LIFE INSURERS AND HOUSING: INVESTING, INSURING, ADVANCING

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Abstract: This study explores the multifaceted relationship between the U.S. life insurance industry and the housing market, emphasizing three key roles: investment in housing-related assets, insuring households against financial risks that may deter homeownership, and advancing affordable housing. Life insurers, as long-term institutional investors, hold substantial portfolios of residential mortgages, mortgage-backed securities, and municipal housing bonds. Historical analysis reveals cyclical patterns of increased residential mortgage investment during periods of demographic growth and economic stability. At the household level, logistic regressions using the 2022 Federal Reserve Survey of Consumer Finances show that mortgage-holding households are significantly more likely to have life insurance coverage than those without a mortgage, suggesting a complementary, though not necessarily causal relationship between mortgage debt and financial protection in the form of life insurance. National-level regression analysis further supports this link, showing that increases in mortgage debt correlate with growth in life insurance in-force. We also highlight life insurers' contributions to affordable housing through low-income housing tax credits (LIHTC). A zip-code-level analysis confirms that a substantial portion of life insurer mortgage investments serve middle-income communities. The study concludes that life insurers play an important but not well understood role in supporting housing access, market stability, and economic growth.

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EXECUTIVE SUMMARY

This study explores the role of life insurers in the U.S. housing market. Life insurers complement U.S. housing through three primary channels: investing in housing-related assets, insuring households against financial risks of mortgage debt, and advancing affordable housing.

Life insurers are long-term institutional investors whose liability-driven investment strategies align well with long-duration assets such as residential mortgages and mortgage-backed securities (MBS). As of 2024, life insurers held $873.3 billion in mortgages and $544.3 billion in MBS, including $349.7 billion in *residential* mortgages (defined as one-to-four family and multifamily properties) and $313.2 billion in *residential* MBS. Though a small part of today's market, life insurers residential mortgage holdings have grown rapidly and consistently since 2011, increasing at an average annual rate of 14.3 percent. Residential mortgage holdings as a percent of total assets increased in a similar way during important periods in U.S. economic history. Time-series analysis identifies four such periods: the Industrial Revolution (1899–1914), the 1920s Economic Expansion (1920–1929/1931), the post-WWII Baby Boom (1946–1970), and the post-Global Financial Crisis (GFC) Recovery (2011–present). During each of these periods, residential mortgage investment holdings grew substantially and consistently. These expansionary periods tend to coincide with demographic shifts, increased housing demand, lower inflation, and lower interest rates. The post-WWII period, in particular, saw life insurers holding over 20 percent of their assets in residential mortgages from 1951 to 1970, contributing to an unprecedented and permanent nationwide shift from rental to owner-occupied housing.

The household-level relationship between mortgage debt and life insurance coverage is also examined. Using the 2022 Federal Reserve Survey of Consumer Finances, we find that households with a mortgage are 78.6 percent more likely to have life insurance coverage and 85.5 percent more likely to be heavily insured (defined as coverage equal to four times total annual income). Married households, households with children, union members, veterans, and younger households are also more likely to have greater insurance coverage. These findings suggest that there is a close positive relationship between having a mortgage, which is typically necessary for initial homeownership, particularly among younger households, and life insurance coverage.

At the national level, regression analysis using historical data from 1901 to 2023 reveals that a 1 percent increase in mortgage debt is associated with a 0.29 percent increase in life insurance in-force. Population growth and inflation are also positively correlated with life insurance growth. The model explains 74.8 percent of the variation in life insurance growth, indicating a moderately strong fit and supporting the hypothesis that life insurance coverage complements long-term financial commitments at scale. Though we cannot claim causality, the results suggest complementarity between life insurance coverage and mortgage debt, both at the household and

aggregate levels.

Beyond traditional investments, life insurers contribute to affordable housing through low-income housing tax credits (LIHTC) and municipal housing bonds. In 2024, life insurers held $5.3 billion in LIHTC-qualified investments and in 2023 held $10.3 billion in municipal housing bonds. A zip-code-level analysis of mortgage holdings reveals that in 2023 life insurers held mortgages in 80.7 percent of U.S. zip codes, with over half of residential mortgage investments in zip codes with median household incomes below $100,000, and about one-third in areas below $75,000. *This underscores the industry's role in supporting middle-income and underserved communities*.

