

COVID-19 and Loan Performance

A Focus on Manufactured Housing and
Duty to Serve High-Needs Rural Regions





COVID-19 and Loan Performance: A Focus on Manufactured Housing & Duty to Serve High-Needs Rural Regions

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I. Introduction

The outbreak of COVID-19 and the coronavirus pandemic have adversely affected multiple sectors nationally and worldwide, resulting in an instability in the financial sector, particularly in early stages. Financial hardships resulting from job losses, compounded by high inflation rates, have increased the financial burden on many households. Many homeowners have faced budget trade-offs, resulting in difficulties in fulfilling their mortgage obligations. Consequently, loan forbearances and delinquency rates increased during the pandemic.

The effect of the pandemic has been uneven across America. Some demographics, sectors and geographies were more impacted than others. Although relief programs were enacted to help ease homeowners' financial strains, owners of manufactured homes were at times excluded or had to meet more stringent criteria to qualify for these programs. Further, the effect of the pandemic on mortgage markets in rural America was exacerbated by economic disparities traditionally present in this region.

While multiple studies have looked at the effect of the pandemic on housing markets, very few have focused on manufactured housing (MH) and rural America. Both are important topics to study. In fact, Freddie Mac's research on opportunities to expand manufactured housing demonstrated that this housing option could be a viable way to expand affordable homeownership opportunities for many people and to help reduce homeownership gaps (Aw, Brown and Yea, 2022)². Additionally, the population in rural America has traditionally been poorer and more vulnerable to financial stress and economic disruptions than in other areas. Having deeper insights into the impacts on these homeowners and in these areas will further understanding of the true effects of the pandemic on these homeowners and in these areas and, in turn, potential ways to help mitigate negative impacts in the future.

To fill this information gap, Freddie Mac used data from the National Mortgage Database (NMDDB®)³ and conducted a quantitative analysis to study the effect of the pandemic on manufactured housing mortgage forbearances and delinquencies.⁴ This study also highlights the effect of COVID-19 on loan performance in rural America and identifies relevant influencers of probabilities of forbearance and delinquency.

Key Findings

- During the pandemic, the likelihoods of forbearance and delinquency were higher relative to the pre-COVID period.
- Owners of manufactured homes had a lower probability of being in forbearance relative to owners of site-built homes when loan and borrower characteristics were accounted for in the models.

While the descriptive analysis revealed that delinquency rates were higher for manufactured homeowners during the pandemic, the statistical analysis found otherwise. Loan and borrower characteristics played a key role in explaining the likelihood of delinquency. In fact, after accounting for these characteristics, owners of manufactured homes had a lower probability of delinquency. Interestingly, the lower probability of forbearance did not translate into higher chances of delinquency for owners of manufactured homes.

2 Read the report for more details: https://sf.freddie.mac.com/content/_assets/resources/pdf/marketing-materials/identifying-the-opportunities-to-expand-manufactured-housing.pdf

3 This work uses Version 18 of the NMDDB®.

4 90-day or more delinquency. See Section II of this report for a definition of these terms.



- There exist no statistically significant differences in the overall likelihoods of forbearance in areas defined as high-needs rural regions under the Duty to Serve rule and metropolitan areas during the pandemic.⁵
- There exist statistically significant differences in loan performance by geography and property type during the pandemic:
 - Relative to owners of site-built homes, owners of manufactured homes have lower probabilities of forbearance and delinquency.
 - Loans linked to manufactured homes in high-needs rural regions have lower probabilities of forbearance and delinquency relative to site-built homes in the same areas.
 - Loans in high-needs rural areas and other rural regions have a higher probability of delinquency relative to those in metro areas.

II. Data

This study used data from the National Mortgage Database (NMDB[®]), Version 18. According to the Federal Housing Finance Agency (FHFA), the NMDB[®] is a nationally representative, one-in-20 random sample of residential mortgages in the United States. We defined two focal time periods: a pre-COVID period from Q1 2015 through Q4 2019 and a COVID period from Q1 2020 to Q1 2022. We were interested in four main variables. The first two were forbearance and delinquency, which relate to loan performance. Forbearance is a binary (0/1) indicator, where 1 indicates that a loan is in forbearance. Delinquency is also a binary indicator, where 1 means that the loan is at least 90 days delinquent. The other two main variables relate to geography and property type (manufactured vs. site-built). Geographies are based on census tracts. Rural regions are divided into Duty to Serve high-needs and other rural regions; high-needs areas include

⁵ See Section II (Data) of this report for details on how high-needs rural regions and metro areas are defined.



Middle Appalachia, Lower Mississippi Delta, and persistent poverty counties⁶, while the other rural regions include all rural areas that are not in high-needs regions.⁷ Metro areas comprise all non-rural regions.

Also used in this analysis was information about loan and borrower characteristics contained in the NMDB®. Loan characteristics included in our work relate to loan amount, loan-to-value ratio (LTV), loan purpose (purchase vs. refinance), loan type (conventional vs. government backed), debt-to-income ratio (DTI), payment-to-income ratio (PTI), interest rate, government-sponsored enterprise (GSE) loan ownership, and origination term (in months). Borrower characteristics⁸ included in the analysis were race and ethnicity, gender, age, credit score⁹ and income. Also included were indicators for owner occupancy, Home Ownership and Equity Protection Act (HOEPA) higher cost status, interest-only loans, and first-time homebuyer. To achieve more statistical accuracy, given that this analysis tracks and explains trends in loan performance over time, our sample¹⁰ is composed of loans that were active¹¹ from Q1 2015 to Q1 2022. Moreover, the data are set in a longitudinal (or panel) fashion, which tracks each loan and its related characteristics by quarter to achieve more accurate predictions of outcomes (Hsiao, 2017). The panel setting exploits quarterly variations in the data and increases the sample size, thereby increasing the chances of estimates being closer to the true population parameters. Finally, about 1.4% of loans in our sample are linked to manufactured homes and 98.6% to site-built homes.

III. COVID-19 and Loan Forbearances

As a starting point of the analyses, we considered descriptive statistics on the main variables of interest. Owners of Manufactured Homes Had Lower Forbearance Rates than Owners of Site-Built Homes during COVID. Close to 1% of all loans in our dataset were in forbearance during the COVID period compared to 0.05% before COVID. Of the manufactured home loans, 0.8% were in forbearance during the COVID period compared to 1.05% of

the site-built home loans. Before the pandemic, the percentages of loans in forbearance were 0.04% and 0.05% for manufactured homes and site-built homes, respectively.

Quarterly forbearance rates by property type summarized in Exhibit 1 below; Exhibit A1 in the appendix provides a more detailed view of loan forbearances. In the pre-pandemic period studied, forbearance rates were low and remarkably similar for both manufactured and site-built home loans. These rates varied between 0% and 0.09%. In the pandemic's early stages, the percentage of loans in forbearance increased for all property types. The increase was however higher for site-built home loans. For example, forbearance reached its peak in second quarter 2020, when 3.33% of site-built home loans were in forbearance compared to 1.65% of manufactured home loans. On the other hand, while delinquency rates increased for both manufactured home loans and site-built home loans during the

6 Persistent poverty counties include colonias.

7 See <https://www.fhfa.gov/DataTools/Downloads/Pages/Duty-to-Serve-Eligibility-Data.aspx> for definitions of rural areas and high-needs rural regions. NMDB® 18.0 includes the 2017 CDFI Fund persistent poverty counties. Geographic classifications in NMDB 18.0 reflect 2021 definitions, which are based on 2010 census tracts.

8 These characteristics pertain to the primary borrower.

9 We used the Vantage Score 3.0

10 A total of 1,791,884 unique loans were pulled. With the panel setting the estimation samples used in the statistical analyses increased to 4,994,801 and 4,856,289 for the forbearance and delinquency models.

