



Property Insurance Affordability

How Rising Costs Burden Mortgage Borrowers

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Executive Summary

Growing property risk is casting a shadow over the American dream of homeownership. Insurance products such as standard homeowner's insurance, flood insurance, fire insurance, and other specialized lines are a financial first line of defense, protecting homeowners and the financial institutions who lend to them from these mounting risks. But the rising cost of insurance is threatening the ability of would-be buyers to attain homeownership and, increasingly, the ability of existing homeowners to sustain it. And rising costs are a growing concern for entities who hold and manage mortgage credit risk, including lenders and servicers and the federally backed agencies who guarantee mortgage securities (Beckett 2021).¹

Homeownership has long been the primary pathway for building financial security and opportunity in the United States, yet it is becoming less affordable. Insurance adds another cost pressure. If households cannot afford to adequately protect their most significant asset, the consequences extend beyond individual families to communities and, more broadly, to the future of housing and the finance system that it depends upon.

Stakeholders (e.g., households, communities, lenders, insurance companies, and government-related housing agencies)² need to work together to forge solutions. For these solutions to be robust and effective, they must center the most burdened people and communities. Using a unique loan-level database that captures insurance coverage and costs along with key sociodemographic and geographic information, this report explores three questions:

- How can we meaningfully measure insurance cost burden?
- Where and for whom are insurance cost burdens greatest?
- What factors relate to high insurance cost burdens?

Key Findings

We define insurance cost burden as monthly insurance premiums for all coverage types shown in the data (e.g., homeowner's, flood, wind, and earthquake insurance) as a share of monthly household income at loan origination. We establish thresholds of 3 percent for cost burden and 5 percent for severe cost burden, paralleling traditional housing affordability frameworks. Whether these premium levels

represent burdens depends upon the household's overall housing and debt burdens, but this metric is useful for comparison and benchmarking as a stand-alone indicator and reveals the following findings:

- **Insurance cost burdens have risen.** Measured as a share of income at origination, insurance premiums rose from 1.87 percent on loans made in 2018 to 2.27 percent on those originated in 2024. The share of new mortgages where insurance premiums exceeded 3 percent increased from 10.5 percent in 2018 to 16.2 percent in 2024.
- **Where you live increasingly matters.** Borrowers in high-hazard-risk areas face burdens nearly a full percentage point higher than borrowers in low-risk areas, and this gap widened between 2018 and 2024. Nearly one in four borrowers in high-risk tracts were cost burdened in 2024, compared with one in eight in low-risk tracts. Gulf Coast and central plains metropolitan areas consistently rank highest for burden prevalence.
- **Low-income borrowers face a double burden.** Low-income borrowers pay higher insurance rates per dollar of home value—borrowers earning above 120 percent of the area median income (AMI) pay approximately \$2.10 less per \$1,000 of home value than borrowers earning below 50 percent of the AMI—and they have less income to absorb those higher costs. Income is the strongest predictor of insurance cost burden. By 2024, more than 40 percent of borrowers earning below 50 percent of the AMI met the definition of cost burdened, including nearly 14 percent being severely cost burdened.
- **Insurance cost burdens are highest for borrowers facing mortgage barriers.** Borrowers with low credit scores, high debt-to-income (DTI) ratios, and lower incomes, as well as Black borrowers and Federal Housing Administration (FHA) borrowers, are more likely than other borrowers to be insurance cost burdened. Importantly, when using regression analysis to explore the factors related to these outcomes, we find that neighborhood racial characteristics did not correlate with insurance cost burden, though being in a low-income tract did. Being an FHA borrower with a low home value increased the likelihood of being cost burdened, but FHA borrowers with high home values were actually less likely than conventional borrowers to be cost burdened. Credit score remained significant in the regression models, as predicted by prior research. DTI ratios also remained a predictor of insurance cost burden, confirming that borrowers with lower overall housing affordability are at greater risk of insurance unaffordability.

Our findings underscore that insurance cost burden is not simply related to hazard risk. It reflects a complex interaction of borrower financial characteristics, property and neighborhood attributes, and

geographic market conditions. Through these interactions, the burden falls most heavily on lower-income households, borrowers with constrained financial capacity, and communities exposed to hazards.

Especially concerning is that many factors that correlate with higher insurance burdens are also factors that determine who gets a mortgage and on what terms. As such, insurance underwriting and pricing may be compounding barriers to homeownership affordability for households who are income and credit constrained. It is incumbent upon the housing finance and insurance sectors to work together and focus on the households and communities at the eye of this storm, instead of weighing these households down from both sides.

Importantly, insurance costs are an indicator of risk and can serve as a relatable signal for homeowners about the potential costs associated with expected disaster losses and repairs. Policymakers should also heed this signal. To the extent that a high insurance cost burden indicates economic vulnerability to hazards, policymakers should take steps to mitigate the underlying risks as they consider how these risks should be pooled and distributed through insurance and other mechanisms.

At the end of this report, we illustrate how further exploration of these data can inform these considerations.

1. Background and Literature Review

Trends in Homeowner's Insurance Markets

Property insurance markets across the US are experiencing unprecedented stress from escalating hazard risks and costs. Between 2012 and 2021, weather-related disasters cost the US at least \$1 trillion in damages (You and Kousky 2024). The Joint Center for Housing Studies of Harvard University (2024, 2025) reported a record-high \$28 billion in weather and climate disasters in 2023 and \$27 billion in 2024. As property damage costs climb, insurers are raising premiums and even leaving some markets entirely (GAO 2026). From 2021 to 2024, virtually all zip codes saw premiums rise (Cornelissen et al. 2025), and increases are predicted to continue.³ In this section, we summarize evidence on the drivers and implications of these trends.

Interaction with Mortgage Markets

Although a growing number of homeowners are uninsured (Cornelissen et al. 2024), all mortgage borrowers are required to carry appropriate hazard insurance. Property insurance historically received little policy intervention attention from the housing finance system because it was a stable and small part of the housing payment. Today, increasing volatility in property risk and insurance, combined with the fact that coverage and costs can change annually, are spilling over into mortgage and housing markets. Beginning in 2018, insurance costs started to climb steadily as a share of monthly housing payments, from a typical level of 10 percent to 14 percent in 2025.⁴

Unlike mortgage principal and interest (P&I) payments, which are fixed over the life of a fixed-rate loan, insurance premiums are subject to annual adjustments and can increase substantially over short periods. And even if the borrower's income also grows, increases in insurance costs, property taxes, and homeowner's association dues all erode one of the fundamental benefits of the long-term fixed-rate mortgage. And for would-be homebuyers, the higher this ratio is for new loans, the less house they can afford. These costs could put homeownership out of reach altogether for would-be homeowners at the margin.

Increasing insurance costs have also been found to reduce property values (Ge, Lam, et al. 2025; Keys and Mulder 2024) and to increase mortgage delinquency, especially for borrowers with high DTI

ratios or loan-to-value (LTV) ratios at origination (Ge, Johnson, et al. 2025) and for borrowers with less financial capacity to relocate following large premium increases (Ge, Johnson, et al. 2024). Ge and coauthors⁵ estimate that a predicted average 29.4 percent increase in premiums by 2055 will lead to more than 200,000 additional mortgages experiencing delinquency per year.

These findings show that different borrowers respond differently to insurance costs. Our new data enable us to further explore how mortgage borrowers and, by extension, aspiring homeowners experience insurance costs and for whom they pose a burden.

Rising Damages and Claims Costs

Premium increases from 2019 to 2024 are associated with higher risks from disasters coupled with higher costs arising from those disasters (GAO 2026). Blonz and coauthors (2026) show that expected annual losses from disasters are passed into insurance premiums 55 cents per dollar, on average, with disaster risk composing an estimated quarter to one-third of insurance costs, a share that the authors expect will only grow. Locations experiencing catastrophic disaster risk have seen a sharp rise in reinsurance rates (Keys and Mulder 2024). Smaller but increasingly frequent weather events, such as severe convective storms, are driving up losses in places previously not considered exposed to disasters.⁶ Legal and litigation-related costs further exacerbate losses (Hausman et al. 2025).

The rising costs of materials and labor for rebuilding are a major contributor to increased losses and thus premiums (Keys and Mulder 2024). Higher premiums absorb a larger share of household budgets, especially for low-income households. Construction costs reached a record 64.4 percent of average new home prices in 2024, up from 55.6 percent in 2017, driven by labor and material costs.⁷

Insurance Costs Increasingly Vary by Borrower Credit Score

Beyond disaster risk, several factors correlate with insurance costs, some of them less obviously related to risk of loss. Research consistently finds that borrowers with low credit scores pay higher premiums, after controlling for disaster risk, and that credit scores can be a bigger driver of premiums than disaster risk. In other words, borrowers with low credit pay more for the same insurance on the same property than borrowers with better credit. Birss and coauthors (2025), analyzing “test quotes,” find that where credit score-based insurance pricing is allowed, quotes for consumers with low credit scores were nearly double, on average, than for otherwise similar borrowers within the same zip code and that the credit score factor was often larger than the factor of being in a high-disaster-risk area versus a low-disaster-risk area. Blonz and coauthors (2026) find that credit scores affect pricing to a similar degree as

disaster risk, and this difference is not explained by proxies for property condition or property-level measures of average annual loss. Moreover, the authors find this gap widened from 2015 through 2024. They do find evidence that in zip codes where the average borrower credit score is low, borrowers tend to file more, if smaller, claims and that this explains 19 percent of the pricing differential between borrowers with the highest and the lowest credit scores. The authors suggest these claim filing behaviors are likely attributable to lower access to savings and credit among borrowers with low credit scores. Importantly, the authors note that credit scores affect both insurance and mortgage pricing to a similar degree, which exacerbates cost burdens for less financially secure households and likely decreases their ability to qualify for a mortgage (and increases financial precarity among households that do qualify).