Life insurers are essential to the housing market, not only as investors but also as providers of financial security and supporters of economic mobility. Their long-term capital stabilizes housing finance, while their products reduce household risk and encourage homeownership. As demographic and economic trends evolve, the life insurance industry's role in housing is poised to grow in importance. This analysis highlights the need for policymakers to recognize the importance of life insurance coverage as a financial tool which helps support homeownership. The paper provides a foundation for further research, policy development, and industry engagement in housing-related initiatives.

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I. Introduction

We explore the vital but understudied link between the life insurance industry and housing in the U.S. Life insurers support housing markets through *investing* in residential mortgages, mortgage-backed securities, and municipal housing bonds; *insuring* households against mortality and other risk which may deter long-term asset-building financial commitments such as purchasing a home; and, *advancing* the American story of home ownership. Each of these components is examined to provide a more complete picture of the complementarity between the life insurance industry and housing.

Life insurance products are long-term in nature. A life or long-term care insurance policy purchased today may not pay a benefit for many decades; annuity assets are often accumulated over a working lifetime and decumulated throughout retirement; and a long-term disability income insurance policy may pay benefits over many years. To ensure contractual obligations such as these are met, life insurers match their long-duration liabilities with long-duration, largely investment-grade assets.[2] At year-end 2024, the industry held over 81 percent of their general account assets and over 61 percent of total assets in such long-term investments. Long-term assets currently favored by life insurers include corporate bonds (public and private), U.S. government and municipal bonds, asset-backed securities, and residential, commercial, and farm mortgages.[3, 4] In 2024, 95.2 percent of bonds held in life insurers general account were investment grade, and 98.5 percent of all mortgages were in good-standing.[5]

Because of its long-term nature, mortgage investment is a natural fit for life insurers. Life insurers currently hold $873.3 billion in total mortgages and $544.3 billion in mortgage-backed securities (MBS).[6] Specific to housing, they hold $362.6 billion in residential mortgages, and

[2] A rating of NAIC 1 or 2 is considered 'investment grade'. This is equivalent to Baa3 or higher using Moody's grading, and BBB- or higher using S&P or Fitch grading.
[3] American Council of Life Insurers, Life Insurers Fact Book, 2025.
[4] Total life insurance company assets are held in a general account and a separate account. General account assets are matched with more traditional liabilities, such as term and whole life insurance, fixed annuities, long-term care insurance, and disability income insurance. The general account portfolio is determined by the carrier and is highly regulated. Asset allocation in the separate account is determined by policyholders, subject to regulation and carrier determined constraints. Separate accounts are used for products with an investment component, such as variable life insurance and variable annuities.
[5] American Council of Life Insurers, Life Insurers Fact Book, 2025.
[6] American Council of Life Insurers, Life Insurers Fact Book, 2025.

$313.2 billion in residential mortgage-backed securities (RMBS).[7] They also invest more than $10.3 billion in municipal housing bonds, and $4.3 billion in bonds issued by housing construction companies.[8] Currently, *at least* 9.3 percent of general account assets are held in housing-related investments.[9]

Life insurers have been investing in residential mortgages for over 150 years. Within that span, there were four time periods when holdings persistently and substantially increased. Each of these time periods is coincides with changes in the larger economy, such as demographic change, growing demand for housing and housing finance, and relatively lower interest rates and inflation. Importantly, they also coincide with transformative periods in U.S. history: the final years of the Industrial Revolution, the 1920s Economic Expansion, the post-WWII period, and the post-Global Financial Crisis (GFC) period. In each case, with the exception of the on-going post-GFC expansion, exogenous events such as deteriorating economic conditions, war, or a pandemic abruptly and negatively impacted housing demand and eroded the appeal of residential mortgages as an investment. Today, residential mortgage investment comprises a small but important and fast-growing part of life insurers investment portfolio. Since 2011, holdings have grown every year, at an average annual rate of 14.3 percent.

