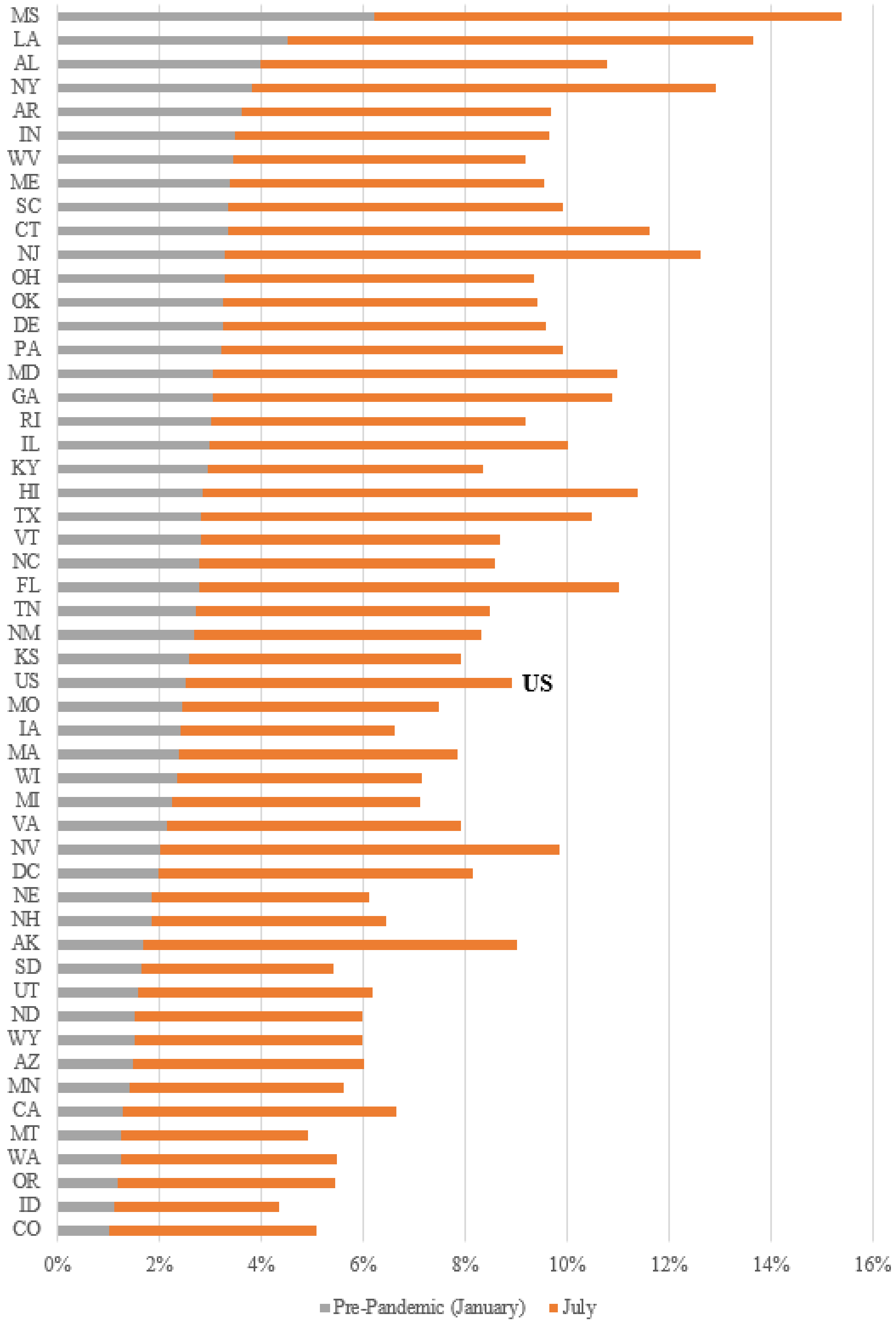
Data sources: Black Knight McDash data, Equifax Credit Risk Insight Servicing data, and Freddie Mac interest rate data

Rising Forbearance and Nonpayment Rates May Hinder Refinances

Although some borrowers are enjoying low interest rates and refinancing to lower monthly payments, a large set of borrowers is struggling to make mortgage payments, including a large number of mortgage borrowers who are receiving loan accommodations, such as forbearance. In July, *including loans in payment deferral programs,* 6.4 percent of U.S. mortgages were 60 or more days past due, relative to just 2.5 percent in January. In fact, this measure of the 60+ days-past-due rate increased in every state during this time (Figure 7), and national past due rates this June and July hit their highest levels since 2013.