State Regulations Matter

State of residence also affects insurance costs. Different state regulatory regimes and strategies result in different outcomes for insurers and insured homeowners (GAO 2026). For example, California has sought to keep insurance affordable,⁸ though this has led some insurers to withdraw. Insurance pricing criteria can vary by state too. Seven states limit the use of credit scores in pricing insurance.⁹ In states that fully ban using credit scores for hazard insurance pricing, the credit premium gap between borrowers with the highest and the lowest credit scores is cut roughly in half.¹⁰ A natural experiment created by a temporary ban on the use of credit scores in insurance pricing in Washington state resulted in a corresponding 70 percent reduction in this gap, which returned to previous levels once the ban ended (Blonz et al. 2026). Alabama, which offers grants to encourage resilient roofing improvements, requires providers to lower insurance premiums by at least 20 percent for homeowners who improve their roofing to be more climate resilient.¹¹ Additionally, most states offer their own mechanisms to provide insurance of last resort (Currie et al. 2025), further leading to variation in insurance costs and attainability between states.

A Disproportionate Burden on Low-Income Households and Households of Color

The insurance burden also seems to weigh heavier on borrowers living in lower-income zip codes, who spend a higher share of their incomes on insurance (Keys and Mulder 2024). Using American Housing Survey data, Neal, Mehrotra and coauthors (2024a) find that low-income homeowners also pay more than high-income borrowers for homeowner's insurance as a function of their home price and that low-income borrowers in neighborhoods with low climate risk pay higher premiums as a share of their home price than high-income homeowners in neighborhoods with high climate risk.

Because of their lower average credit scores and persistent structural barriers, Hispanic and Black homeowners are more likely than white homeowners to be affected by premium increases (Briss et al. 2025).

This report does not study owners who own their homes but have no mortgage, but it is not surprising that uninsured homeowners tend to be disproportionately low income and are more likely to be Black or Hispanic and, among households of color, to be older (Cornelissen et al. 2025). Similarly, Neal, Mehrotra, and coauthors (2024a) report that low-income homeowners in neighborhoods with high climate risk are most likely to report having no homeowner's insurance (nearly 30 percent).

Factors that relate to the property itself—such as property age, home size, roof age, home material, and property condition—can also affect the likelihood and amount of damage, the cost to repair that damage, and the cost and availability of insurance. When Hurricane Sally hit Alabama, loss ratios on homes with FORTIFIED¹² roofs were no more than half of ratios among homes with conventional roofs (Alabama Department of Insurance and Center for Risk Research 2025).

Separate research finds that homeowners with lower incomes who are Black (Neal, Zinn, et al. 2024) or Hispanic (Neal, Mehrotra, et al. 2024b) are more likely to live in properties that are inadequate, suggesting property characteristics may drive higher insurance costs for these households. On average, these households also have lower credit scores, which may translate to higher insurance premiums. Although these factors are likely to compound, Blonz and coauthors (2026) report that property characteristics did not explain credit score-related surcharges.

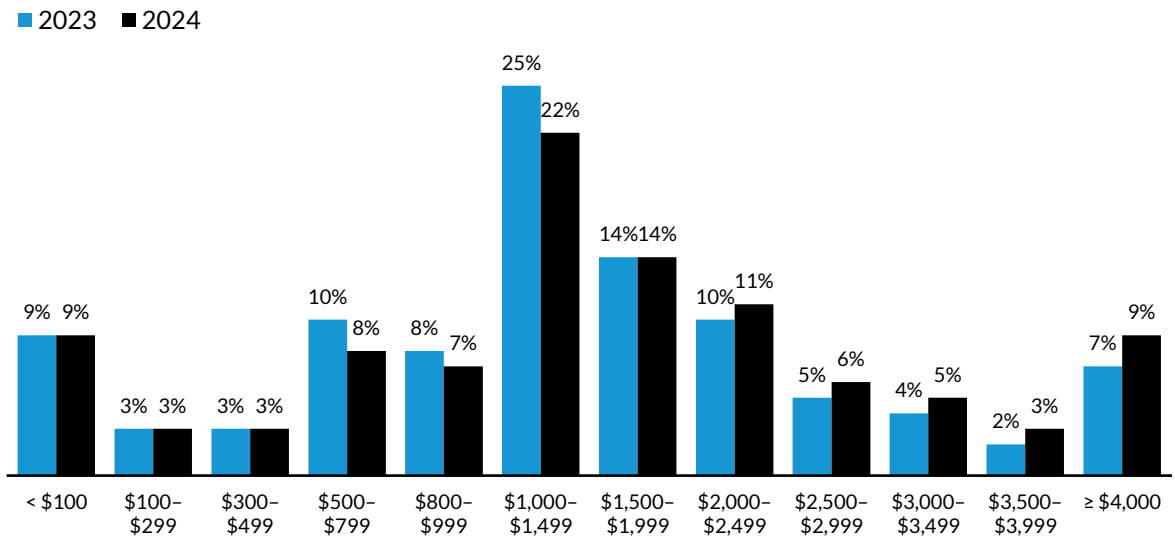
Further compounding these factors, households with fewer resources may also live in areas where higher risk of exposure makes property values more affordable. Hispanic households tend to be more concentrated in geographies with higher disaster risk (22.8 percent of Hispanic homeowners versus 16.1 percent of all homeowners) (Zhu et al. 2025). Looking at riverine flooding, Zhu and coauthors (2024) found that a much higher share of low-to-moderate-income neighborhoods are at very high risk of loss when factoring in community-level indicators of share of total value at risk, social vulnerability, and resilience. Conversely, some communities have invested in protecting whole areas. In Stockton, California, for example, a floodgate was built along the San Joaquin Valley, which will help lower flood insurance costs for all residents.¹³

Taken together, this evidence suggests that what one pays for insurance is the result of a complex interaction of factors beyond simple hazard risk, including characteristics of the individual borrower and their home, neighborhood- and community-based factors, and the regulatory environment of the state in which they live.

Definitions of Insurance Burden

To connect homeownership affordability and sustainability challenges to insurance costs, we need a definition of burden that shows how all these factors interact with each other and household capacity. Absolute premium is one indication of insurance cost burden, and an increasing number of homeowners report paying \$2,000 per year or more, with a large jump in those paying more than \$4,000 (figure 1.1).

FIGURE 1.1
Share of Borrowers, by Yearly Insurance Costs



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Source: US Census Bureau.

But absolute premium is not necessarily an indication of burden because a borrower could pay a relatively high insurance premium but have an affordable overall payment. Another metric is insurance cost as a share of total payment. Cotality, a data and analytics provider, reports that insurance typically accounts for 9 percent of a borrower’s payment.¹⁴ Blonz and coauthors (2026) calculate insurance burden using costs of insurance relative to base P&I (which is less than the total payment) and find insurance costs averaged 15 percent of P&I in 2024. Although useful for comparison, this metric does not convey whether the insurance payment is a burden for the household. For example, the insurance payment could be a high share of P&I while the P&I payment could be low.

For purposes of this report, it is important to place insurance burden within the context of overall housing cost burden. Households are considered housing cost burdened if their monthly housing payments exceed 30 percent of their monthly income, and households are considered severely cost

burdened if payments exceed 50 percent of income. According to 2023 American Community Survey data, 18.8 million homeownership households were housing cost burdened. Looking at Harris County, Texas, McCargo (2025) finds that low-to-moderate-income (LMI) households, who are more cost burdened by their P&I, also pay a much greater share of their income for homeowner's and flood insurance (5.1 percent) compared with high-income households (2.1 percent). And Ge, Johnson, and coauthors (2025) note that insurance premium increases are more likely to predict delinquency when a borrower's origination DTI ratio is high.

To guide policymakers in addressing flood insurance unaffordability, FEMA (2018) examined three potential concepts for targeting assistance or subsidy based on whether (1) a household's income falls below a certain level, (2) the cost of flood insurance exceeds a certain share of the household's income, or (3) the household's overall housing cost burden (including flood insurance) exceeds a certain share of the household's income. Notably, the report did not specify what these thresholds should be.

We measure insurance premiums as a share of income and propose thresholds corresponding to 10 percent of the thresholds established for housing cost burden. A limitation of this metric is that the overall housing payment may not actually burden that household, even if insurance premiums exceed 5 percent of income. That said, this metric is an effective benchmarking tool, captures how well a household's income can absorb insurance costs, and may be a signal of that household's financial vulnerability to hazard-related losses.

2. Data and Measurement

Data Sources and Sample Construction

This study builds on an emerging body of research that uses loan-level data that have become available through mortgage servicers' reporting of insurance coverage and escrow payments (Keys and Mulder 2024; Blonz et al. 2026; Ge, Johnson, et al. 2025).

The analysis in this report is based primarily on a novel dataset that merges three loan-level data sets: Intercontinental Exchange (ICE) Mortgage Data and Analytics' McDash data, an insurance module to the McDash data, and Home Mortgage Disclosure Act (HMDA) data. McDash provides monthly loan performance information and covers approximately 60 percent of outstanding mortgages. The insurance module provides loan-level information on key insurance information collected from servicers, including premiums, deductibles, expiration dates, and coverage amounts, by insurance type (e.g., flood or earthquake). Insurance data are available on approximately 60 percent of the loans in the McDash mortgage database. For our insurance dataset, we remove condominiums (because the data for many condos relates to the entire project's master policy rather than to individual units). We also followed methods employed in existing literature (Blonz et al. 2026) by removing loans where the primary policy was not escrowed.

HMDA data, from a public mortgage origination dataset, include borrower demographic information, such as income, gender, race or ethnicity, and census tract. Income data, which are the key to cost burden analysis, are available only from HMDA data, meaning we know income only at origination. For our cost burden analysis, we structure our data by origination year for loans originated from 2018 to 2024.

We merge HMDA origination data with the first observation of the matching loan in the McDash dataset to create a dataset of 18 million loans with complete insurance and borrower demographic information at origination. The data merging process is described in the appendix. The merged dataset captures between 19 and 31 percent of total HMDA mortgage market volume, depending on the year. The number of loans in each origination vintage varies, reflecting both market conditions and data availability. The peak occurred in 2020 and 2021, driven by the large number of refinance loans originated. The decline in originations from 2022 to 2024 corresponds with rising interest rates and reduced mortgage origination activity, though the sample sizes remain substantial for analysis purposes.