The life insurance industry and housing are linked in another way. Households routinely enter long-term financial contracts and commitments, with mortgages on a primary residence being the most common and often most important in a person's lifetime. Successfully managing mortgage debt leads to greater household wealth and financial security over the longer-term which can lead to a better quality of life and greater opportunity for household members. But it places an obligation on the household and, since the premature death of a family's wage-earner results in a loss of income for the family from which to continue paying the mortgage on the home, exposes it to mortality risk.[10] Life insurance can be used to offset that risk and provide protection to families from loss of income. From the borrower's perspective, insufficient life insurance coverage could result in loss of home equity, diminished standards of living, and limited opportunities for offspring in the event of the death of an income-earner. By offsetting some of that risk, life insurance may ease apprehension of some borrowers, ensuring that long-term financial contracts, such as a mortgage loan, are executed and amortize smoothly. Though further

[7] We define residential mortgages as both one-to-four family and multifamily properties. See Appendix A for a discussion of data sources, data limitations, and definitions.
[8] Data for residential mortgages, which includes apartment and 1 to 4 family properties, is from the Federal Reserve Flow of Funds and reflect 2024.Q4. Data reported for RMBS, municipal housing bonds, and investment in construction companies is based on ACLI analysis of 2023 NAIC Annual Statements and reflect year-end 2023.
[9] It should be noted that securitized apartment building mortgages are typically categorized as commercial mortgage-backed securities (CMBS) and are not captured in this calculation. Additionally, life insurer total assets include bonds and stocks issued by residential and apartment real estate developers. Therefore, 9.3 percent is an *underestimate*.
[10] It is important to distinguish between life insurance and private mortgage insurance (PMI). PMI is not a life insurance product, but rather a property-related risk product. The purpose of PMI is to protect the mortgage *lender* in case the borrower defaults, for whatever reason. The lender is always the beneficiary of a PMI policy, while the borrower effectively pays the premium. Typically, the lender requires PMI if the buyer has less than 20 percent equity or downpayment on the purchased property. PMI *offers no protection to the borrower or their family*, it only reduces the lenders risk exposure. PMI is not considered life insurance in this analysis.

research is needed, *at the margin*, it is possible that some home purchases, and the resulting household and economy-wide benefits, may not occur or may be less substantial without life insurance coverage or other protection offered by life insurers. Other life insurance products, such as annuities, long-term care insurance, and especially disability income insurance, may also be linked to holding a mortgage. Due to data limitations, it is not currently possible to quantify these effects. Additionally, annuities and long-term care insurance are more focused on retirement-related risk, a phase of life where holding a mortgage is less common and the amount of household debt more modest.

This study uses both household and time-series data to shed light on the relationship between mortgage debt and life insurance coverage. Controlling for other characteristics, logistic analysis of the Federal Reserve Survey of Consumer Finances finds that households with a mortgage are 78.6 percent more likely to have *any* life insurance coverage compared to households without a mortgage and are 85.5 percent more likely to be *heavily insured* (defined as 4 times total annual income or more) compared to those without a mortgage. This finding suggests, at minimum, that both having mortgage and life insurance coverage indicate household financial literacy and responsibility. Though further research is needed, it lends support to (but does not confirm) the hypothesis that mortgage borrowers specifically recognize the importance of protection against mortality risk and that, at the margin, some households may forego a mortgage and homeownership in the absence of life insurance coverage.

In order to determine if this relationship translates to the national level, historical aggregate data was examined. Regression results show that a 1.0 percent increase in national mortgage debt results in a 0.29 percent increase in total aggregate life insurance in-force, controlling for other relevant variables. This result lends further support to the hypothesis that life insurance coverage helps facilitate long-term, wealth-building financial transactions that contribute to economic stability and growth.

Finally, though only a small percentage of their overall portfolio, life insurers invest in municipal bonds, including bonds dedicated to housing. In 2023, they held at least $10.3 billion in housing-bonds. Similarly, life insurers participate substantially in low-income housing development through low-income housing tax credits (LIHTC). In 2024, 46 life insurance companies held $5.3 billion in LIHTC-qualified investment, with 17 holding more than $10 million.[11]

Using NAIC annual statement data, zip-codes of individual properties on which life insurers hold a mortgage were identified and grouped by median household income in the zip-code. Over half of life insurer residential mortgage investment is in properties located in zip codes with a median household income below $100,000, and about a third of all one-to-four family mortgages are on properties located in zip codes with a median household income below $75,000.

[11] ACLI analysis of NAIC Annual Statement data.