Not all borrowers who are past due on their mortgage payments are in immediate risk of foreclosure, however, since these figures include borrowers who have stopped making their payments but are on forbearance plans. As of May, an estimated 8.8 percent of mortgage borrowers nationally were in forbearance, including 12.5 percent of Ginnie Mae borrowers (Black Knight Financial Services, 2020).

Figure 7. Active Mortgages 60+ Days Past Due, January versus July 2020*



Data source: Black Knight McDash data
Note: This source includes as past due those mortgages in payment deferral programs in which a payment has not been made as well as delinquent mortgages that are not in accommodation.

Analysis from the Dallas Fed estimated that, by offering assistance to individuals and employers, the Coronavirus Aid, Relief, and Economic Security (CARES) Act prevented $2.6 billion to $3.5 billion in mortgage payment delinquencies each month during the second quarter of 2020 (Zhou, 2020). However, with the CARES Act expiring on July 31 and no extension or replacement currently agreed upon, borrowers may soon be at greater risk.

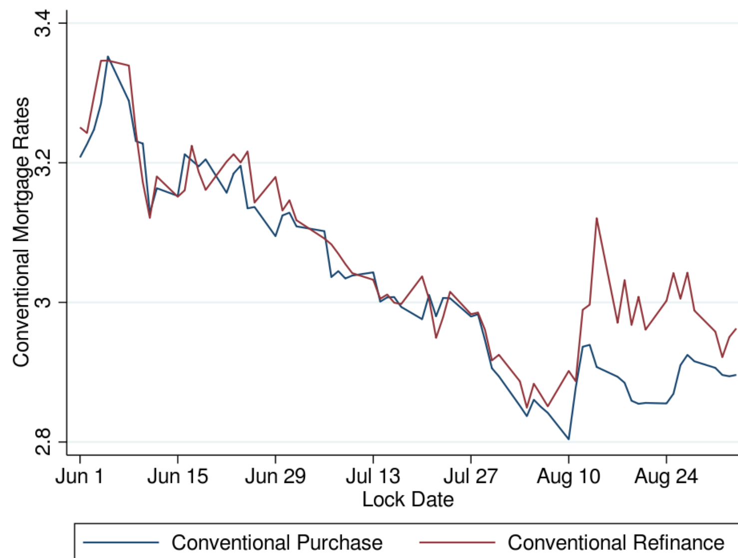
Conclusion

Industry experts forecast 30-year mortgage interest rates staying well below 2019 levels, with rates hovering around 3.1 percent (Mortgage Bankers Association, 2020) or even sustaining levels as low as 2.5 percent (Optimal Blue and Andrew Davidson & Company, 2020). This would perpetuate the wave of refinances we have experienced so far in 2020. Some borrowers who refinanced in 2020 may even find it advantageous to refinance again, if low rates persist. The Mortgage Bankers Association's Mortgage Finance Forecast issued in mid-August 2020 projected strong refinance volume in the second half of 2020, with $760 billion in new originations (Mortgage Bankers Association, 2020).[8]

These forecasts were released shortly after Fannie Mae and Freddie Mac announced on August 12 the 50 basis point "adverse market fee" the FHFA approved for them to add to refinance mortgages, a fee that applies to loans delivered to the government-sponsored enterprises (GSEs). This was initially announced to take effect on September 1 but was subsequently delayed until December 1. The fees that GSEs charge lenders when buying and securitizing their loans get passed on, in part, to borrowers. As shown in Figure 8, following the GSEs' announcement, a wedge emerged between the interest rates of purchase and rate-term refinances after the initial announcement, although it closed somewhat in the days after August 25, when the effective date of the fee was pushed back to December.