We also append data from the Federal Emergency Management Agency’s (FEMA’s) National Risk Index (NRI). For each census tract, the NRI produces a composite risk score that reflects both the likelihood and potential consequences of hazard events. Tracts are classified into risk categories—ranging from very low to very high—based on their relative risk compared with other tracts nationwide. We merged NRI data with our loan-level dataset using census tract identifiers, assigning each loan the risk classification of its corresponding tract.

Understanding Insurance Costs

Table 2.1 presents summary statistics for insurance costs at origination by vintage year. The data reveal several notable trends over the study period.

Average annual insurance premiums for newly originated mortgages, which includes all insurance types (e.g., primary homeowner’s, flood, and earthquake), rose steadily and substantially from \$1,270 in 2018 to \$1,856 in 2024—a cumulative increase of 46.1 percent, with the steepest increase occurring between 2023 and 2024. Even while premiums rose, homeowners took on substantial increases in out-of-pocket exposure through higher deductibles. Average deductibles increased 48.6 percent from \$1,552 in 2018 to \$2,306 in 2024.

TABLE 2.1
Insurance Costs at Origination, by Vintage Year

Vintage year	Count of loans	Annual premium (average)	Deductible (average)	Premium per \$1,000 property value (median)	Property value (average)	Monthly P&I (median)	Insurance share of P&I
2018	2,038,710	\$1,270	\$1,552	\$4.07	\$311,276	\$1,062	13.04%
2019	2,644,429	\$1,327	\$1,622	\$3.84	\$338,017	\$1,209	11.94%
2020	4,358,207	\$1,419	\$1,690	\$3.63	\$370,599	\$1,291	11.34%
2021	4,569,621	\$1,528	\$1,709	\$3.67	\$408,112	\$1,338	12.09%
2022	2,035,688	\$1,656	\$1,875	\$3.91	\$422,232	\$1,679	10.81%
2023	1,046,157	\$1,678	\$2,081	\$4.21	\$390,469	\$1,959	9.27%
2024	976,663	\$1,856	\$2,306	\$4.43	\$398,181	\$1,992	10.06%

Source: Property values are obtained from Home Mortgage Disclosure Act data.

Notes: P&I = principal and interest. Annual premiums include all insurance types (e.g., primary homeowner’s, flood, and earthquake). Premium per \$1,000 is calculated using median values to reduce the influence of outliers.

When normalized by reported property value (obtained from HMDA data), the insurance costs show a more complex pattern. The cost per \$1,000 of property value, or the effective insurance rate, rose just 9 percent from \$4.07 in 2018 to \$4.43 in 2024. This finding suggests the increase in premiums

was largely driven by higher home values. But over the past four years, insurance costs rose 30.9 percent, substantially faster than the value of the assets being insured (7.5 percent). This divergence suggests that recent insurance repricing is not simply tracking property values. Macro factors at play include increased risks and sharply higher costs of rebuilding materials.¹⁵

Insurance as a share of the P&I payment contextualizes premiums within the total housing payment structure. This share declined from 2018 to 2024 even though premiums rose, reflecting the sharp increase in mortgage payments driven by rising interest rates, which increased the P&I denominator faster than insurance costs rose.

Insurance costs and trends varied meaningfully by loan purpose. Refinance borrowers, including both streamline refinance and cash-out refinance, tended to pay higher premiums than purchase borrowers, particularly in years that were not favorable for refinances. The gap reaches \$330 to \$418 per year in 2024. Moreover, refinance borrowers average higher insurance rates per dollar of home value. In 2024, streamline and cash-out refinance borrowers paid \$5.40 to \$5.70 per \$1,000 of home value, and purchase borrowers paid \$4.60. We include refinance in the following regression models to control for its impact on insurance affordability. Deeper analysis of the relationship between loan purpose and insurance costs is planned in future research.

These insurance cost measures describe what borrowers pay and how insurance fits within housing costs, but they do not directly reflect affordability. To assess whether insurance costs pose a burden, we examine premiums relative to household income in the next section.

Measuring Insurance Burden

Insurance premiums can be evaluated relative to income using the same conceptual framework as housing cost burdens: monthly insurance premium as a share of monthly income. We define insurance cost burden thresholds that reflect both the established housing cost burden framework and the specific characteristics of insurance as a housing expense. Housing cost burden is conventionally defined as spending more than 30 percent of income on housing, with severe cost burden set at 50 percent of income. Because insurance typically represents about 10 percent of total mortgage payments, we apply that same proportional logic to derive insurance-specific thresholds:

- **Three percent of gross household income as the threshold for insurance cost burden.** At 3 percent of income, a household earning the median US income (\$75,000 a year) would pay

\$2,250 annually, or about \$188 monthly—likely a noticeable line item in the typical household budget, if not necessarily a crisis point.

- **Five percent of gross household income as the threshold for severe insurance cost burden.**
The 5 percent threshold identifies households facing more acute insurance affordability challenges. For a household earning \$75,000 a year, a 5 percent insurance burden represents \$3,750 annually, or more than \$300 monthly—a substantial expense that could significantly constrain household resources.

Insurance Cost Burden over Time

Table 2.2 presents the insurance cost burdens measured at loan origination across vintage years from 2018 through 2024. Although the median income of borrowers in 2024 was 23.5 percent higher than that of the 2018 cohort, average premiums rose 46 percent over this period. As a result, average insurance burden, measured by premium / income at origination, increased from 1.87 percent of income in 2018 to 2.27 percent in 2024—a 21 percent relative increase that brings the 2024 cohort substantially closer to our 3 percent cost burden threshold.

Table 2.2 also shows the share of mortgage borrowers with insurance cost burden and severe insurance cost burden at loan origination by vintage year. The percentage of borrowers paying more than 3 percent of income for insurance at origination increased from 10.5 percent in 2018 to 16.2 percent in 2024.

TABLE 2.2
Insurance Affordability Metrics, by Vintage Year

Vintage year	Average annual premium	Annual income (median)	Average premium share of income	Share burdened (paying > 3%)	Share severely burdened (paying > 5%)
2018	\$1,270	\$81,000	1.87%	10.5%	2.2%
2019	\$1,327	\$86,000	1.86%	10.8%	2.4%
2020	\$1,419	\$93,000	1.80%	10.2%	2.2%
2021	\$1,528	\$91,000	1.98%	13.1%	3.2%
2022	\$1,656	\$93,000	2.06%	15.1%	3.9%
2023	\$1,678	\$99,000	1.95%	13.3%	3.1%
2024	\$1,856	\$100,000	2.27%	16.2%	4.0%

Source: Income (at origination) is obtained from Home Mortgage Disclosure Act data.

Note: Annual premiums (at origination) include all insurance types (e.g., primary homeowner's, flood, and earthquake).

Who Carries Greater Insurance Cost Burdens?

Prior research illuminates several attributes that correlate with higher insurance costs or cost burdens. Our dataset allows us to investigate these and new factors at a granular level. We present descriptive statistics based on origination year for the years that mark the beginning and end points of our data, 2018 and 2024.

Disaster Risk

A primary driver of homeowner's insurance costs is exposure to hazards, which we measure by FEMA's NRI. We group tracts into three categories: high risk (including very high-risk and relatively high-risk tracts), moderate risk (relatively moderate-risk tracts), and low risk (including very low-risk and relatively low-risk tracts) (table 2.3).

TABLE 2.3

Insurance Affordability Metrics, by National Risk Index Risk Category

Risk	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
High	357,903	143,855	2.0%	2.4%	17.9%	24.1%	5.5%	7.5%
Moderate	506,680	227,509	1.8%	2.1%	13.6%	20.3%	3.3%	5.2%
Low	1,122,071	551,929	1.6%	1.8%	8.5%	12.5%	1.6%	2.6%

Source: Income (at origination) is obtained from Home Mortgage Disclosure Act data.

Note: Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

Affordability burden is strongly associated with hazard risk. For example, in 2024, borrowers in high-risk tracts dedicated 2.4 percent of their income to insurance premiums, while borrowers in low-risk tracts dedicated 1.8 percent. This gap translates directly into differences in cost burden prevalence: 24.1 percent of borrowers in high-risk tracts exceeded the 3 percent burden threshold, compared with 12.5 percent in low-risk tracts. The disparity is even more pronounced for severe cost burden: 7.5 percent of borrowers in high-risk tracts exceeded the 5 percent threshold, nearly three times the rate in low-risk tracts (2.6 percent).

Moreover, the affordability gap between high-risk and low-risk areas widened substantially between 2018 and 2024. In 2018, the share of cost-burdened borrowers in high-risk tracts exceeded that in low-risk tracts by 9.4 percentage points (17.9 percent versus 8.5 percent). By 2024, this gap had grown to 11.6 percentage points (24.1 percent versus 12.5 percent). Severe cost burden showed similar

divergence. The gap between high-risk and low-risk tracts grew from 3.9 percentage points in 2018 to 4.9 percentage points in 2024.

Borrower Characteristics

Credit Score

As identified by prior research, FICO score (obtained from the McDash data) has a strong impact on insurance affordability. Table 4 examines insurance affordability across borrowers grouped by FICO credit score categories, comparing 2018 and 2024 originations. We use the following categories: subprime scores (< 620), near-prime scores (620–659), prime scores (660–719), and superprime scores (≥ 720). As expected, insurance burden has a clear inverse relationship with credit score. In 2024, subprime borrowers faced a 2.45 percent cost burden, near-prime borrowers faced a 2.37 percent cost burden, prime borrowers faced a 2.19 percent cost burden, and superprime borrowers faced a 1.73 percent cost burden. Subprime borrowers experienced a 42 percent higher burden than superprime borrowers.

In 2024, 26.1 percent of subprime borrowers exceeded the 3 percent cost burden threshold, compared with 24.3 percent of near-prime borrowers, 20.5 percent of prime borrowers, and 12.3 percent of superprime borrowers (table 2.4). Subprime borrowers faced more than double the burden prevalence of superprime borrowers. Over time, subprime borrowers showed the steepest deterioration in cost burden prevalence. In 2024, more than one in four subprime borrowers were already cost burdened by insurance alone.