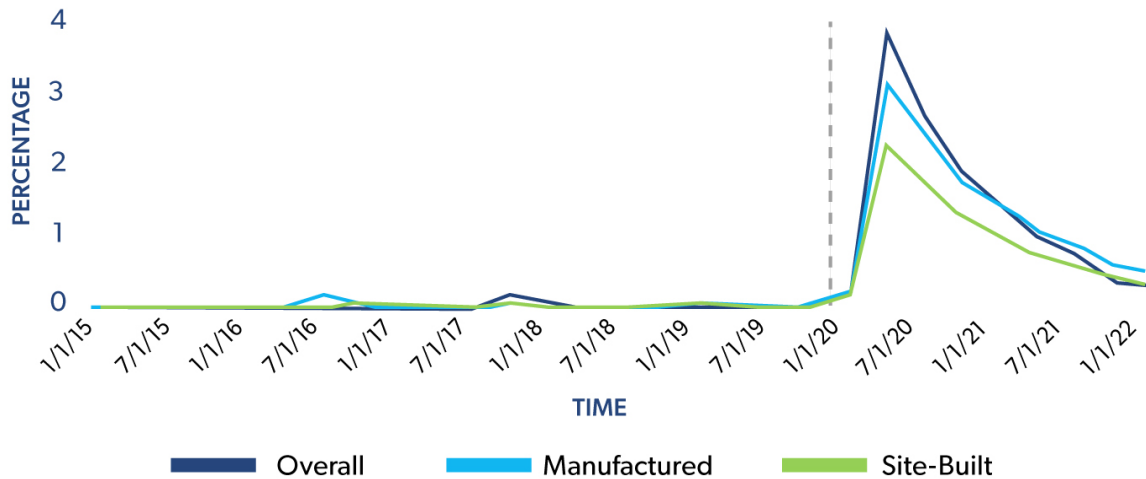
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pandemic period, the increase was higher for manufactured home loans. For instance, the difference in delinquency rates between manufactured homes loans and site-built homes loans was greatest in Q1 2021, when 3.62% of manufactured home loans were at least 90 days delinquent, compared to 0.46% of site-built home loans.

Exhibit 1: Quarterly Trends in Forbearance by Property Type

Quarterly, From 01/2015 to 01/2022



Source: Freddie Mac calculations using National Mortgage Database (Version 18)

Note: Black dotted line represents the start of COVID-19.

The differences in forbearance rates by property type may be explained by many factors. While pandemic-related relief programs were enacted, many owners of manufactured homes were either excluded or had to meet more stringent criteria than owners of site-built homes (Choi and Goodman, 2020; Bourke and Siegel 2020; Leitner et al, 2021). For example, while some federally backed manufactured home mortgages qualified for Coronavirus Aid, Relief, and Economic Security (CARES) Act forbearance, home-only manufactured home loans (commonly referred to in the





industry as chattel or personal property loans) that were not government backed could only qualify for forbearance at the lender’s discretion and according to the lender’s terms.¹² In connection, 98.3% of federally backed loans in our sample were linked to site-built properties and manufactured home loans accounted for about 1.7%.

The Homeowner Assistance Fund (HAF) covers loans for manufactured homes with and without land; however, many states still have not started accepting HAF applications. In fact, according to Stark (2022), only 22 states and two territories are accepting HAF applications. On the other hand, the Health and Economic Recovery Omnibus Emergency Solutions (HEROES) Act, enacted in late 2020, offers more equitable protection for manufactured home loans that are not federally backed (Choi and Goodman, 2020). Interestingly, shortly after the HEROES Act went into effect and beginning around Q1 2021, the gap in forbearance rates between manufactured home and site-built home loans started shrinking. Freddie Mac summarized loan and borrower characteristics to help further explain forbearance trends by property type, as shown in Exhibit 2. The average loan amount for manufactured homes is less than half that for site-built properties (\$120,000 compared to \$270,000). Given that site-built homes are more expensive, the payment amounts are also higher. Therefore, one could hypothesize that site-built homeowners were more affected by financial strains caused by the pandemic and hence more likely to seek forbearance relief.

Research has also shown that buyers of site-built homes tend to have achieved higher levels of education than buyers of manufactured homes (Marshall, 2006), which could indicate that owners of site-built homes had access to more sources of information about forbearance relief programs. Moreover, access to the internet and technology became critical during the pandemic, as most business transactions were made online. Most owners of manufactured homes in our sample live in rural areas (about 65%), which tend to have less access to digital resources (Vogels, 2021; Statti and Torres, 2020; Sookhai, 2020).

Exhibit 2: Loan and Borrower Characteristics by Property Type

Characteristic	Site –Built Home	Manufactured Home
Debt To Income (DTI, %)	35.02	34.84
Interest rate (%)	3.38	4.95
HOEPA	0.03	0.31
Loan amount (\$)	270,106.60	129,791.90
Loan-to-value ratio (LTV, %)	73.31	72.84
Credit score	741.66	702.77
Borrower age	46.15	46.19
Payment-to-income ratio (PTI, %)	21.14	18.36
Interest only (0/1 indicator; proportion)	0.39	0.74

¹² While some lenders offered forbearance relief, it is unclear the extent to which they are consistent with the credit reporting benefits associated with CARES Act.



Term (months)	317.26	280.63
Income (\$)	111,947.30	67,665.59
White only (%)	86.97	91.63
Black only (%)	5.88	4.57
American Indian only (%)	0.37	0.76
Asian only (%)	4.87	1.55
Native Hawaiian/Pacific Islander (%)	0.35	0.51
Two races/Non-Black (%)	1.40	0.79
Two races/One Black (%)	0.15	0.20
Owner occupied (%)	93.32	96.52
First-time homebuyer (%)	24.56	46.80
Non-government-sponsored enterprise (GSE) loans (%)	39.63	76.24
Fannie Mae (%)	33.17	14.72
Freddie Mac (%)	26.55	8.66
Federal Home Loan Banks (%)	0.65	0.38
Conventional mortgages (%)	78.57	73.35
Federal Housing Administration (FHA) insured (%)	11.95	18.40
Veterans Administration (VA) guaranteed (%)	7.82	6.22
Farm Service Agency/ Rural Housing Service (FSA/RHS) insured (%)	1.66	2.03

Source: Freddie Mac calculations using National Mortgage Database (Version 18)



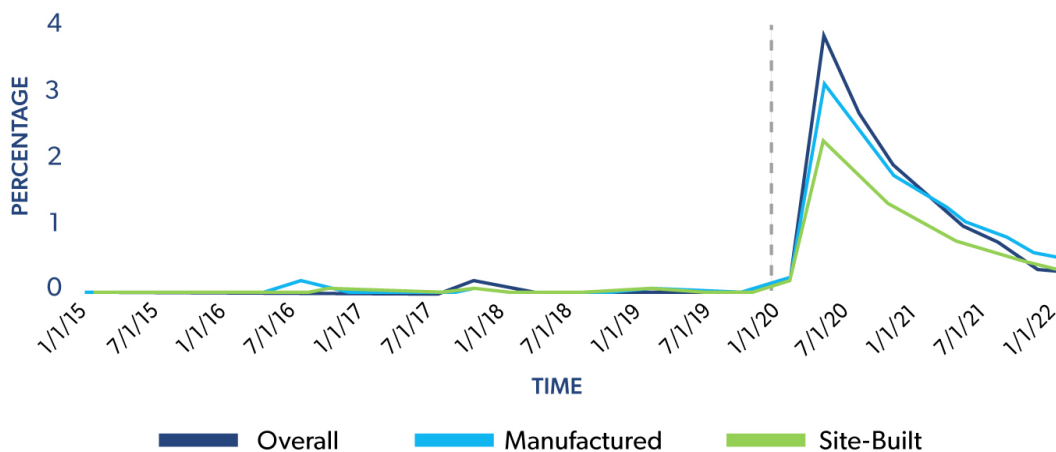
Forbearances Were Lower in High-Needs Rural Regions than in Metro Areas during COVID

Freddie Mac also analyzed forbearances in the three distinct geographies described earlier over the entire study period. In the pre-pandemic period studied, forbearance rates were similar across the geographies, varying between 0.04% and 0.06%. During the pandemic period from Q1 2020 to Q1 2022, forbearance in high-needs rural regions increased from 0.06% to 1.14%. The rate went from 0.05% to 1.10% in metropolitan areas. The smallest overall increase in forbearance was recorded in other rural regions, where the percentage of loans in forbearance went from 0.04% to about 0.8%.