Section II further examines the cyclical nature of life insurer investment in residential mortgages and how it contributes to the economy during transitional times. Section III assesses the complementarity between mortgage debt and life insurance coverage at the household and aggregate levels. Section IV examines investment in lower-income housing through LIHTCs, discusses housing bond investment, and presents the results of a zip-code-level analysis of mortgage holdings. Section V concludes with a summary of findings and observations, as well as recommendations for further research.

II. Life Insurer Mortgage Investment

a. Natural Fit

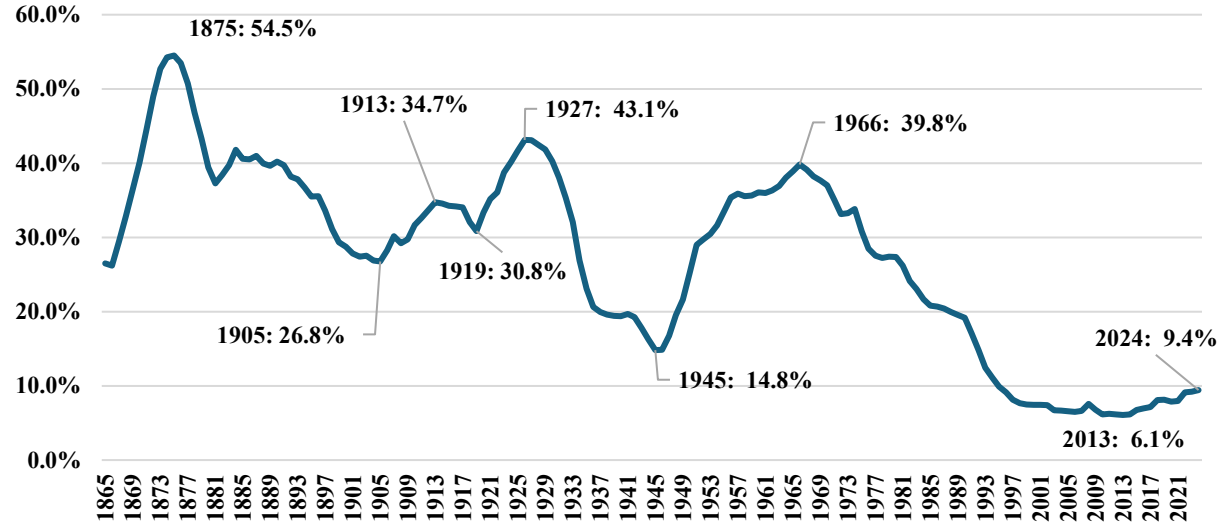
Life insurers are large, relatively conservative long-term institutional investors. Their investment model is liability-driven and is based on asset-liability matching, where policies are grouped into pools then matched with assets. By pooling risk, life insurers can predict liability flows with great accuracy. Liabilities can then be matched with predictable, investment-grade assets, such as mortgages or MBS. This business model has been used with increasing sophistication since the inception of the industry.

Mortgages are a natural investment fit for life insurers. They are compatible with life insurers time horizon, are relatively low risk, offer collateral, can be used to diversify a portfolio, often have a better yield than comparable investments, and are a tangible way to invest in the economy. There are three mortgage categories, residential, commercial, and farm. Together, they comprised *at least* one quarter of life insurer total assets for 102 out the last 160 years (1865-2024) (figure 1). Today, they comprise 9.4 percent of total assets with holdings increasing every year since 2011.

Within the mortgage asset class, allocation between different types of mortgages has varied through time. From 1941 to 1973, which encompasses the Baby Boom and post-WWII expansion, residential mortgage holdings surpassed commercial holdings, with the opposite being the case since 1973. However, a consistent upward trend in residential mortgage investment has emerged since 2011 (figure 2). If the trend continues, in several years residential mortgage holdings may surpass commercial. Currently, residential mortgages comprise 40.7 percent of all life insurer mortgage investment, up from 17.1 percent in 2011. A similar shift occurred in the 1920s.