TABLE 2.4
Insurance Affordability Metrics, by FICO Score

FICO category	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
Subprime	38,846	38,871	2.06%	2.45%	16.1%	26.1%	4.1%	7.6%
Near prime	219,129	99,472	2.11%	2.37%	17.4%	24.3%	4.4%	6.5%
Prime	499,784	218,401	1.87%	2.19%	13.8%	20.5%	3.4%	5.1%
Superprime	1,000,289	509,905	1.52%	1.73%	8.6%	12.3%	2.0%	2.9%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Note: Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

Income

Income is a fundamental determinant of insurance affordability. The same dollar premium consumes a larger share of a low-income household's budget. To consider local market context, we categorize borrowers by their income relative to the AMI (table 2.5). This approach allows us to identify borrowers who are low income relative to their local housing market and who may therefore face affordability challenges regardless of their absolute income level.

TABLE 2.5
Insurance Affordability, by Borrower Income

Borrower income (as a share of the AMI)	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
≤ 50%	245,061	138,300	3.2%	3.3%	35.9%	40.9%	11.8%	13.5%
50–80%	354,522	187,835	2.1%	2.3%	18.1%	23.2%	3.7%	5.1%
80–120%	409,731	200,169	1.7%	1.9%	10.1%	14.0%	1.7%	2.6%
> 120%	977,348	401,761	1.2%	1.3%	3.6%	5.5%	0.5%	0.8%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Notes: AMI = area median income. Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

Not surprisingly, borrowers with low incomes relative to the AMI carried higher insurance cost burdens, though all categories saw a rise in the share of borrowers burdened or severely burdened. In 2024, borrowers earning up to 50 percent of the AMI dedicated 3.3 percent of their income to insurance, already exceeding the insurance cost burden threshold as a group, with more than 40 percent being insurance cost burdened and 13.5 percent being severely so. This suggests that for low-income homeowners, insurance is becoming a growing barrier to sustainable homeownership. In contrast, borrowers earning above 120 percent of the AMI dedicated 1.3 percent of their income to insurance—less than half the burden the lowest-income group faces—with less than 1 percent being severely insurance cost burdened.

Debt-to-Income Ratio

DTI ratio measures the share of gross monthly income committed to total debt payments. Higher DTI ratios indicate that borrowers have less discretionary income after meeting debt obligations, leaving them more vulnerable to any additional financial stress.

Table 2.6 examines insurance burdens by DTI category for 2018 versus 2024 originations. In 2024, low-DTI borrowers (ratios up to 36 percent) faced a 1.61 percent burden, mid-DTI borrowers (ratios from 36 to 43 percent) faced a 2.01 percent burden, and high-DTI borrowers (ratios above 43 percent)

faced a 2.18 percent burden. All DTI groups experienced substantial cost burden increases from 2018 to 2024. In 2024, 20.2 percent of high-DTI borrowers were insurance cost burdened, and 5.3 percent faced severe burden, exceeding 5 percent of income.

TABLE 2.6
Insurance Affordability Metrics, by DTI Ratio

DTI ratio	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
≤ 36%	751,327	299,372	1.42%	1.61%	7.0%	10.5%	1.4%	2.1%
36–43%	533,099	248,917	1.77%	2.01%	12.3%	17.5%	2.8%	4.4%
> 43%	591,865	333,588	2.03%	2.18%	16.5%	20.2%	4.4%	5.3%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Notes: DTI = debt-to-income. Premiums include all insurance types (e.g., primary homeowner’s, flood, and earthquake).

Borrower Race or Ethnicity

Homeownership has historically been a primary vehicle for wealth building, yet access to affordable homeownership has varied across racial and ethnic groups. Insurance affordability represents one component of overall housing costs that may contribute to differential experiences of homeownership. To examine whether insurance burden varies by race and ethnicity, we use loan-level borrower information reported in HMDA data (table 2.7).

TABLE 2.7
Insurance Affordability Metrics, by Race or Ethnicity

Race or ethnicity	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
Black	120,346	81,087	2.1%	2.3%	16.9%	21.9%	4.6%	6.3%
Hispanic	211,847	131,931	1.8%	1.9%	13.7%	14.8%	3.5%	3.3%
Asian	85,823	47,724	1.3%	1.3%	6.2%	6.0%	1.5%	1.4%
White	1,243,870	524,585	1.7%	2.0%	10.9%	16.7%	2.4%	4.0%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Note: Premiums include all insurance types (e.g., primary homeowner’s, flood, and earthquake).

In both 2018 and 2024, Black borrowers dedicated the highest share of income to insurance and were substantially more likely to be cost burdened than any other group. More than one in five Black borrowers who took out mortgages in 2024 were insurance cost burdened. Black borrowers, on average, tend to have, relative to other borrowers, lower credit scores, lower incomes, and other

correlates of higher cost burden, such as lower average home values or living in neighborhoods with older housing stock.

In 2024, white borrowers experienced the second-highest cost burden, while in 2018, Hispanic borrowers registered the second-highest burden. Asian borrowers carried the least insurance cost burden, and the share burdened remained steady between 2018 and 2024. The results for Hispanic borrowers are perhaps unexpected, as research shows that Hispanic households are disproportionately likely to live in areas with high exposure to disaster risk (Zhu et al. 2025), as are Asian households (Zhu et al. 2026). One partial explanation could be that California, despite its high exposure to hazards, does not stand out as a highly insurance-cost-burdened state (table 2.10).

Loan Characteristics

Loan Purpose

We examine how insurance burden relates to loan purpose (purchase versus refinance) and for owner-occupied homes versus investor or second homes in table 2.8. Because neither 2018 nor 2024 were strong refinance years, we include 2020 as well.

Investor and second-home borrowers were generally less burdened by premiums relative to income than owner-occupants were, likely because these borrowers have higher incomes. All categories experienced growth in insurance burden by all measures from 2018 to 2024.

The most noteworthy finding is the higher burden refinancing borrowers faced in 2018 and 2024, though these gaps shrunk in 2020, when refinancing conditions were favorable. In non-refinance years, refinancing owner-occupants showed substantially higher burden than any other category, followed by investor and second-home refinance borrowers. This could be because many refinances in 2018 and 2024 occurred to manage financial stress or to access equity, and these borrowers brought elevated insurance costs into their new loans. Deeper analysis is outside the scope of this report but should be explored further in future research.

TABLE 2.8

Insurance Affordability Metrics, by Loan Purpose

Purpose	Premium Share of Income			Share Burdened (Paying > 3%)			Share Severely Burdened (Paying > 5%)		
	2018	2020	2024	2018	2020	2024	2018	2020	2024
Owner (purchase)	1.61%	1.69%	1.77%	9.6%	11.3%	12.5%	1.9%	1.9%	2.3%
Owner (refinance)	1.99%	1.62%	2.53%	16.1%	9.9%	27.9%	4.4%	4.4%	8.9%
Investor or second home (purchase)	1.10%	1.04%	1.24%	4.4%	4.2%	5.2%	1.2%	1.2%	1.7%
Investor or second home (refinance)	1.34%	1.04%	2.06%	7.4%	4.1%	9.4%	2.3%	2.3%	3.4%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Note: Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

Loan Channel

Table 2.9 examines insurance affordability across three major loan types: conventional loans, FHA loans, and US Department of Veterans Affairs (VA) loans. FHA borrowers face higher insurance burdens than conventional borrowers, with VA borrowers slightly more burdened than conventional borrowers, and all loan types experiencing substantial volume decline from 2018 to 2024.

FHA loans typically go to first-time homebuyers with low incomes and small down payments. VA loans serve veterans and active-duty military members, who may have lower average incomes than conventional borrowers. FHA and VA loans allow higher DTI ratios than conventional lending, meaning borrowers may already be financially stretched.

TABLE 2.9

Insurance Affordability Metrics, by Loan Type

Loan type	Number of Loans		Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024	2018	2024
Conventional	1,420,737	605,354	1.61%	1.86%	10.3%	14.5%	2.5%	3.7%
FHA	374,173	234,752	2.06%	2.14%	16.0%	19.8%	3.8%	4.7%
VA	191,419	87,959	1.79%	2.05%	11.9%	18.2%	2.5%	4.1%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Notes: FHA = Federal Housing Administration; VA = US Department of Veterans Affairs. Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

By MSA

Differences in hazard exposure, state regulatory environments, insurer competition, and local construction costs all translate into meaningful variation in insurance affordability metrics. We looked at the 25 largest metropolitan statistical areas (MSAs) by population, comparing 2018 and 2024 originations across the various metrics of cost burden.

TABLE 2.10

Insurance Affordability, by Metropolitan Area

Ranked by share burdened in 2024

Metropolitan area	Premium Share of Income		Share Burdened (Paying > 3%)		Share Severely Burdened (Paying > 5%)	
	2018	2024	2018	2024	2018	2024
Miami-Fort Lauderdale	3.6%	3.4%	47.5%	43.8%	18.2%	16.3%
Houston	2.4%	2.5%	21.5%	27.7%	5.4%	7.4%
Tampa-St. Petersburg	2.5%	2.7%	25.8%	26.4%	8.5%	9.3%
Dallas-Fort Worth	2.2%	2.3%	18.0%	23.1%	3.5%	5.2%
Kansas City	2.2%	2.3%	20.0%	22.5%	3.2%	4.2%
St. Louis	2.1%	2.2%	16.0%	21.1%	3.1%	3.9%
Minneapolis-St. Paul	1.8%	2.1%	10.4%	18.7%	1.4%	2.6%
Atlanta	1.9%	2.0%	12.8%	16.0%	2.4%	3.5%
Indianapolis	1.9%	2.0%	13.6%	15.2%	2.4%	3.2%
Detroit	1.7%	1.9%	10.0%	14.5%	2.0%	3.5%
Denver	1.9%	2.0%	13.9%	13.6%	2.5%	3.9%
Chicago	1.4%	1.7%	5.3%	10.3%	1.0%	1.8%
Philadelphia	1.4%	1.6%	5.9%	9.1%	1.2%	2.0%
Charlotte	1.4%	1.5%	4.8%	7.5%	0.8%	1.4%
Baltimore	1.3%	1.5%	3.8%	6.9%	0.7%	1.0%
Riverside-San Bernardino	1.3%	1.4%	3.6%	5.5%	1.1%	1.4%
Phoenix	1.2%	1.2%	3.4%	5.1%	0.6%	1.1%
Boston	1.4%	1.3%	5.7%	4.9%	1.2%	0.9%
New York	1.3%	1.4%	4.7%	4.7%	1.2%	1.0%
Sacramento	1.1%	1.2%	2.5%	4.2%	0.7%	1.3%
Los Angeles	1.0%	1.6%	2.3%	4.0%	1.0%	1.5%
Washington, DC	1.1%	1.2%	2.1%	3.2%	0.5%	0.6%
Las Vegas	1.1%	1.0%	2.4%	2.7%	0.5%	0.5%
Portland	0.9%	1.0%	1.4%	2.1%	0.3%	0.5%
Seattle	1.0%	1.0%	1.6%	2.0%	0.4%	0.4%

Source: Income is obtained from Home Mortgage Disclosure Act data.