For a more detailed view, Exhibit 3, below, and Exhibit A.2, in the appendix, show quarterly trends in forbearance by geography. Before Q1 2020, forbearances in all three regions were low and similar. In fact, the percentage of loans in forbearance in each geography was less than 1%. When the pandemic started, forbearances increased everywhere but slightly more in metro areas than in high-needs rural regions and other rural areas. Forbearances in all three regions reached a peak in Q2 2020. Metro areas recorded a high of about 3.60%, followed by high-needs rural areas (1.65%) and other rural regions (1.22%). Overall, quarterly differences in forbearance rates by geography were slim. Moreover, forbearances in all geographies started following a downward trend around Q3 2020. Forbearance rates are now approaching their pre-pandemic levels, as expected, because forbearance relief has a time limit.

Exhibit 3: Quarterly Trends in Forbearance by Region

Percentage of Loans in Forebearance by Property Type Quarterly, From 01/25 to 01/2022



Source: Freddie Mac calculations using National Mortgage Database (Version 18)

Note: Dotted line represents the start of COVID. "Other" refers to other rural regions.



Freddie Mac reviewed the literature on health and housing to better understand differences in regional forbearance rates. In early stages of the pandemic, the relatively higher forbearance rate in metro areas may be linked to geographical differences in the progression of the pandemic. As mentioned in Cromartie, et.al (2020), metro areas were affected first, then rural regions. Therefore, related financial hardships were more pronounced in metro areas, further explaining the higher forbearance rates in these areas in the early stages.

Our analysis also considered loan and borrower characteristics by geography to gain more insights into factors driving differences in regional forbearance rates. A summary of these characteristics is displayed in Exhibit 4. Loan amounts and payment-to-income (PTI) ratios may play a role in explaining regional forbearance trends. In fact, mortgages in high-needs rural regions are for lower dollar amounts than in metro areas and the primary borrowers on these loans also have lower PTI ratios, implying lower payment obligations. Moreover, the percentage of loans in forbearance is lower for manufactured homes, which are more heavily concentrated in rural regions (65% of manufactured home loans in our sample are in rural areas and about 35% are in metro areas).

Exhibit 4: Loan and Borrower Characteristics by Region

Characteristic	Metro	High-needs Rural	Other Rural
Debt To Income (DTI, %)	35.23	34.46	34.37
Interest (%)	3.37	3.60	3.45
HOEPA (%)	0.03	0.07	0.06
Loan amount (\$)	289,554	199,995.80	209,606.30
Loan To Value (LTV, %)	72.71	76.13	74.54
Credit score	744.62	725.36	733.5
Borrower age	46.24	45.11	46.20
Payment To Income (PTI, %)	21.71	19.39	19.33
Interest only (%)	0.43	0.23	0.27



Term (months)	319.78	307.74	308.22
Income (\$)	117,004.70	91,751.09	96,453.87
White only (%)	85.02	88.07	94.83
Black only (%)	6.47	8.22	2.39
American Indian only (%)	0.35	0.45	0.49
Asian only (%)	5.95	2.19	1.34
Native Hawaiian/ Pacific Islander (%)	0.39	0.23	0.26
Two races/Non-Black (%)	1.67	0.68	0.58
Two races/One Black (%)	0.16	0.15	0.11
Owner occupied (%)	93.61	93.14	92.45
First-time homebuyer (%)	23.76	33.09	25.91
Non-government-sponsored enterprise (GSE) loans (%)	37.3	53.08	46.26
Fannie Mae (%)	34.5	26.12	29.29
Freddie Mac (%)	27.67	20.45	23.22
Federal Home Loan Bank (%)	0.53	0.36	1.22
Conventional mortgage (%)	80.22	70.93	74.67
Federal Housing Administration (FHA) insured (%)	11.71	16.41	11.51
Veterans Administration (VA) guaranteed (%)	7.44	7.81	9.24
Farm Service Agency / Rural Housing Service (FSA/RHS) insured (%)	0.62	4.84	4.57

Source: Freddie Mac calculations using National Mortgage Database (Version 18).



To What Extent Do Property Type and Geography Impact the Likelihood of Forbearance?

Aside from property type and geography, other factors also simultaneously impact the likelihood of forbearance. Therefore, descriptive statistics alone do not provide an accurate measure of the relationships between the likelihood of forbearance, property type, and geography. To better estimate these relationships, Freddie Mac leveraged modern statistical analysis tools.

First, we prepared the data in such a manner that each loan in our sample was observable in every quarter from the start of 2015 to Q1 2022. This setting is known in statistics as panel data¹³ or longitudinal dataset. We wanted to estimate the following equation with a similar approach to Wooldridge (2010):

$$(1) F_{it} = X'_{it} \beta + \epsilon_{it} \quad i=1, \dots, N \text{ and } t=1, \dots, T=29$$

$$F_{it} = 1 \text{ if } F_{it}^* > 0 \text{ and } F_{it} = 0 \text{ otherwise}$$

Where:

- F*: stands for forbearance and denotes the unobservable variable,
- F: is the observed outcome denoting whether a loan enters forbearance,
- X: is observable time varying and time invariant vector of strictly exogenous characteristics that influence F^{*},
- β: is the vector of coefficients associated with X, and
- ε_{it}: is an error term.

¹³ See Section II (Data) of this report for more details. Our panel dataset is strongly balanced.



In other words, we wanted to estimate the magnitude of the relationship between having a manufactured home during the pandemic and the probability of entering forbearance, controlling for a set of influencers that also impact forbearance. To estimate this equation, we used the pooled probit and the random effects probit models.¹⁴

Manufactured Home Loans Had a Lower Likelihood of Being in Forbearance

Manufactured Home Loans Had a Lower Likelihood of Being in Forbearance

Results from the estimation¹⁵ of equation (1) suggest that, during the COVID period studied, the likelihood of forbearance increased for all loans. In fact, the probability of any loan being in forbearance was 1.4% higher relative to the pre-pandemic period. Over the entire study period, manufactured home loans had a 0.6% lower likelihood of forbearance than loans linked to site-built properties. Moreover, the effect of owning a manufactured home on forbearance during the pandemic was even higher. We estimated that, compared to owners of site-built homes, owners of manufactured homes had a 1.1% lower probability of forbearance during the pandemic. In other words, if a site-built home loan had a 40% chance of being in forbearance during COVID, that probability would decrease to 38.9% if that loan were linked to a manufactured home instead.

Manufactured Home Loans in High-needs Rural Regions Had a Lower Probability of Forbearance during COVID

Our results also reveal that no statistically significant differences exist in the overall likelihoods of forbearance in high-needs rural regions and metropolitan areas. Alternatively stated, loans in high-needs areas are as likely as those in metro areas to be in forbearance. However, during the pandemic, owners of manufactured homes in high-needs rural regions had a 0.22% lower probability of forbearance compared to owners of site-built properties within the same geography.