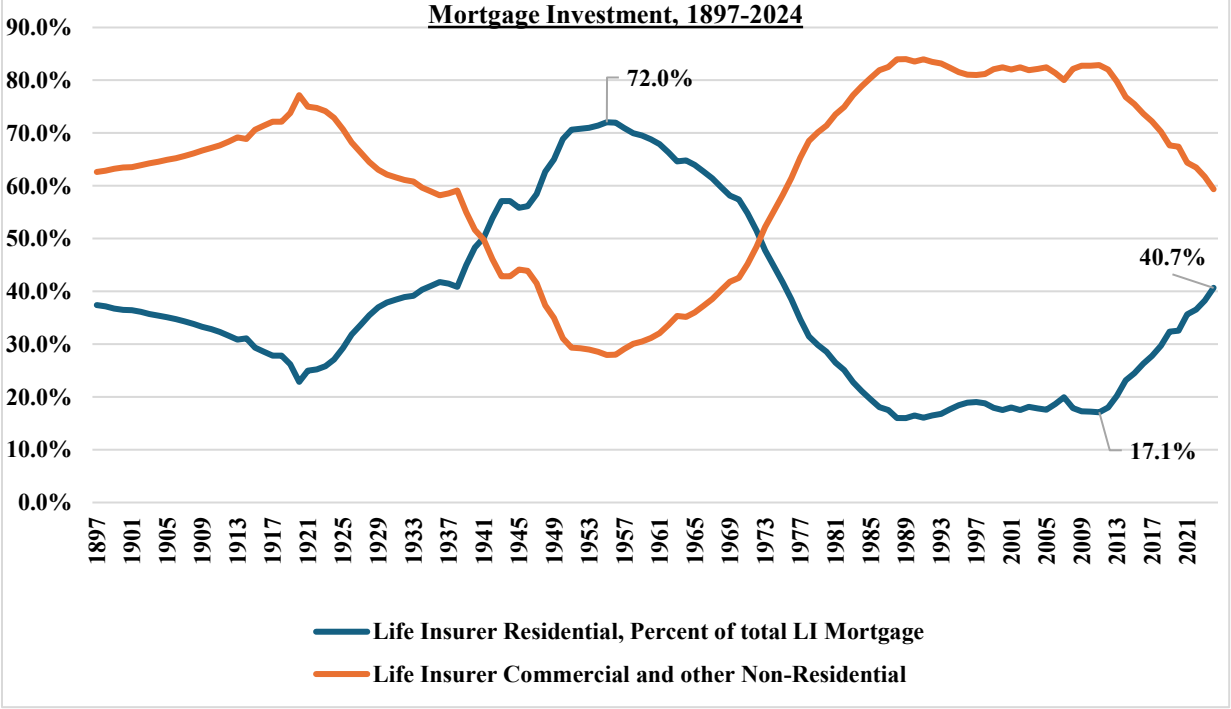
Life insurers have invested specifically in *residential* mortgages since the earliest days of the industry. Currently, they hold $362.6 billion in residential mortgages, 3.9 percent of their total assets. This comprises 2.1 percent of the entire U.S. residential mortgage market (figures 3 and

Figure 1: Life Insurer *Total* Mortgage Holdings (Residential, Commercial, and Agricultural) as a Percent of Total Assets, 1865-2024