Note: Premiums include all insurance types (e.g., primary homeowner's, flood, and earthquake).

In 2024, nearly 44.0 percent of Miami borrowers exceeded the 3 percent cost burden threshold, more than 20 times the rate in Seattle (2.0 percent) or Portland (2.1 percent). The top five markets for highest cost burden prevalence are Miami, Houston, Tampa, Dallas, and Kansas City. These markets share exposure to significant hazard risk: hurricanes and flooding in Florida and Texas and severe storms and hail in the central plains.

Between 2018 and 2024, most markets experienced increases in cost burden prevalence. Minneapolis experienced the largest increase, rising from 10.4 percent to 18.7 percent, moving from a relatively low-burden market to the middle of the distribution. Houston saw the second-largest increase, with cost burden rising from 21.5 percent to 27.7 percent. Chicago, Dallas, and St. Louis also saw cost burden rise 5 to 6 percentage points. Los Angeles stands out among West Coast markets, with the share of burdened borrowers increasing from 2.3 percent to 4.0 percent, which may reflect wildfire risk repricing.

The descriptive data in the preceding section identifies which borrowers face higher insurance cost burdens but not why they do. Some of the correlated factors are expected contributors. Hazard risk and credit score are known to be insurance pricing factors, and income is a key factor in the cost-burden equation. But other factors need further unpacking. In the next section, we use regression analysis to reveal how borrower, property, neighborhood, and geographic attributes relate to these outcomes.

3. Model and Regression Results

Model Specifications

To identify the factors associated with homeowner's insurance affordability, we estimate a series of regression models. Our primary model examines insurance cost burden, measured as the monthly insurance premium as a share of monthly income (in basis points):

$$Burden_{ij} = \alpha + \beta^1 FICO_{ij} + \beta^2 X_{ij} + \gamma_j + \delta_t + \varepsilon_{ijt}$$

The dependent variable in this model measures insurance premiums as a percentage of gross household income (in basis points).

We then estimate three supplementary models to understand the mechanisms driving affordability differences: monthly premium in dollars, premium per \$1,000 of home value (the effective insurance rate), and premium as a share of the P&I payment.

$$Insurance_{ij} = \alpha + \beta^1 FICO_{ij} + \beta^2 LTV_{ij} + \beta^3 X_{ij} + \gamma_j + \delta_t + \varepsilon_{ijt}$$

where $Insurance_{ij}$ represents the insurance cost measure for loan i in MSA j .

All models include MSA fixed effects to control for regional market differences, allowing us to isolate within-market variation in insurance costs. The controls include FICO score categories, FHA or VA loan indicator, DTI categories, property value (log), disaster risk score, tract median housing age, LMI tract indicator, property purpose, and loan purpose. The LTV ratio is included in the insurance premium regression but excluded in the burden regression because the LTV ratio does not directly affect affordability burden.

TABLE 3.1

Dependent Variable: Monthly Insurance Premium / Monthly Income (Basis Points)

Variable	Estimate	Standard error	Significance
Credit score (ref.: subprime score)			
Near-prime score	0.46	0.69	
Prime score	-11.39	1.08	***
Superprime score	-16.11	1.22	***
Debt-to-income ratio (ref.: < 25%)			
25–33%	30.31	0.91	***
33–43%	55.03	1.58	***
> 43%	79.51	2.25	***
Loan type			
FHA or VA (ref.: conventional)	447.70	23.77	***
FHA or VA × property value (log)	-36.45	1.77	***
Property value (log)	-56.94	7.07	***
Geography			
LMI tract	13.99	3.36	***
Tract minority share	-1.26	9.47	
Tract median housing age	0.40	0.10	***
NRI risk score (0–1)	0.80	0.18	***
Other loan characteristics			
Second home or investment	-62.47	3.99	***
Streamline refinance	29.40	2.22	***
Cash-out refinance	52.43	2.95	***
Origination year (ref.: 2018)			
2019	2.45	1.04	*
2020	9.43	1.47	***
2021	27.09	2.50	***
2022	36.68	4.58	***
2023	27.35	5.49	***
2024	42.23	5.02	***

Source: Authors' calculations.

Notes: FHA = Federal Housing Administration; LMI = low- and moderate-income; NRI = National Risk Index; ref. = reference; VA = US Department of Veterans Affairs. Ordinary least squares estimation with metropolitan statistical area fixed effects.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Results

Below, we parse the results regarding the role of individual borrower factors, neighborhood and geographic factors (including NRI score), and loan purpose.

A note on interpreting these results: The dependent variable is monthly insurance premium as a share of monthly income, expressed in basis points. One basis point equals 0.01 percent, so 100 basis points equals 1 percent. For a borrower of a newly originated loan earning the 2024 average income of \$100,000 annually (\$8,333 monthly), each basis point represents approximately \$0.83 per month

contributed to the insurance premium. We use this “typical borrower” only to illustrate effects of the variables. These examples are not meant to be compared on an absolute basis.

Individual Factors

Overall, we find that even after controlling for NRI risk score and neighborhood property age, individual borrower characteristics are strongly and significantly correlated with insurance cost burden, which is higher for borrowers with low incomes, high DTI ratios, low credit scores, and low home values among FHA and VA borrowers.

Credit Score: A Significant Factor

As expected, credit score is associated with statistically significant differences in burden, though these effects are smaller than income or DTI effects once these are controlled for. Prime borrowers experienced burdens approximately 11 basis points lower than did subprime borrowers, while superprime borrowers saw burdens roughly 16 basis points lower. Near-prime borrowers showed no statistically significant difference from subprime borrowers. This strong effect is found after controlling for FHA borrowers, who tend to have lower credit scores than other segments.

For a 2024 median-income borrower, the credit score gap between subprime and superprime borrowers translates to approximately \$13 per month ($16 \text{ basis points} \times \$8,333 \div 10,000 = \$13$), or \$160 per year in additional burden for subprime borrowers.

The results also imply that low-income borrowers with low credit scores faced a compound disadvantage: They pay higher credit-risk-adjusted premiums and have lower incomes to absorb those premiums.

Debt-to-Income Ratio: Compounding Financial Stress

DTI ratio shows strong positive association with cost burden at origination. Borrowers with DTI ratios of 25 to 33 percent faced burdens approximately 30 basis points higher than did borrowers with DTI ratios below 25 percent. The effect intensifies at higher DTI levels: Borrowers with ratios between 33 and 43 percent experienced burdens roughly 55 basis points higher, while those with ratios above 43 percent faced burdens approximately 80 basis points higher. For a 2024 borrower earning the median income of \$100,000, a DTI ratio above 43 percent translates to approximately \$67 more per month ($80 \text{ basis points} \times \$8,333 \text{ monthly income} \div 10,000 = \67) dedicated to insurance relative to income compared with a low-DTI borrower. Over a year, this amounts to roughly \$800 in additional effective burden.

In the following section examining the components of burden, we see this difference is driven not by higher premiums per se but by income constraints, revealing how insurance costs can compound preexisting financial stress. Borrowers with elevated DTI ratios are already committing a large share of their income to housing debt. Every additional dollar of required insurance expense consumes a disproportionate share of their remaining financial capacity. Borrowers least able to absorb additional costs bear the heaviest relative burden, and would-be buyers at the margin might not qualify for a mortgage in the first place.

Property Values and FHA and VA Status: Owners of Less Expensive Homes Are More Burdened

Property value (logged) is negatively associated with insurance cost burden. This effect plays out within the FHA and VA loan channel as well. Our descriptive analysis shows that FHA and VA borrowers faced higher insurance burdens than conventional borrowers—2.14 percent of income versus 1.86 percent in 2024 (table 2.9). In the regression, we include an interaction between FHA and VA status and property value, given that FHA borrowers are concentrated at the lower end of the property value distribution and property value has a large impact on insurance premiums.

FHA and VA borrowers purchasing lower-value homes (e.g., \$150,000) faced insurance burdens approximately 13 basis points higher than otherwise identical conventional borrowers—about \$11 more per month ($447.70 - 36.45 \times (\ln(150,000) \times \$8,333 \div 10,000)$), or \$132 more per year relative to income. On the other hand, for FHA borrowers purchasing higher-value homes (e.g., \$400,000), the burden was approximately 23 basis points lower than for conventional borrowers, or about \$19 less per month, or \$228 less per year relative to income.

This pattern has important policy implications. FHA and VA loan programs are designed to expand homeownership access for underserved populations, including first-time buyers and low-income households who typically purchase at the low end of the market. These households may also bear a disproportionate insurance burden. In general, the very populations targeted for homeownership assistance face disproportionate insurance affordability challenges.

Geographic Factors: Risk, Neighborhood, and Place

Geographic variables reveal important patterns in insurance affordability. Interpreting these coefficients requires care, given that the model includes MSA fixed effects. We are examining how insurance burden varies across neighborhoods within the same metropolitan area, not across different cities or regions.

Neighborhood Hazard Risk: A Key Factor

The NRI risk score, which captures neighborhood-level exposure to hazards such as flood, fire, and severe weather on a 0–1 scale, is positively associated with insurance burden. Moving from the lowest-risk to the highest-risk neighborhoods within a metropolitan area increases burden by approximately 80 basis points. For a 2024 median-income borrower, this translates to roughly \$67 per month (80 basis points $\times$ \$8,333 $\div$ 10,000 = \$67), or \$800 per year in additional burden. Borrowers in hazard-prone neighborhoods dedicate nearly a full percentage point more of their income to insurance than otherwise similar borrowers in safer locations. As climate risks intensify, this geographic add-on is likely to grow.