The first column in Exhibit 5 lists the other variables that impact the likelihood of forbearance; the second column shows the expected directional relationship, where a negative sign means that the variable reduces the likelihood of forbearance, and a positive sign means the opposite. For example, the negative sign next to the variable “borrower age” means that the probability of entering forbearance decreases as the borrower’s age increases.

14 Because forbearance is binary (0/1), we used binary choice models to exploit non-linearities and to account for the panel structure. Moreover, many of the explanatory variables were recorded at origination and do not vary by quarter. Because there is not sufficient within-group variation for X (in equation 1), the random effects estimation is superior to the fixed effects one.

15 The results described are significant at least at the 5% level. The direction of the effects (sign on the coefficient estimates) is the same for both models. The marginal effects computed are those of the pooled probit (we do not expect a significant difference between the magnitude of the effects of the pooled and random effects probit estimators, if any). Coefficient estimates and marginal effects are reported in Exhibits A.5 and A.6 (appendix). Moreover, the results reported are associations and not causal relationships due to endogeneity related to self-selection.



Exhibit 5: Relevant Covariates Associated with the Likelihood of Forbearance

Variable	Directional Effect on the Probability of Forbearance
Borrower age	(-)
Black only	(+)
Asian only	(+)
Native Hawaiian/Pacific Islander	(+)
2 Races (one Black)	(+)
Loan amount	(+)
Refinance loan	(-)
Add/Remove borrowers	(-)
Income	(+)
Interest rate	(+)
LTV	(+)
DTI	(+)
Female	(-)
Credit score	(-)
First -time homebuyer	(-)
Fannie Mae	(+)
Freddie Mac	(+)
FHL Bank	(-)
HOEPA loan	(-)
Interest only	(-)
FHA insured	(+)
VA guaranteed	(+)
FHA/RHS insured	(+)
Owner occupied	(+)
PTI ratio	(+)
Term	(+)

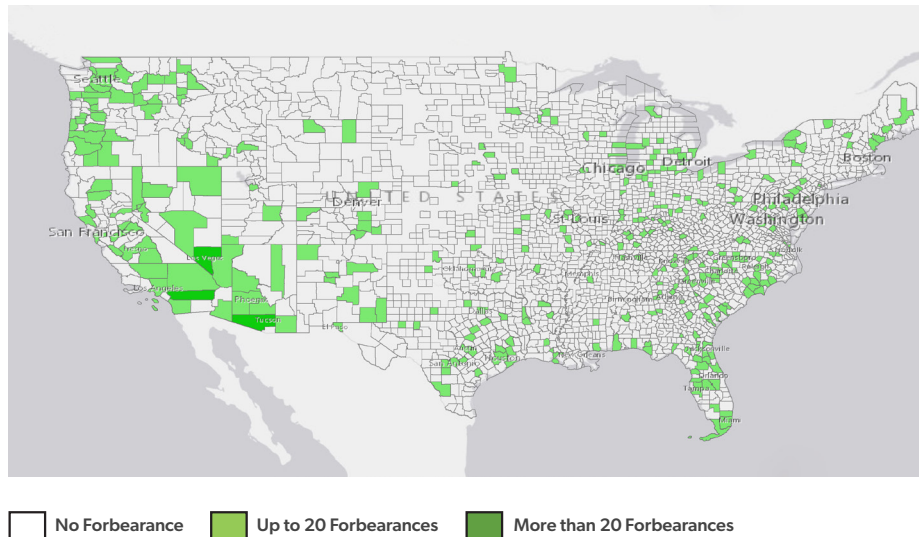


We used modern statistical analysis tools to estimate more accurately the relationship between property type and the probability of being in forbearance during the pandemic, controlling for a set of influencers that also impact forbearance.

Finally, Freddie Mac looked at county-level data to gain more insights on where manufactured home loan forbearances are highest. Exhibit 6 shows a map of concentrations of manufactured home loan forbearances by county. Most counties in the data (about 87%) had no manufactured home loans in forbearance. In comparison, data showed that 39% of counties had site-built home loans in forbearance during the pandemic. As highlighted by the map, manufactured home loan forbearances were more prevalent in the West (Arizona, California, Nevada, Oregon, Washington) and in the South (Florida, North Carolina, South Carolina, Texas). In each of these states, 50 or more loans were in forbearance during the pandemic. Indiana also has a relatively high number of manufactured home loans in forbearance, with a total of 53. In connection, 1.7% of all mortgages in Indiana during the pandemic were manufactured home loans, compared to 1.4% in the sample for the study period.

Exhibit 6: Concentrations of Manufactured Home Loan Forbearances during the Pandemic

Count of Manufactured Home Loans in Forbearance during Covid



IV. Loan Delinquencies during the Pandemic

Next, we turned our focus to delinquencies. For this analysis, we used loans that were active from Q1 2015 to Q1 2022 for the reasons described earlier and for consistency. Overall, the average 90-day or greater delinquency rates before and during COVID were similar (0.59% before and 0.53% during). Delinquency for manufactured home and site-built home loans were close in the pre-COVID period: 0.80% and 0.58%, respectively). From Q1 2020 to Q1 2022, the percentage of loans that were 90 days or more delinquent rose for manufactured home loans – to 2.72%, compared to about 0.5% for site-built home loans. Once certain variables were accounted for in the statistical model, however, the difference was not as large as it seems on its face.

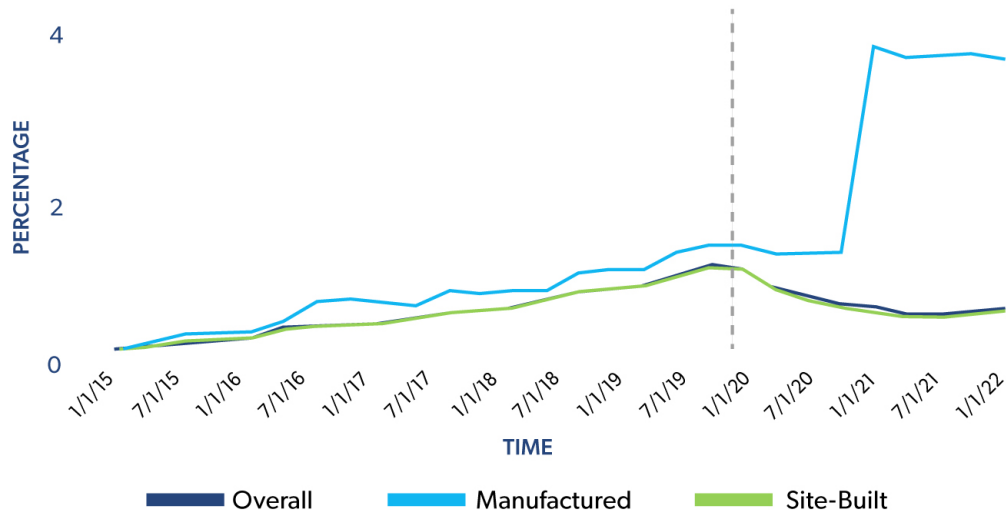
Delinquency Rates Were Higher for Manufactured Home Loans during the Pandemic

Exhibit 7 shows time series graphs of delinquency by property type while exhibit A.3 (appendix) shows the percentages associated with these trends. While delinquency rates for manufactured and site-built home loans were close in the pre-COVID period (with those for manufactured home loans being slightly higher), they diverged during the pandemic. Overall, the quarterly trends showed a higher delinquency rate for owners of manufactured homes during the pandemic, reaching a maximum of 3% during Q1 2021.