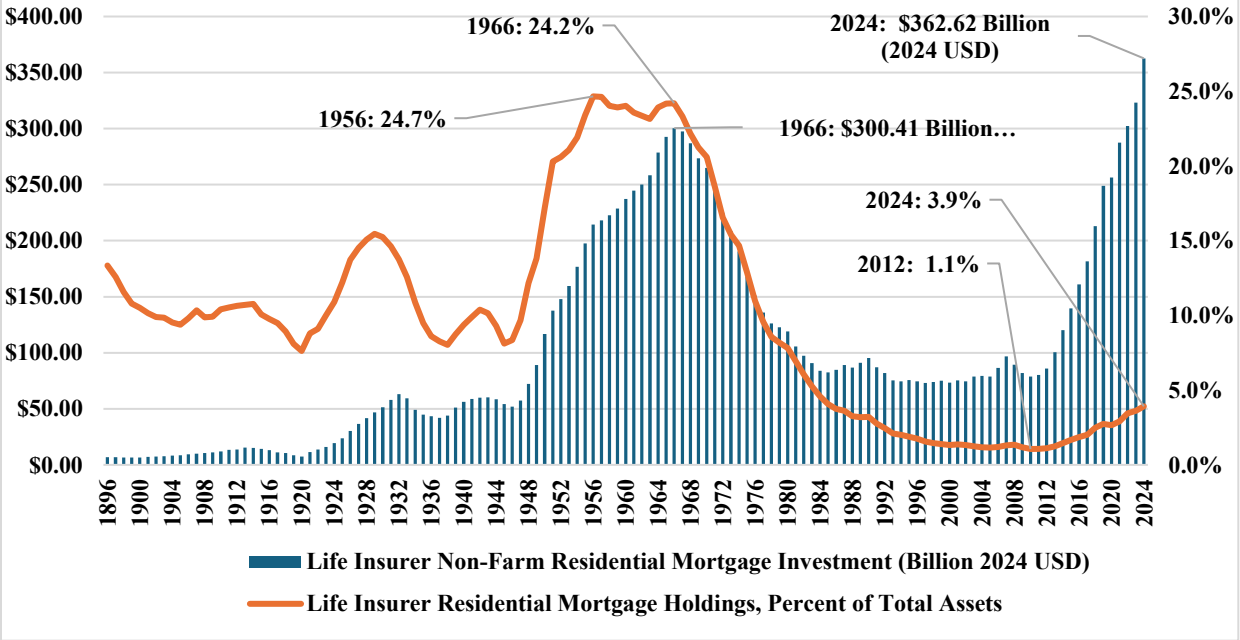
Sources: American Council of Life Insurers, Life Insurers Fact Book, *various editions*; and, U.S. Department of Commerce, Historical Statistics of the United States: Colonial Times to 1970, 1976.

Figure 2: Life Insurer Mortgage Investment by Type, Percent of Total Life Insurer Mortgage Investment, 1897-2024



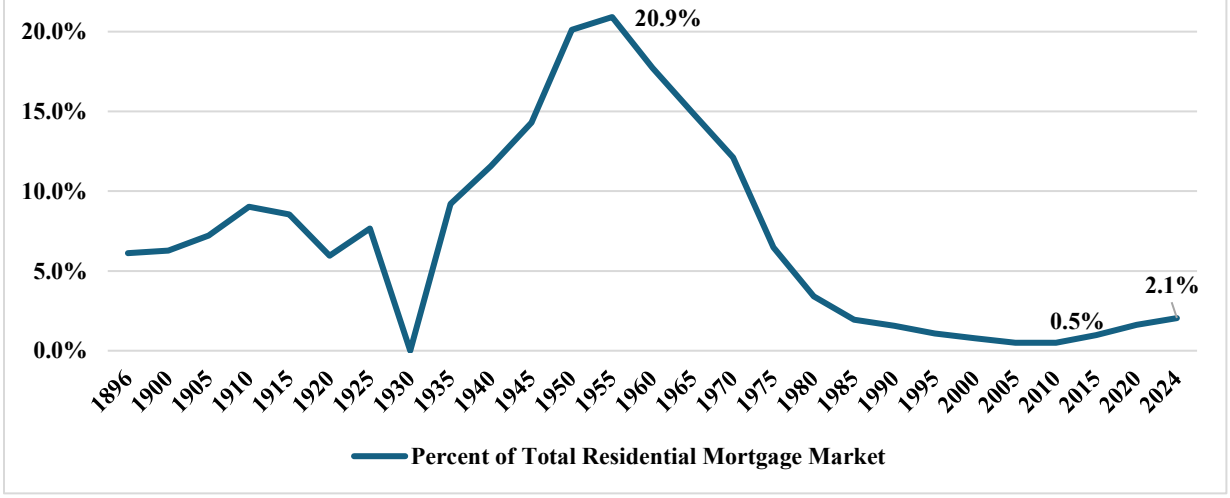
Source: U.S. Federal Reserve, Flow of Funds; and, and, U.S. Department of Commerce, Historical Statistics of the United States: Colonial Times to 1970, 1976. Residential includes both one-to-four family and multifamily properties.

Figure 3: Life Insurers Non-Farm Residential Mortgage Holdings, 1896 to 2024



Sources: American Council of Life Insurers, Life Insurers Fact Book, *various editions*; and, U.S. Department of Commerce, Historical Statistics of the United States: Colonial Times to 1970, 1976.; U.S. Federal Reserve, Flow of Funds. Balke and Gordon (1989). Data was calibrated for 2023 prices using the GNP deflator.