Tract Sociodemographic Characteristics: Neighborhood Income Relates to Burden; Racial and Ethnic Composition Does Not

Borrowers in LMI census tracts experienced burdens approximately 14 basis points higher than those in higher-income tracts, about \$12 per month for a median-income borrower. This finding suggests that borrowers in economically disadvantaged neighborhoods face modestly elevated insurance burdens, possibly reflecting older housing stock, fewer insurance options, or other neighborhood characteristics that increase insurance costs.

The coefficient on tract minority population share is not statistically significant, indicating that after controlling for other factors (e.g., borrower attributes and property value) and tract-level variables (e.g., income and property age), neighborhood racial or ethnic composition does not independently predict insurance burden at origination within metropolitan areas.

Housing Age: Areas with Older Housing Face Higher Burden

Tract median housing age shows a significant positive association with insurance burden. Each additional year of median tract housing age increases burden by 0.4 basis points. For neighborhoods with housing stock averaging 50 years old (built around 1974), this housing age effect amounts to 20 basis points, or roughly \$17 per month (0.4 $\times$ 50 years $\times$ \$8,333 $\div$ 10,000 = \$17) compared with new construction. This reflects actuarial reality: Older homes have outdated electrical systems that increase fire risk, aging plumbing that increases water damage claims, and construction that may not meet current building codes for hazard resistance.

Loan Purpose Matters

Borrowers purchasing second homes or investment properties experienced lower burdens than primary residence purchasers. Insurance premiums on investment properties represent a small share of their buyers' elevated incomes.

Refinance borrowers experience higher burdens than purchase borrowers, with important differences by refinance type and origination year. Cash-out refinance borrowers are extracting equity, often during periods of financial stress, and may carry elevated insurance costs into their new loans. These gaps likely depend on refinancing conditions and bear further analysis, as we recommend for future research.

Burdens Are Growing over Time

Relative to the 2018 baseline, insurance burden showed little change in 2019 and 2020 (2 and 9 basis points, respectively). Beginning in 2021, however, burden increased approximately 27 basis points above baseline. The increase accelerated in 2022, reaching 37 basis points above baseline. After a modest decline in 2023, burden rose to approximately 42 basis points above baseline in 2024, the highest level observed. This pattern aligns with broader trends in the home insurance market.

The result is that borrowers taking out mortgages in 2024 faced insurance burdens approximately 25 basis points higher than in 2018, holding all other factors constant. This is likely to be roughly indicative of the experience of existing mortgage borrowers as well, as insurance premiums can be adjusted annually. For a median-income household in 2024, this translates to roughly \$35 more per month ($42 \times \$8,333 \div 10,000 = \35), or \$420 more per year in income dedicated to insurance.

Unpacking the Mechanisms Behind Affordability Disparities

The primary model identifies who faces higher insurance cost burdens. To understand the key mechanisms behind the affordability disparities, we examine three supplementary models:

- **Monthly premium in dollars (monthly premium model):** How much of the burden is associated with higher absolute premiums?
- **Premium per \$1,000 of home value (effective rate model):** How much is the burden attributable to higher insurance *rates* relative to the value of what is being insured?
- **Premium as a share of P&I payment (premium / P&I model):** How much, in basis points, does insurance squeeze the monthly housing budget relative to the mortgage payment?

For the dollar-denominated models, coefficients represent dollar differences directly. For the premium / P&I model, coefficients are in basis points (1 basis point = 0.01 percent of the P&I payment). Using 2024 medians (monthly P&I of \$1,992), each basis point represents approximately \$0.20 per month ($\$1,992 \times 0.0001 = \0.20).

TABLE 3.2

Mechanism Models: Understanding Insurance Affordability Differences

Variable	Monthly premium (\$)	Premium per \$1,000 value	Premium / P&I (basis points)
Credit score (ref.: subprime score)			
Near-prime score	-1.51**	-0.13**	-14.88**
Prime score	-9.16***	-0.76***	-109.30***
Superprime score	-19.15***	-1.56***	-182.48***
LTV ratio (ref.: < 60%)			
60–80%	-2.80***	0.57**	-462.04***
> 80%	-5.17***	1.04**	-684.80***
Loan type			
FHA or VA (ref.: conventional)	4.24***	0.32***	40.50***
DTI ratio (ref.: < 25%)			
25–33%	-0.62	-0.31***	-16.01***
33–43%	-0.34	-0.56***	-22.99***
> 43%	-2.26	-0.87***	-38.04**
Property value (log)	48.01***	N/A ^a	-648.97***
Income (ref.: < 50% of the AMI)			
50–80% of the AMI	-3.77*	-0.95***	-96.34***
80–120% of the AMI	-3.99	-1.47***	-111.74***
> 120% of the AMI	8.57	-2.10***	-30.66
Geography			
LMI tract	13.85	-0.87***	64.66
Tract minority share	-24.03***	-0.78	-125.47*
Tract median housing age	0.34***	0.02***	2.89***
NRI risk score (0–1)	0.47***	0.02***	5.80***
Other loan characteristics			
Second home or investment	6.67*	0.81***	-10.92
Streamline refinance	9.52***	0.38***	65.15***
Cash-out refinance	15.76***	0.59***	130.08***
Origination year (ref.: 2018)			
2019	0.98.	-0.20***	36.09*
2020	2.90*	-0.33***	76.30***
2021	6.80**	-0.38***	155.39***
2022	19.65***	-0.21*	114.24***
2023	25.83***	0.06	-19.43
2024	37.93***	0.42**	54.92

Source: Authors' calculations.

Notes: AMI = area median income; DTI = debt-to-income; FHA = Federal Housing Administration; LMI = low- and moderate-income; LTV = loan-to-value; NRI = National Risk Index; P&I = principal and interest; ref. = reference; VA = US Department of Veterans Affairs. Ordinary least squares estimation with metropolitan statistical area fixed effects.

^a Property value is excluded from the effective rate model, as property value is in the denominator.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Credit Score

Table 3.1 showed that subprime borrowers face higher burdens than superprime borrowers. The supplementary models confirm that this disparity reflects direct differences across all three dimensions.

The relationship between credit score and each of the supplemental affordability metrics is negative and statistically significant across all credit score tiers.

First, the monthly premium model finds that superprime borrowers pay \$19.15 less per month than subprime borrowers in absolute terms. The effective rate model isolates pricing differentials: Superprime borrowers pay \$1.56 less than subprime borrowers per \$1,000 of home value. On a \$400,000 home (near the 2024 average), this translates to \$624 per year, or \$52 per month ($\$1.56 \times 400 = \624 per year). The premium / P&I model shows superprime borrowers dedicate 182 basis points less of their monthly mortgage payment to insurance. Using the 2024 median P&I of \$1,992, this amounts to \$36.25 less per month ($0.0182 \times \$1,992 = \36.25).

Loan-to-Value Ratio

LTV ratio is excluded from the primary burden model (table 3.1) because the LTV ratio can capture multiple borrower characteristics (e.g., wealth and other unobserved factors) rather than isolating a direct insurance cost effect. For example, low-wealth borrowers are likely to have lower down payments and higher LTV ratios, but they also tend to purchase less expensive homes relative to their income, which can lower their premium-to-income ratio. The LTV ratio's effects on insurance rates and absolute costs are instead examined through the mechanism models below.

High-LTV borrowers are charged higher insurance rates. The effective rate model shows borrowers with LTV ratios greater than 80 percent pay \$1.04 more per \$1,000 of value than borrowers with LTV ratios below 60 percent. On a \$400,000 home, this amounts to \$416 more per year ($\$1.04 \times 400 = \416). Borrowers with LTV ratios from 60 to 80 percent pay \$0.57 more per \$1,000, or \$228 more per year on a \$400,000 home ($\$0.57 \times 400 = \228).

The monthly premium model shows that despite higher rates, high-LTV borrowers pay \$5.17 less per month in absolute terms, and the premium / P&I model shows insurance is a smaller share of borrowers' payments (-685 basis points). These patterns reflect that high-LTV borrowers typically have larger mortgage payments relative to their insurance costs and home values.

FHA and VA Loans

Table 3.1 showed that the FHA effect on burden varies by property value. The supplementary models help explain this pattern, as FHA borrowers are charged more across all metrics.

FHA borrowers pay \$4.24 more per month, or \$50.88 more per year, than conventional borrowers. FHA borrowers are also charged \$0.32 more per \$1,000 of home value. On a \$150,000 home, this amounts to \$48 more per year ($\$0.32 \times 150 = \48). Insurance squeezes FHA borrowers' monthly budgets more as well, consuming 40.5 basis points more of FHA borrowers' monthly housing payments. Using the 2024 median P&I, this amounts to \$8.07 more per month ($0.00405 \times \$1,992 = \8.07). This occurs because FHA borrowers face higher monthly mortgage payments (attributable to mortgage insurance premiums, higher interest rates, and lower down payments), so insurance takes a larger share of their already-stretched housing budgets.

Debt-to-Income Ratio

Table 3.1 showed that DTI ratio has a strong association with cost burden, but this burden gap is not driven by higher absolute insurance prices. The effective rate model shows borrowers with DTI ratios greater than 43 percent actually pay \$0.87 less per \$1,000 of home value than low-DTI borrowers. This may reflect that high-DTI borrowers purchase less expensive homes and may choose lower coverage levels or higher deductibles to manage costs. Moreover, insurance is a smaller share of high-DTI borrowers' P&I payments because high-DTI borrowers tend to have high relative P&I payments.

Property Value

As expected, higher-value properties incur higher absolute premiums. A one-unit increase in log property value (approximately 2.7 times higher value) increases monthly premiums by \$48.01. But borrowers with higher-value properties generally have higher incomes. And at the same time, insurance is a smaller share of P&I for higher-value properties, suggesting that mortgage payments increase more directly with property value than insurance premiums do.

The Low-Income Double Burden

The supplementary models reveal that low-income borrowers face a double burden: They pay higher insurance rates, and those payments consume a larger share of their limited income. The effective rate model shows that borrowers earning above 120 percent of the AMI pay approximately \$2.10 less per \$1,000 of home value than borrowers earning below 50 percent of the AMI. On a \$400,000 home, this amounts to \$840 less per year ($\$2.10 \times 400 = \840).