Exhibit 7: Quarterly Trends Delinquency Rates by Property Type

Percentage of Loans in 90+ Day Delinquent by Property Type Quarterly, From 01/2015 to 01/2022



Source: Freddie Mac calculations using National Mortgage Database (Version 18)

Freddie Mac surveyed the housing literature to help explain trends in delinquency by property type. First, owners of manufactured homes work in sectors that were more affected by the pandemic in terms of job losses. For example, according to data from the 2013-2018 American Community Survey (as cited in Choi and Goodman, 2020), 35% of manufactured home owners work in food service and accommodations, retail, construction, entertainment and other services, compared with 24% of owners of single-family homes. These five sectors suffered the most job losses during the pandemic (Cunningham, Choi and Goodman, 2020). The manufactured home owner demographic is therefore more vulnerable to delinquency, given financial strains stemming from higher job losses.

Interestingly, while forbearance was lower for loans on manufactured homes during the pandemic than for site-built homes, delinquency rates of 90 days or more were higher for manufactured homes loans. According to Wu (2020) and Neal and Young (2020), loans that were under CARES Act forbearance were not reported in delinquency so long as these loans also were not delinquent when they entered that forbearance. While lenders that made loans on manufactured homes offered relief programs, the related credit reporting may not necessarily have aligned with the reporting benefits provided by government relief programs. Therefore, if owners of manufactured homes who experienced financial strains were not taking advantage of CARES Act forbearance at the same rate as owners of site-built homes, for example, their loans may have been reported in delinquency at higher rates during the pandemic. Further, 99.26% of manufactured home loans reported as delinquent during the pandemic had not been in forbearance, compared to 96.5% for site-built home loans.

Moreover, the loan characteristics listed previously in Exhibit 4 show that site-built home loans typically have better financing terms than manufactured home loans. For example, the average interest rate on manufactured home loans is about two percentage points higher. This may have added financial stress for owners of manufactured homes during



the pandemic period studied, thereby impacting their ability to make payments on time. Also, the income differences between the people who traditionally choose site-built homes and those who buy manufactured homes tend to be large. In fact, the average yearly earnings of owners of manufactured homes in the data are about half that of owners of site-built homes (\$68,000 compared to \$112,000). These differences underscore that the manufactured home owner demographic may have been more financially vulnerable to the pandemic's economic shocks.

Delinquency Rates Were Higher in High-Needs Rural Regions before and during the Pandemic, and the Gap Increased during the Pandemic

Our analysis also looked at delinquency rates by geography for a more targeted perspective on loan performance in high-needs rural areas. Overall, descriptive statistics showed that delinquency rates in metro areas and other rural areas before COVID were similar at 0.56% and 0.57%, respectively. Delinquency was slightly higher in high-needs rural regions at 0.86%. From Q1 2020 to Q1 2022, delinquency increased from 0.86% to 0.93% in high-needs rural areas and from 0.57% to 0.61% in other rural regions. Delinquency in metro areas during the same period slightly decreased (0.47% compared to 0.56% pre-pandemic).

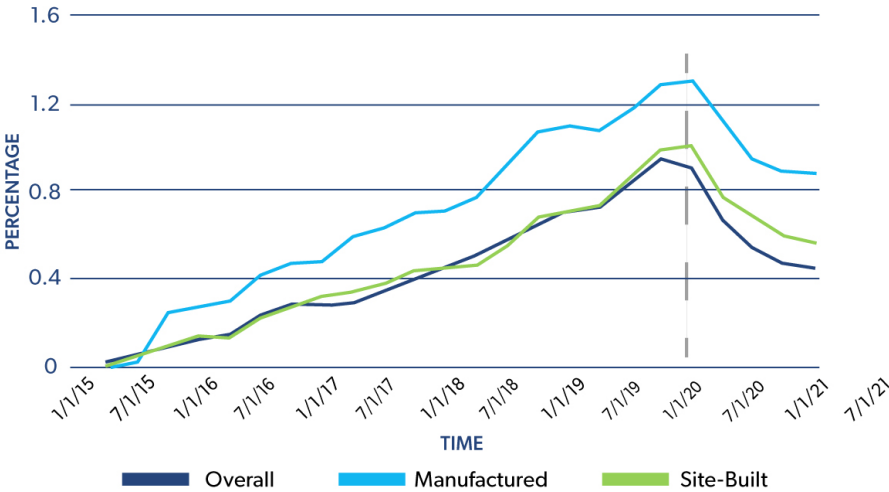




We also looked at quarterly delinquency for a more complete picture. As shown in the Exhibit 8, a time series graph of quarterly delinquency rates by region, homeowners in high-needs rural areas traditionally had higher delinquency rates than those in metro and other rural areas (before and during the pandemic). These trends may be explained by economic disparities that high-needs rural areas have traditionally experienced. In fact, this region is characterized by higher poverty rates and a lack of resources (Institute for Research on Poverty, 2020). Interestingly, quarterly delinquency during the pandemic period studied followed a downward trend in all regions until around Q2 2021, when delinquency rates started increasing. The decrease in regional delinquency rates in the early stages may be linked to reporting; loans under CARES Act relief were not reported as delinquent so long as they were not delinquent before entering forbearance. Go to Exhibit A.4 in the appendix for the numbers associated with the graph.

Exhibit 8: Quarterly Regional Trends in Delinquency Rates

Percentage of Loans 90+ Day Delinquent by Region Quarterly, From 01/2015 to 01/2022



Source: Freddie Mac calculations using National Mortgage Database (Version 18)





Note: Dotted line represents the start of COVID. "Other" refers to other rural regions.

To What Extent Do Property Type and Region Impact the Likelihood of Delinquency?

Similar to forbearance, delinquency is affected by other factors in addition to property type and region. Therefore, descriptive statistics alone do not provide a reliable measure of the extent to which property type and geography impact the probability of delinquency because they do not account for the other relevant factors.

To mitigate this issue and to better predict the impact of property type and geography on the likelihood delinquency during the pandemic, we used a panel data setting and relied on similar statistical techniques¹⁶ used to estimate equation (1). Moreover, we controlled for loan and borrower characteristics that may influence delinquency based on our survey of the literature. Borrowing from Wooldridge (2010), the model was defined using a latent variable approach as follows:

$$(2) \quad D_{it}^* = C_{it}' \delta + \theta_{it}, i=1, \dots, N \text{ and } t=1, \dots, T=29$$

$$D_{it} = 1 \text{ if } D_{it}^* > 0 \text{ and } D_{it} = 0 \text{ otherwise}$$

Where:

D^* : stands for delinquency and denotes the unobservable variable,

D : is the observed outcome denoting whether a loan is at least 90 days delinquent,

C : is observable time varying and time invariant vector of strictly exogenous characteristics which influence D^* ,

δ : is the vector of coefficients associated with C , and

θ_{it} : is an error term.

Owners of Manufactured Homes Were Less Likely to Be Delinquent on Loans

Results from the estimation¹⁷ of equation (2) using the regression models described earlier suggest that, overall, manufactured home loans have a lower probability of delinquency. In fact, loans linked to manufactured homes have about a 0.3% lower probability of being delinquent 90 days or more. This is an interesting finding, given that the descriptive analysis suggested a slightly higher delinquency rate for manufactured home loans. One could therefore argue that loan and borrower characteristics play a key role in explaining differences in delinquency rates by property

¹⁶ We used the same loan and borrower characteristics used in the estimation of equation (1). Equation (2) is estimated using a pooled probit model and the sample size is 4,856,289.

¹⁷ The results discussed are significant at least at the 5% level. See Exhibits A.7 and A.8 (appendix) for detailed results. Moreover, the results reported are associations and not causal relationships due to endogeneity related to self-selection.

type. After controlling for these influencers, owners of manufactured homes were less likely to be delinquent on their mortgages than site-built homeowners. This result further highlights the importance of the statistical analysis because the descriptive statistics alone suggested a different picture. Our results also suggest that the probability of delinquency increased during the pandemic by 0.07% for any loan. Alternatively stated, loans on both manufactured homes and site-built homes were more likely to be delinquent 90 days or more. However, relative to owners of site-built homes, manufactured home owners had a 0.3% lower probability of delinquency during the pandemic.