[8] For comparison, the Mortgage Bankers Association estimated refinance volume in the entire year of 2019 to be $901 billion, followed by $886 billion in the first half of this year (Mortgage Bankers Association, 2020).

Figure 8. Conventional Mortgage Refinance Rates, June–August 2020



Data sources: Optimal Blue. Rates reflect average interest rates on 30-year conventional loans locked by borrowers who have a FICO score of 740+, whose loan-to-value ratio is no greater than 80 percent, whose debt-to-income-ratio is no greater than 43 percent, and who pay zero points at closing. Refinances include rate and term refinances only (that is, they exclude cash-out loans). Data end on September 3, 2020.

Even if rates return to historically low levels, not all borrowers are likely to partake in the benefits of lower interest rates. Mortgage delinquencies are rising, spurred by historically rapid increases in unemployment. With extensions of unemployment benefits being far from certain, some experts are predicting additional defaults and more forbearance requests without additional government intervention (Haggerty and Lang, 2020).

One proposal by Federal Reserve economists is for Fannie Mae, Freddie Mac, and Ginnie Mae to create a streamlined refinance program, allowing borrowers to refinance their mortgages without income and employment verification (Gerardi, Loewenstein, and Willen, 2020). According to their forecasts, if such a program were adopted, it would reduce the default hazard for the median Fannie Mae and Freddie Mac (Ginnie Mae) borrower by 17 percent (14 percent) when the existing loan's maturity is kept constant, and 37 percent (33 percent) if the loan's maturity is recast into a longer term, which would lower monthly payments even more. In one option proposed in their plan, dubbed "HARP 3.0," Gerardi, Loewenstein, and Willen explain that current default risk could be held constant while even allowing borrowers to take out limited cash out, up to a median of $30,000 for Fannie Mae/Freddie Mac borrowers and $18,000 for Ginnie Mae borrowers.

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Technical Appendix

Weighting: Information on first-lien mortgages is taken from Black Knight McDash data and aggregated up to the market using Flow of Funds (Z.1, L.218) data (subtracting home equity loan and line of credit balances). To adjust the data to be more representative of the market, we weight by category of loan (*k*): held in portfolio, held in agency (Fannie Mae/Freddie Mac/Ginnie Mae) securities, or held in private-label mortgage-backed securities.

Incentives for refinancing: Borrowers are considered "in the money" to refinance if 1) the prevailing fixed rate is at least 75bps below their current rate, 2) they have 60+ months remaining on their mortgage term, and 3) they would save at least $100/month by refinancing. Borrowers with terms of 17 years (204 months) or fewer remaining are assumed to refinance to a 15-year mortgage, so their rate is compared with the prevailing rate for 15-year, fixed-rate mortgages, and their expected mortgage payment change is calculated, assuming they take on a 15-year term. All other borrowers are compared with the 30-year fixed rate, and payments are calculated based on a 30-year term.

Loan eligibility requirement for candidacy: Active borrowers are considered "eligible" to refinance in period *t* if they meet three conditions: 1) have a contemporaneous credit score of ≥ 720, 2) are current on mortgage payments, and 3) have equity of ≥ 20 percent. Black Knight McDash data lack information on second liens held by the borrower, so the calculations above are initially based on mark-to-market loan-to-value (LTV) ratio of first lien ≤ 80 percent. (This LTV is based on the origination LTV. The numerator is updated to the outstanding principal balance of the loan, and the denominator is updated from the time of origination to time *t* using the amount of county house price appreciation that took place during that period.) To account for second liens, we adjust down the aggregate number of refinance candidates by the percentage of candidates in period *t* in group *k* that had first-lien LTV ≤ 80 percent but combined LTV > 80 percent using credit bureau data from Equifax's Credit Risk Insight Servicing data, which is merged to Black Knight McDash data.

Meaningfulness of refinance candidate estimates: The measure of refinance candidates in month *t* is strongly correlated with the number of mortgage applications that month, according to Home Mortgage Disclosure Act data. For the period January 2009–October 2018, the R^2 was 0.64.