Moreover, insurance is a larger share of P&I for low-income borrowers. The premium / P&I model shows borrowers earning 50 to 80 percent of the AMI dedicate 96 basis points less of their payment to

insurance than those earning below 50 percent of the AMI. Using the 2024 median P&I, this amounts to \$19.19 less per month ($96.34 \text{ basis points} \times \$1,992 \div 10,000 = \$19.19$). Borrowers earning 80 to 120 percent of the AMI dedicate 112 basis points less.

This raises the question of how insurance burdens factor into mortgage denial rates. DTI ratio is one of the primary reasons for mortgage denials, and our data show only applications that were approved and funded. Understanding the implications for denial rates would provide crucial context on the true barrier insurance costs create for low-income populations.

LMI Tract

Table 3.1 showed that borrowers in LMI census tracts face higher burdens than those in higher-income tracts, controlling for borrower income. The supplementary models reveal that borrowers in LMI tracts pay slightly higher absolute premiums, controlling for other factors. The monthly premium model shows a marginally significant increase of \$13.85 per month for borrowers in LMI tracts. These borrowers are charged lower effective rates, though.

Geographic Risk Pricing

Not surprisingly, higher-risk neighborhoods have higher absolute premiums. The monthly premium model shows that moving from the lowest-risk category to the highest-risk category within an MSA increases premiums by \$0.47 per month, or \$5.64 per year. Further, the effective rate model shows that moving from the lowest-risk score to the highest-risk score increases insurance rates by approximately \$0.02 per \$1,000 of home value. On a \$400,000 home, this amounts to roughly \$8 per year ($\$0.02 \times 400 = \8) in additional premiums. Insurance takes a larger share of P&I in higher-risk areas as well. Using the 2024 median P&I, moving from lowest-risk category to the highest-risk category within the same MSA add \$1.16 more per month to the median P&I payment ($0.058 \times \$1,992 = \1.16).

The within-MSA effects appear smaller because MSA fixed effects absorb much of the cross-market variation in risk pricing. When we combine with income, we see a large burden effect.

Housing Age

Being in an area with older housing stock further drives higher insurance costs, both in absolute terms and relative to value. Each additional year of median tract housing age increases insurance rates by approximately \$0.02 per \$1,000 of home value. For a \$400,000 home, this translates to \$400 more per

year ($\$0.02 \times 50 \times 400 = \400) for a home in a 50-year-old neighborhood than for a home in a new neighborhood.

This housing age premium reflects actuarial reality: Older homes have outdated electrical systems that increase fire risk, aging plumbing that increases water damage claims, deteriorating roofs vulnerable to wind and weather, and construction that may not meet current building codes for hazard resistance. Insurers price these risks accordingly.

The policy concern is that neighborhoods with aging housing stock, which are more likely low-income communities and communities of color, face higher insurance costs. Programs to modernize electrical, plumbing, and roofing systems in older homes could reduce both actual risk and insurance costs for these homeowners.

Neighborhood Racial and Ethnic Composition

The tract-level share of households of color is not significantly associated with effective insurance rates once these other factors are controlled for. Borrowers in tracts with higher shares of households of color pay lower absolute premiums, which may be driven by property value differences.

Burdens Are Growing over Time

The supplementary models confirm that rising insurance costs since 2021 reflect a structural change, not merely compositional changes in who is buying homes, as the regression models control for borrower changes. Rates relative to home values, after declining during the housing boom, have now surged above prepandemic levels. In 2024, on a \$400,000 home, the effective rate increase amounts to \$168 more per year compared with 2018 ($\$0.42 \times 400 = \168). Insurance represents an increasingly large share of total housing costs, approximately 55 basis points more of the monthly payment in 2024 than in 2018. Using the 2024 median P&I, this amounts to \$10.94 more per month ($54.92 \times \$1,992 \div 10,000 = \10.94).

4. Discussion and Implications

Policy Considerations

Our unique borrower-level dataset confirms the rising cost of hazard insurance over the past several years and enables a sharper understanding of who this trend affects most heavily. We find that households living in high-risk areas and areas with older properties faced greater insurance burdens, directly reflecting higher hazard risks and costs. Because of a confluence of factors, borrowers with lower incomes and lower credit scores pay more of their income for hazard insurance and are more likely than otherwise similar borrowers to be insurance cost burdened and to pay higher insurance rates. The fact that insurance burdens are so heavily weighted to less-well-resourced households, even after controlling for climate risk, should be of concern to policymakers in the housing ecosystem. As more borrowers stretch to afford homes, the cost of insurance against hazard risk may be stretching them even further.

Many factors associated with insurance cost burden are the same factors associated with barriers to homeownership access. Growing insurance burdens may influence mortgage denial rates, in which case they may be creating a structural barrier that could permanently lower homeownership rates and deepen wealth inequality for generations. When insurance costs start pushing qualified buyers over DTI thresholds, they become a gatekeeper to homeownership. Likewise, our identification of credit scores as a key determinant of insurance costs warrants deeper exploration of how credit-based pricing compounds across multiple housing expenses. Credit scores simultaneously affect insurance premiums, mortgage interest rates, and utility deposits, creating multiplicative burdens on the same populations.¹⁶ Credit-based pricing deepens racial and generational inequality (Choi et al. 2019). As housing affordability declines, reconstruction costs rise, and as hazard risks intensify, these barriers will only grow.

We must not overlook that property insurance plays a vital role in the housing finance system. It protects homeowners from the risk of devastating loss on what is often their most valuable asset. And insurance protects lenders and other stakeholders in the mortgage finance system from exposure to a range of property risks. Insurance cost burden should also be understood as a proxy for a household's economic exposure to underlying hazard risks.

Moreover, these more vulnerable homeowners are an augury for the broader market. All stakeholders—from insurers to lenders and servicers to investors and secondary market actors who are

part of the housing finance ecosystem—need to work together to address the challenges the most burdened households face if the American dream of homeownership is to be resilient to climate risk.

This analysis is only a starting point to inform an emerging policy issue at an early stage. Our preliminary findings suggest the following strategies to reduce insurance burdens:

- Policymakers should center the most vulnerable households when evaluating insurance-based approaches to mitigating and distributing hazard risks.¹⁷
- Mortgage and insurance regulators should reform credit-based pricing.
- Governments at all levels should develop repair and home fortification programs and encourage financing vehicles for such purposes targeted to less-resourced homeowners to bring down cost burdens and hazard risks.
- Land-use regulations should encourage situating affordable homes in high-resource areas with less hazard exposure.

Future Research Questions

Below are additional topic areas and example questions that this dataset can help researchers examine:

- **Closer look:** National analyses likely mask nuances and disparities that become more apparent when looking at individual markets. Taking this analysis to the local level, as well as comparing across markets, could also reveal the effects of different state regulatory frameworks. What can these variations teach us about best practices for broader adoption? Further, analysis of MSAs beyond those in this report could shed even more light on these variations. Also, are insurance cost burden trends different in formerly redlined areas?
- **The impact of compound underwriting:** How much more do borrowers—particularly low-income and historically underserved populations—end up paying in cumulative costs for mortgages and insurance because of factors correlated to pricing (e.g., credit score, income, and DTI ratio)? Calculating this combined premium could reveal the true magnitude of how credit-based pricing across both products functions as a regressive tax on vulnerable populations.
- **Similarly, who is priced out?** How does the low-income double burden factor into mortgage attainability? And how many potential borrowers might be completely denied mortgages or

unable to obtain insurance entirely because of this cost burden? Because DTI ratio is one of the primary drivers of mortgage denials, the full impact of insurance burdens on mortgage access remains underexplored. Our insurance data cover only mortgage applicants who actually obtained loans. Assigning insurance estimates from our data to applications that were denied because of DTI ratio could at least provide directional insight.

- **Quality of insurance:** Are borrowers responding to insurance rate increases by reducing the value of their coverage (e.g., through higher deductibles, lower coverage amounts, weaker insurers, or use of insurance of last resort), and if so, which borrowers? One data point that bears further examination is that the share of newly originated mortgages in our dataset insured by FAIR (fair access to insurance requirements) plans rose from less than 1 percent before 2020 to 3.71 percent in 2023. Understanding these trade-offs is important, as lower premiums achieved through less robust coverage may leave homeowners financially exposed when disasters strike and could be indications of the emergence of a subprime insurance market. Relatedly, how do cost burdens differ between standard homeowner's insurance policies and policies that include additional riders or required coverage (e.g., flood insurance)? Are certain households disproportionately exposed to overlapping insurance costs?
- **Loan performance:** How do insurance cost burden and affordability relate to default and prepayment risk? How does insurance quality relate to loan performance postdisaster? Borrowers with inadequate coverage may face greater financial distress following loss events, with implications for mortgage credit risk.
- **Borrower versus property risk in loan performance:** What proportion of loan delinquency and default is driven by borrower characteristics versus property-related incidents such as natural disasters, flooding, or other insured events?
- **Market activity:** How are home purchasing trends responding to increased insurance costs and higher-hazard-risk areas? Our data show substantial variation in burden across MSAs. Are there notable changes in the profiles of new borrowers or payoffs and the way they are distributed across places?
- **Refinance dynamics:** Deeper analysis of burdens related to loan purpose is needed. Further, how do insurance costs factor into refinance decisions, particularly for borrowers in high-risk areas? For example, do financially stressed homeowners extract equity to cover rising insurance costs or other expenses, and does this create a cycle of increasing financial vulnerability?

Below are other questions this analysis raises that would benefit from additional and alternative data sources:

- **Construction-related information:** Are the savings in insurance costs worth the cost of repairs or fortifications? To what extent are rising construction costs increasing the cost of rebuilding and thus affecting insurance premiums? How are rising insurance costs and burdens affecting where different types of housing get built (e.g., starter homes or affordable housing)?
- **Property tax interactions:** How do property taxes interact with hazard insurance to shape total housing cost burdens? What share of total escrow payments is attributable to insurance versus taxes, and how does this composition vary geographically? Are households in jurisdictions with high property tax rates facing a compounded squeeze from simultaneous increases in both insurance premiums and property taxes? How do trends in insurance premiums compare with property tax growth?
- **Long-term dynamics:** How do insurance burdens evolve for long-term homeowners (e.g., homeowners spending 10 or more years in their homes), particularly as properties age and require major capital investments? Are older homeowners disproportionately exposed to rising premiums? How do insurance premiums and their growth trajectories differ across income groups? Do borrowers originating in different cohorts experience systematically different premium escalation patterns? Additional data are needed to better capture and represent long-tenured and senior homeowners.