Borrowers in High-Needs Rural Regions Had a Lower Likelihood of Delinquency

Our estimates suggested that loan and borrower characteristics such as those listed in Exhibit 2 also played a significant role in explaining the differences in delinquency rates by geography. Quarterly summary statistics suggested that delinquency was slightly higher in high-needs rural areas, as shown in Exhibit 8. Through a statistical analysis that accounted for other influencers of delinquency, we found that loans in high-needs rural regions had a slightly (0.03%) lower probability of delinquency than in metro areas. However, if we look at the likelihood of delinquency during the pandemic instead of the entire study period, homeowners in high-needs rural and other rural regions had a slightly higher chance of being delinquent on their mortgages compared to those in metro areas. This effect may be explained by the generally higher poverty rates and fewer economic opportunities in rural America that make this demographic more vulnerable to financial stresses. Moreover, our results also suggested that statistically significant differences exist in the likelihood of delinquency in high-needs rural regions by property type. For example, during the pandemic, loans on manufactured homes in high-needs rural regions have a 0.1% lower probability of delinquency relative to site-built homes within the same geography.

Exhibit 9 shows loan and borrower characteristics that our estimation identified as relevant variables associated with the likelihood of delinquency. As in Exhibit 5, the first column lists the variables names; the second column shows the expected directional relationship, where a negative sign means that the variable reduces the chances of a loan being delinquent and a positive sign means the opposite effect. For example, while older borrowers had a lower probability of forbearance, they were more likely to be delinquent on their mortgages.





Exhibit 9: Relevant Covariates Associated with the Likelihood of Delinquency

Variable	Directional Effect on the Probability of Delinquency
Borrower age	(+)
Black only	(+)
American Indian only	(+)
Asian only	(-)
Native Hawaiian/ Pacific Islander	(+)
Two races, one non-Black	(-)
Two races, one Black	(+)
Loan amount ¹⁸	(+)
Refinance	(-)
Add/Remove a borrower	(-)
New mortgage	(-)
Income	(+)
LTV	(+)
DTI	(+)
Female	(-)
Credit score	(-)
Fannie Mae	(+)
Freddie Mac	(+)
HOEPA loan	(-)
FHA insured	(+)
VA guaranteed	(+)
FSA/RHS insured	(+)
Owner occupancy	(-)
PTI	(+)
Term	(+)

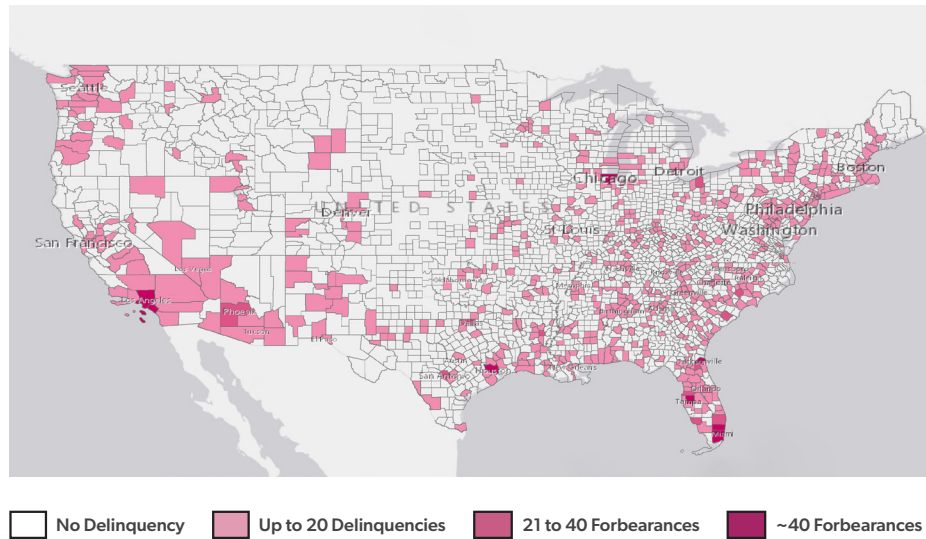
Last, we looked at county-level data on delinquency for more insights on where manufactured home loan delinquencies

¹⁸ The effect of loan amount on the probability of delinquency is small but positive. All effects are statistically significant at least at the 10% level.

are more concentrated. Exhibit 10 shows a map of concentrations of manufactured home loan delinquencies by county. The greatest number of delinquencies on manufactured home loans in a single county occurred in Los Angeles County in California,¹⁹ where 65 manufactured home loans were delinquent 90 days or more during the pandemic. About 24% of counties in the data had at least one delinquent manufactured home loan. In comparison, the greatest number of delinquent site-built home loans in a single county in our sample – 786 – occurred in Cook County, Illinois, where almost all loans (99.8%) were site-built. About 65% of counties had at least one delinquent site-built home loan during the pandemic. Further, manufactured home loan delinquencies were highest in the East (Maryland, New York, Pennsylvania), the West (California), the Midwest (Illinois, Kentucky, Ohio), and the South (Alabama, Georgia, Louisiana, North Carolina, South Carolina, Texas, Virginia). In each of these states, at least 100 loans were delinquent for 90 days or more during the pandemic.

Exhibit 10: Concentration of Manufactured Home Loan Delinquencies by County during the Pandemic

Count of Manufactured Home Loans 90+ Day Delinquencies during Covid



Source: Freddie Mac calculations using NMDB Version 18.

¹⁹ Of all manufactured home loans in Los Angeles County, California, about 2.6% were at least 90 days delinquent during the pandemic. Further, manufactured home loans represent close to 0.7% of all mortgages in this county during the pandemic.



V. Conclusions

Many households experienced financial hardships in the wake of the pandemic, resulting in difficulties making their mortgage payments on time. During timeframe studied, the likelihood of entering forbearance and/or delinquency increased across the board. The effect of the pandemic has been uneven, however. Owners of manufactured homes are likely to work in the five sectors that were affected most by the pandemic. Additionally, people living in rural regions tend to be more susceptible to financial shocks because comparatively higher poverty rates and fewer economic opportunities traditionally are present in these areas.

Although relief programs were available during the pandemic, owners of manufactured homes were in some cases excluded or had to meet more stringent criteria than owners of site-built homes. Interestingly, our descriptive analysis revealed that quarterly forbearance rates were lower for owners of manufactured homes than for those of site-built

homes during the pandemic period, but delinquency rates were higher for owners of manufactured homes.

Importantly, our statistical analysis reveals that, after accounting for loan and borrower characteristics, manufactured home owners had a lower probability of forbearance during the pandemic and over the entire study period. Interestingly, this lower likelihood of forbearance did not translate into higher chances of delinquency. In fact, owners of manufactured homes had a lower probability of delinquency before and during the pandemic over the study period.

Moreover, in the pandemic period, loans in high-needs rural areas were as likely as those in metro areas to be in forbearance. Homeowners in high-needs areas, however, had a higher likelihood of delinquency, highlighting the economic vulnerability in this region. Layering property type over geography, we found that owners of manufactured homes in high-needs rural regions had lower probabilities of forbearance and delinquency relative to owners of site-built homes in the same area.

More research is needed into the causal impact of property type and geography on loan performance and to account for potential linkages between the likelihoods of forbearance and delinquency. However, this research highlights the importance of loan and borrower characteristics in explaining differences in loan performance by geography and by property type.



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Appendix: Additional Exhibits

Exhibit A.1: Quarterly Percentages of Loans in Forbearance by Property Type

Quarter	Overall	Manufactured	Site-Built
1/1/2015	0	0	0
4/1/2015	0	0	0
7/1/2015	0.01	0	0.01
10/1/2015	0	0	0.01
1/1/2016	0.01	0	0.01
4/1/2016	0.01	0	0.01
7/1/2016	0.02	0	0.02
10/1/2016	0.02	0	0.02
1/1/2017	0.02	0.03	0.02
4/1/2017	0.02	0.05	0.02
7/1/2017	0.02	0.02	0.02
10/1/2017	0.17	0.02	0.17
1/1/2018	0.07	0.07	0.07
4/1/2018	0.04	0.03	0.04
7/1/2018	0.03	0.04	0.03
10/1/2018	0.05	0.06	0.05
1/1/2019	0.08	0.09	0.08
4/1/2019	0.06	0.06	0.06
7/1/2019	0.05	0.06	0.05
10/1/2019	0.05	0.03	0.05
1/1/2020	0.19	0.23	0.19
4/1/2020	3.25	1.65	3.28
7/1/2020	2.37	1.4	2.39
10/1/2020	1.65	1.21	1.66
1/1/2021	1.29	1.05	1.3
4/1/2021	0.93	0.78	0.93



7/1/2021	0.72	0.71	0.72
10/1/2021	0.43	0.49	0.43
1/1/2022	0.33	0.37	0.33

Source: Freddie Mac Calculations Using National Mortgage Database (version 18).

Exhibit A.2: Quarterly Percentages of Loans in Forbearance by Region

Quarter	Metro	High-Needs Rural	Other
1/1/2015	0	0	0
4/1/2015	0	0	0
7/1/2015	0.01	0	0.01
10/1/2015	0.01	0	0.01
1/1/2016	0.01	0	0.02
4/1/2016	0.01	0	0.02
7/1/2016	0.01	0.16	0.02
10/1/2016	0.01	0.07	0.03
1/1/2017	0.02	0.06	0.02
4/1/2017	0.02	0.04	0.02
7/1/2017	0.02	0.04	0.02
10/1/2017	0.2	0.11	0.08
1/1/2018	0.09	0.04	0.04
4/1/2018	0.04	0.03	0.03
7/1/2018	0.03	0.02	0.03
10/1/2018	0.04	0.04	0.07
1/1/2019	0.08	0.08	0.09
4/1/2019	0.06	0.06	0.06
7/1/2019	0.05	0.06	0.05
10/1/2019	0.05	0.07	0.04
1/1/2020	0.19	0.24	0.19
4/1/2020	3.59	2.91	2.16



7/1/2020	2.57	2.31	1.65
10/1/2020	1.76	1.65	1.22
1/1/2021	1.37	1.4	0.95
4/1/2021	0.98	1.04	0.69
7/1/2021	0.75	0.86	0.54
10/1/2021	0.42	0.59	0.39
1/1/2022	0.32	0.47	0.33

Source: Freddie Mac Calculations Using National Mortgage Database (version 18).

Exhibit A.3: Quarterly Percentages of 90 Days or More Delinquent Loans by Property Type

Quarter	Overall	Manufactured	Site Built
1/1/2015	-	-	-
4/1/2015	0.01	0	0.01
7/1/2015	0.04	0.1	0.04
10/1/2015	0.1	0.2	0.1
1/1/2016	0.13	0.21	0.13
4/1/2016	0.16	0.21	0.15
7/1/2016	0.25	0.35	0.24
10/1/2016	0.29	0.58	0.29
1/1/2017	0.3	0.61	0.3
4/1/2017	0.32	0.56	0.32
7/1/2017	0.38	0.53	0.38
10/1/2017	0.44	0.7	0.44
1/1/2018	0.48	0.68	0.48
4/1/2018	0.51	0.71	0.51
7/1/2018	0.61	0.72	0.6
10/1/2018	0.7	0.91	0.7
1/1/2019	0.75	0.96	0.74
4/1/2019	0.77	0.95	0.77



7/1/2019	0.89	1.16	0.89
10/1/2019	0.99	1.25	0.98
1/1/2020	0.96	1.25	0.96
4/1/2020	0.73	1.14	0.72
7/1/2020	0.61	1.13	0.6
10/1/2020	0.53	1.16	0.52
1/1/2021	0.51	3.62	0.46
4/1/2021	0.44	3.5	0.39
7/1/2021	0.44	3.51	0.39
10/1/2021	0.47	3.54	0.43
1/1/2022	0.5	3.48	0.46

Exhibit A.4: Quarterly Percentages of 90 Days or More Delinquent Loans by Region

Quarter	Metropolitan	High-needs Rural	Other
1/1/2015	-	-	-
4/1/2015	0.02	0	0
7/1/2015	0.04	0.02	0.03
10/1/2015	0.08	0.25	0.09
1/1/2016	0.12	0.27	0.14
4/1/2016	0.15	0.3	0.13
7/1/2016	0.23	0.42	0.22
10/1/2016	0.28	0.47	0.27
1/1/2017	0.28	0.48	0.32
4/1/2017	0.29	0.59	0.34
7/1/2017	0.35	0.63	0.38
10/1/2017	0.41	0.7	0.44
1/1/2018	0.46	0.71	0.45
4/1/2018	0.5	0.77	0.46



7/1/2018	0.58	0.93	0.55
10/1/2018	0.66	1.07	0.68
1/1/2019	0.71	1.1	0.71
4/1/2019	0.74	1.08	0.74
7/1/2019	0.86	1.17	0.87
10/1/2019	0.95	1.29	0.99
1/1/2020	0.91	1.31	1.01
4/1/2020	0.67	1.11	0.78
7/1/2020	0.54	0.94	0.68
10/1/2020	0.47	0.89	0.6
1/1/2021	0.45	0.88	0.57
4/1/2021	0.39	0.81	0.5
7/1/2021	0.38	0.82	0.51
10/1/2021	0.41	0.89	0.55
1/1/2022	0.43	0.95	0.58

Source: Freddie Mac Calculations Using National Mortgage Database (version 18)

Exhibit A5: Coefficient Estimates from The Estimation of Equation (1)

Variable Names	(1)	(2)
Manufactured Home (MH)	-0.262**	-0.566**
	(0.13)	(0.29)
Covid	1.256***	2.137***
	(0.01)	(0.03)
MH During Covid	-0.316**	-0.725***
	(0.13)	(0.28)
High-Needs Rural	-0.0452	-0.0354
	(0.04)	(0.09)
Other Rural	0.000341	-0.0553



	(0.03)	(0.07)
High-Needs Rural During Covid	0.0037	-0.0306
	(0.04)	(0.09)
Other Rural During Covid	-0.0971***	-0.124*
	(0.03)	(0.07)
High-Needs Rural & MH & Pre-Covid	-0.312	-1.439**
	(0.24)	(0.57)
MH & High-Needs Rural & During Covid	-0.302***	-0.844***
	(0.06)	(0.22)
Other Rural & MH & Pre-Covid	-0.284	-0.521
	(0.20)	(0.43)
MH & Other Rural & During Covid	0.06	0.106
	(0.04)	(0.15)
Borrower Age	-0.00252***	-0.00567***
	(0.00)	(0.00)
Black	0.176***	0.346***
	(0.01)	(0.02)
American Indian Only	0.0281	0.0158
	(0.03)	(0.10)
Asian Only	0.127***	0.244***
	(0.01)	(0.04)
Native Hawaiian/Pacific Islander	0.0951***	0.244***
	(0.03)	(0.09)
2 Races/non-Black	0.0115	0.0272
	(0.01)	(0.05)
2 Races/one Black	0.0849***	0.190*
	(0.03)	(0.11)