Appendix. Data Creation and Validity Checks

We created the mortgage-level insurance data used in this research by merging proprietary loan-level servicer data at origination from ICE Mortgage Data and Analytics, including insurance data (the ICE insurance data), with public HMDA data.

Data Sources and Coverage

HMDA requires most mortgage lenders to report detailed information about mortgage applications and originations. HMDA data include borrower income at origination, which we use to calculate insurance cost burden. HMDA data also provide borrower demographic information (e.g., race, ethnicity, and gender) and loan characteristics (e.g., loan amount and type). HMDA was updated in 2018 to include additional variables, such as DTI ratio, which are essential to our matching process and analysis. Because of this, our merged data start in 2018 and go through 2024.

ICE's McDash database covers between 68 and 89 percent of total US mortgages made during our study period. ICE also collects detailed insurance information for about 60 percent of the loans in the McDash data, going back to 2013 and monthly from 2021 onwards.¹⁸

Matching Process

The matching process involves two steps. First, we link ICE's insurance data to the broader ICE McDash loan database, retaining only loan records that have insurance data. From this dataset, we obtain loan information at origination to align with HMDA's origination-based reporting.

We then match the ICE McDash insurance data to HMDA data using a fuzzy matching approach based on variables common to both: geographic information (state, county, and census tract), loan amount, borrower DTI ratio, loan type (conventional, FHA, or VA), and loan purpose (purchase or refinance). For a loan to be included in our analysis, it must have a unique match, meaning exactly one loan in the HMDA data corresponds to exactly one loan in the ICE McDash insurance data based on the matching criteria.

Data Coverage and Matching Results

Table A.1 presents the coverage of each data source and the results of our matching process across the study period.

TABLE A.1

Data Coverage and HMDA-ICE Merge Results, by Year

Year	Total HMDA	McDash count	McDash insurance count	McDash insurance share of HMDA	HMDA-McDash-insurance count	HMDA-McDash-insurance to HMDA	HMDA-McDash-insurance to McDash
2018	7,728,224	4,560,631	2,676,573	34.6%	1,966,776	25.4%	43.0%
2019	9,326,361	6,120,164	3,497,849	37.5%	2,730,195	29.3%	30.1%
2020	14,541,302	11,398,039	7,428,899	51.1%	4,700,379	32.3%	29.7%
2021	14,997,308	12,170,693	7,737,028	51.6%	4,502,391	30.0%	29.9%
2022	8,394,278	5,511,269	3,473,918	41.4%	2,247,364	26.8%	29.0%
2023	5,691,726	3,237,295	1,915,090	33.6%	1,137,214	20.0%	22.6%
2024	6,177,222	3,289,190	1,871,503	30.3%	976,663	15.8%	18.8%

Sources: Inside Mortgage Finance, ICE Mortgage Data and Analytics, and HMDA data.

Note: HMDA = Home Mortgage Data Act.

Our final HMDA-McDash insurance merged dataset contains 18.3 million loans originated from 2018 to 2024 with unique matches, representing 64 percent of all loans in the McDash insurance dataset. The merged dataset captures 27 percent of HMDA total mortgage market volume.

To verify that our merged sample is representative of the broader insurance market, we compare key insurance statistics between the full ICE insurance data and the HMDA-ICE merged sample for 2018 and 2024 (table A.2). These comparisons suggest that our merged sample does not systematically skew the data and is suitable for analyzing insurance cost burden at origination.

TABLE A.2

Comparison of ICE Insurance Data and HMDA-ICE Merged Sample

Metric	ICE insurance 2018	HMDA-ICE merged 2018	ICE insurance 2024	HMDA-ICE merged 2024
Loan count	2,676,573	1,966,776	1,871,503	976,663
Average annual premium	\$1,429	\$1,270	\$1,874	\$1,856
Median annual premium	\$1,128	\$1,044	\$1,572	\$1,524
Average deductible	\$1,659	\$1,552	\$2,352	\$2,306
Average coverage	\$314,995	\$311,276	\$392,038	\$398,181

Sources: ICE Mortgage Data and Analytics, HMDA data, and the Urban Institute.

Note: HMDA = Home Mortgage Disclosure Act.

We also compare some loan characteristics between the full HMDA dataset and the HMDA-ICE merged data for our sample period from 2018 to 2024. In general, loan characteristics are similar. For example, in 2018, median property values are \$275,000 in both samples, median borrower income is \$86,000 in HMDA compared with \$84,000 in the merged sample, and owner-occupancy rates are 90 and 92 percent, respectively,

Comparison with Other Research

An emerging body of research (Blonz et al. 2026; Keys and Mulder 2024; Ge et al. 2024; Ge, Johnson, et al. 2025; Ge, Lam, et al. 2025; Cornellissen et al. 2025; Khater et al. 2024) uses loan-level property data to estimate the average home insurance costs mortgage-holding homeowners pay. The highest estimate, provided by the Consumer Federation of America (Cornelissen et al. 2025), uses quotes (not the actual insurance premiums homeowners pay) on a hypothetical policyholder with a mid-tier credit score and a home with a \$350,000 replacement value. Keys and Mulder (2024) show a slightly higher average (using 2023 as a comparison year) than our results. They infer insurance payments from escrow payments on loan-level data from CoreLogic. Blonz and coauthors (2026) and Ge and coauthors (2024) use ICE insurance data and find average premiums across the years they study of \$1,550 and \$1,565, generally consistent with our data even after restricting to the HMDA-ICE matched loans.

Notes

- ¹ “Natural Disaster Risk,” Federal Housing Finance Agency, accessed April 20, 2026, <https://www.fhfa.gov/programs/natural-disaster-risk>.
- ² Laurie Goodman and Alexei Alexandrov, “Home Insurance Needs an Overhaul to Prepare for Climate Change. Fannie Mae and Freddie Mac Should Lead the Way,” *Urban Wire*, Urban Institute. November 4, 2024, <https://www.urban.org/urban-wire/home-insurance-needs-overhaul-prepare-climate-change-fannie-mae-and-freddie-mac-should>.
- ³ Lance Lambert, “The Housing Market Is Still Passing Through a Home Insurance Shock, Cotality Says,” *Fast Company*, November 22, 2025, <https://www.fastcompany.com/91447264/housing-market-home-insurance-is-still-passing-through-a-shock-cotality-says>.
- ⁴ Shan Ge, Stephanie Johnson, and Nitzan Tzur-Ilán, “Home Insurance Premiums Influence Mortgage Delinquencies, Relocations,” Federal Reserve Bank of Dallas, March 24, 2026, <https://www.dallasfed.org/research/economics/2026/0324>.
- ⁵ Ge et al., “Home Insurance Premiums.”
- ⁶ “Severe Convective Storm Modeling,” Cotality, accessed April 20, 2026, <https://www.cotality.com/property-risk-management/severe-convective-storm-modeling>.
- ⁷ “Cost to Construct a Home Rose Significantly Over Last Two Years,” National Association of Home Builders blog, January 29, 2025, <https://www.nahb.org/blog/2025/01/cost-of-construction-survey-2024>.
- ⁸ Levi Sumagaysay, “Long-Shot Ballot Initiative Could Have Huge Effect on California Insurance,” *Cal Matters*, August 13, 2025, <https://calmatters.org/economy/2025/08/prop-103-ballot-initiative/>.
- ⁹ According to Experian, California, Hawaii, Maryland, Massachusetts, Michigan, Oregon, and Utah limit the use of credit information in setting homeowner’s insurance rates. See Louis DeNicola, “Which States Restrict the Use of Credit Scores in Determining Insurance Rates?” Experian blog, March 18, 2025, <https://www.experian.com/blogs/ask-experian/which-states-prohibit-or-restrict-the-use-of-credit-based-insurance-scores/>.
- ¹⁰ States may ban the use of credit scores directly in insurance pricing but not the use of other factors that may correlate with low credit scores. Hence, even after eliminating the credit score as an input to pricing, borrowers with low credit scores still tend to face higher costs.
- ¹¹ Lauren Sommer and Stephan Bisaha, “How Homeowners Are Saving on Insurance by Upgrading Their Houses Against Disasters,” NPR, June 11, 2025, <https://www.npr.org/2025/06/11/nx-s1-5340712/climate-home-insurance-discount-alabama-ca>.
- ¹² The Insurance Institute for Business and Home Safety has established a FORTIFIED Home™ designation prescribing a “system of building features that mitigate hurricane wind and wind-driven-water damage.” See Alabama Department of Insurance and Center for Risk Research (2025).
- ¹³ Esteban Reynoso, “California’s First Floodgate Aims to Remove Hundreds of Central Valley Homes from Flood Zone,” CBS News, October 23, 2024, <https://www.cbsnews.com/sacramento/news/californias-first-floodgate-stockton/>.
- ¹⁴ Lambert, “The Housing Market Is Still Passing Through a Home Insurance Shock.”
- ¹⁵ “Material Costs Affect Housing Affordability,” National Association of Home Builders, accessed April 20, 2026, <https://www.nahb.org/advocacy/top-priorities/building-materials-trade-policy/material-costs>.

¹⁶ Susan Meyer, “5 Unexpected Ways Your Credit Score Affects Your Life,” *The Zebra*, last updated April 19, 2024, <https://www.thezebra.com/resources/personal-finance/unexpected-ways-credit-score-affects-your-life>.

¹⁷ See GAO (2026, 30–45) for a discussion of policy options to improve the availability and affordability of homeowner’s insurance.

¹⁸ For the insurance dataset, we remove condominiums (because the data for many condos relates to the entire project’s master policy rather than the unit itself). We also followed methods employed by existing literature (Blonz et al. 2026) by removing loans where the primary policy was not escrowed, as these are more likely to have poor data quality.

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