Loan Amount	1.85e-07***	3.65e-07***
	(0.00)	(0.00)
Refinance	-0.130***	-0.285***
	(0.01)	(0.02)
Add/Remove Borrowers	-0.0758***	-0.153***
	(0.01)	(0.03)
New Mortgage/None Before	-0.0105	-0.0214
	(0.01)	(0.04)
Income	9.09e-08***	2.61e-07***
	(0.00)	(0.00)
Interest	0.179***	0.423***
	(0.00)	(0.01)
Loan to Value Ratio	0.00409***	0.00890***
	(0.00)	(0.00)
Debt to Income Ratio	0.00733***	0.0170***
	(0.00)	(0.00)
Female	-0.0270***	-0.0575***
	(0.00)	(0.01)
Credit Score	-0.00232***	-0.00490***
	(0.00)	(0.00)
First Time Homebuyer	-0.0257***	-0.0725***
	(0.01)	(0.02)
FNMA	0.302***	0.605***
	(0.01)	(0.05)
FHLMC	0.196***	0.407***
	(0.01)	(0.05)
FHLBank	-0.228***	-0.452***
	(0.04)	(0.14)



HOEPA Loan	-0.625***	-1.512*
	(0.19)	(0.81)
Interest Only	-0.534***	-0.966***
	(0.09)	(0.28)
FHA Insured	0.500***	1.072***
	(0.01)	(0.05)
VA Guaranteed	0.377***	0.805***
	(0.01)	(0.05)
FSA/RHS Insured	0.463***	1.030***
	(0.02)	(0.06)
Owner-Occupied	0.0828***	0.111**
	(0.02)	(0.05)
PTI	0.00618***	0.0124***
	(0.00)	(0.00)
Term	0.00123***	0.00221***
	(0.00)	(0.00)

Exhibit A6: Marginal Effects from the Estimation of Equation 1, with Pooled Probit

Variable	Average Marginal Effects
MH	-0.00754***
	(0.00)
Covid	0.0135***
	(0.00)
High-Needs Rural	-0.00100***
	(0.00)
Other Rural	-0.00194***
	(0.00)
Borrower Age	-5.54e-05***



	(3.74E-06)
Black	0.00438***
	(0.00)
American Indian Only	0.000599
	(0.00)
Asian Only	0.00298***
	(0.00)
Native Hawaiian/Pacific Islander	0.00217***
	(0.00)
2 Races/non-Black	0.00024
	(0.00)
2 Races/one Black	0.00192***
	(0.00)
Loan Amount	4.07e-09***
	(6.43E-10)
Refinance	-0.00274***
	(0.00)
Add/Remove Borrowers	-0.00169***
	(0.00)
New Mortgage/None Before	-0.00025
	(0.00)
Income	2.00e-09***
	(4.33E-)
Interest	0.00393***
	(6.30E-05)
Loan to Value Ratio	9.00e-05***
	(3.63E-06)
Debt to Income Ratio	0.000161***
	(4.80E-06)



Female	-0.000593***
	(8.63E-05)
Credit Score	-5.11e-05***
	(7.57E-07)
First Time Homebuyer	-0.000565***
	(0.00)
FNMA	0.00755***
	(0.00)
FHLMC	0.00440***
	(0.00)
FHLBank	-0.00334***
	(0.00)
HOEPA Loan	-0.00753***
	-0.00101
Interest Only	-0.00699***
	-0.000619
FHA Insured	0.0126***
	-0.000385
VA Guaranteed	0.00823***
	-0.000346
FSA/RHS Insured	0.0112***
	-0.000501
Owner-Occupied	0.00168***
	(0.00028)
PTI	0.000136***
	(5.35E-06)
Term	(2.71e-05)***
	(1.30E-06)

Standard errors in parentheses



*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

MH: Manufactured home loan

HNR: loan is located in high needs rural areas

Sample Size: 4,994,801

Exhibit A.7: Coefficient Estimates from the Estimation of Equation (2), with Pooled Probit

Variables	Coefficient Estimates
MH	-0.416***
	(0.08)
Covid	0.0526***
	(0.01)
MH during Covid	0.0047
	(0.08)
High-Needs Rural	-0.0459**
	(0.02)
Other Rural	-0.0370***
	(0.01)
High-Needs Rural During Covid	0.0359*
	(0.02)
Other Rural during Covid	0.0745***
	(0.02)
MH & HNR & Pre-Covid	-0.608***
	(0.15)
MH & HNR & Covid	-0.344***
	(0.07)
Other Rural & MH & Pre Covid	-0.109
	(0.10)



Other Rural & MH & Covid	0.0333
	(0.05)
Borrower Age	0.00114***
	(0.00)
Black	0.0860***
	(0.01)
American Indian Only	0.0571*
	(0.03)
Asian Only	-0.0508**
	(0.02)
Native Hawaiian/Pacific Islander	0.175***
	(0.03)
2 Races/non-Black	-0.104***
	(0.03)
2 Races/one Black	0.103***
	(0.04)
Loan Amount	3.91e-08***
	(0.00)
Refinance	-0.137***
	(0.01)
Add/Remove Borrowers	-0.0547***
	(0.01)
New Mortgage/None Before	-0.0751***
	(0.01)
Income	8.92e-08***
	(0.00)
Interest	0.173***
	(0.00)
Loan to Value Ratio	0.00403***



	(0.00)
Debt to Income Ratio	0.00138***
	(0.00)
Female	-0.0767***
	(0.01)
Credit Score	-0.00442***
	(0.00)
First Time Homebuyer	0.00885
	(0.01)
FNMA	0.210***
	(0.02)
FHLMC	0.204***
	(0.02)
FHLBank	0.0147
	(0.05)
HOEPA Loan	-0.846**
	(0.34)
Interest Only	-0.129
	(0.09)
FHA Insured	0.552***
	(0.02)
VA Guaranteed	0.573***
	(0.02)
FSA/RHS Insured	0.527***
	(0.02)
Owner-Occupied	-0.0461**
	(0.02)
PTI	0.00958***
	(0.00)



Term	0.000710***
	(0.00)

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

MH: Manufactured home loan

HNR: loan is located in high needs rural areas

Sample Size: 4,856,289.

Exhibit A.8: Average Marginal Effects from the Estimation of Equation (2)

Variables	Average Marginal Effects
MH	-0.00292***
	(0.00)
Covid	0.000720***
	(0.00)
High-Needs Rural	-0.000303***
	(0.00)
Other Rural	0.000158**
	(0.00)
Borrower Age	1.17e-05***
	(0.00)
Black	0.000943***
	(0.00)
American Indian Only	0.000605
	(0.00)
Asian Only	-0.000476**
	(0.00)
Native Hawaiian/Pacific Islander	0.00212***



	(0.00)
2 Races/non-Black	-0.000915***
	(0.00)
2 Races/one Black	0.00115**
	(0.00)
Loan Amount	4.01e-10***
	(0.00)
Refinance	-0.00132***
	(0.00)
Add/Remove Borrowers	-0.000576***
	(0.00)
New Mortgage/None Before	-0.000773***
	(0.00)
Income	9.13e-10***
	(0.00)
Interest	0.00177***
	(0.00)
Loan to Value Ratio	4.12e-05***
	(0.00)
Debt to Income Ratio	1.41e-05***
	(0.00)
Female	-0.000775***
	(0.00)
Credit Score	-4.52e-05***
	(0.00)
First Time Homebuyer	9.05E-05
	(0.00)
FNMA	0.00251***
	(0.00)



FHLMC	0.00242***
	(0.00)
FHLBank	0.00014
	(0.00)
HOEPA Loan	-0.00365***
	(0.00)
Interest Only	-0.00115
	(0.00)
FHA Insured	0.00538***
	(0.00)
VA Guaranteed	0.00577***
	(0.00)
FSA/RHS Insured	0.00496***
	(0.00)
Owner-Occupied	-0.000497*
	(0.00)
PTI	9.81e-05***
	(0.00)
Term	7.27e-06***
	(0.00)

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

MH: Manufactured home loan

HNR: loan is located in high needs rural areas

Sample Size: 4,856,289.