Figure 4: Life Insurer Residential Mortgage Holdings as a Percent of ALL U.S. Residential Mortgages, 1896 to 2024



Source: U.S. Department of Commerce, Historical Statistics of the United States Colonial times to 1970, 1975; U.S. Federal Reserve, Flow of Funds, *various years*.

4). In the past, they have held as much as 24.7 percent of total assets in residential mortgages (1956) and have accounted for as much as 20.9 percent of the entire residential mortgage market (1957). While life insurer residential mortgage holdings as a percent of the total market have declined since the late 1950s, from that point to 1977, the share held by U.S. chartered financial institutions (i.e. banks) increased. From 1977 to the present, bank's share of the market also steadily declined, while agency and Government-Sponsored Enterprise-backed (GSE-backed) mortgage pools became more prominent up to the Global Financial Crisis (GFC). Since the GFC, GSEs have become the most prominent residential mortgage holders, comprising 46.6 percent of all one-to-four family and 25.8 percent of all multifamily mortgage in 2025.Q2.[12]

When considered in constant (2024) dollars, life insurers now hold more in residential mortgages than at any time in their history. Importantly, *this is mostly a reflection of a much larger life insurance sector and housing market*, but it does illustrate both the growing relevance of residential mortgage investment and its permanence.

Life insurers invest in the MBS asset class, including residential mortgage-backed securities (RMBS). MBS offer predictable cash flows, relatively low credit risk, and yields that are often higher than other, similarly-rated bonds. These financial instruments, particularly high-quality senior tranches, pair well with life insurers liabilities. MBS were first introduced in 1960, when the Government National Mortgage Association (Ginne Mae) issued the first mortgage pass-through security. The concept gained traction when the Federal Home Loan Mortgage Corporation (Freddie Mac) introduced its own MBS in 1971, followed by the Federal Mortgage Association (Fannie Mae) in the 1980s. Due to reporting limitations, data on life insurer's agency and non-agency MBS holdings prior to 2006 is unavailable. However, according to Federal Reserve Flow of Funds data, life insurers invested in "agency- and GSE-backed securities" as early as the 1960s, and from 1991 to 1997 over 10 percent of total assets were held in that category of security. Caution is warranted because the category is broad and includes agency-MBS as well as bonds issued directly by GSEs. Additionally, pre-2006 data on holdings of privately-issued MBS is unavailable, so an accurate estimate prior to that year is not possible.

The size of the life insurance industry and the long-term, buy-and-hold nature of its business model brings stability to financial markets where life insurers are investors, and to the economy as a whole. This is true of mortgage investment. Though not as prominent as in the past, mortgage and mortgage-related investment remain a cornerstone of life insurers portfolios.

b. Residential Mortgage Investment Cycles

Historically, life insurer residential mortgage investment has been cyclical, with distinct peaks and troughs. Since 1899, there have been four time periods, lasting 12 or more years, where exposure consistently increased. These years coincide with important periods in recent U.S. history, specifically: (1) the end of the Industrial Revolution (1899 to 1914); (2) the 1920s

[12] U.S. Federal Reserve, Flow of Funds (accessed on September 28, 2025).

Economic Expansion (1920 to 1929/1931); (3) the post-WWII/Baby Boom period (1946 to 1970); and, (4) post-GFC period (2011 to the present). In other words, the U.S. life insurance industry actively increased its participation in the residential mortgage market for 65 out of the last 125 years, particularly in transitional periods.[13] Figure 5 illustrates the annual percentage change in total residential mortgage holdings, with the four expansionary periods in red.

In order to better understand how life insurer residential mortgage investment changed during expansionary periods, Table 1 examines period length, how much of the total residential mortgage market life insurers comprised at the start and end of each time period, and average annual growth of holdings. Holdings grew consistently and substantially during every expansion period, with growth being most robust from 1920 to 1931 (15.3 percent average annual growth), followed by the current, ongoing expansion (14.3 percent average annual growth). In each period except for post-WWII, life insurers represented a larger share of the overall residential mortgage market at the end of the cycle than at the beginning. As discussed below, the post-WWII housing market was particularly vibrant, had many participants, and ushered in a paradigm shift, with the majority of households living in owner-occupied housing by 1970.

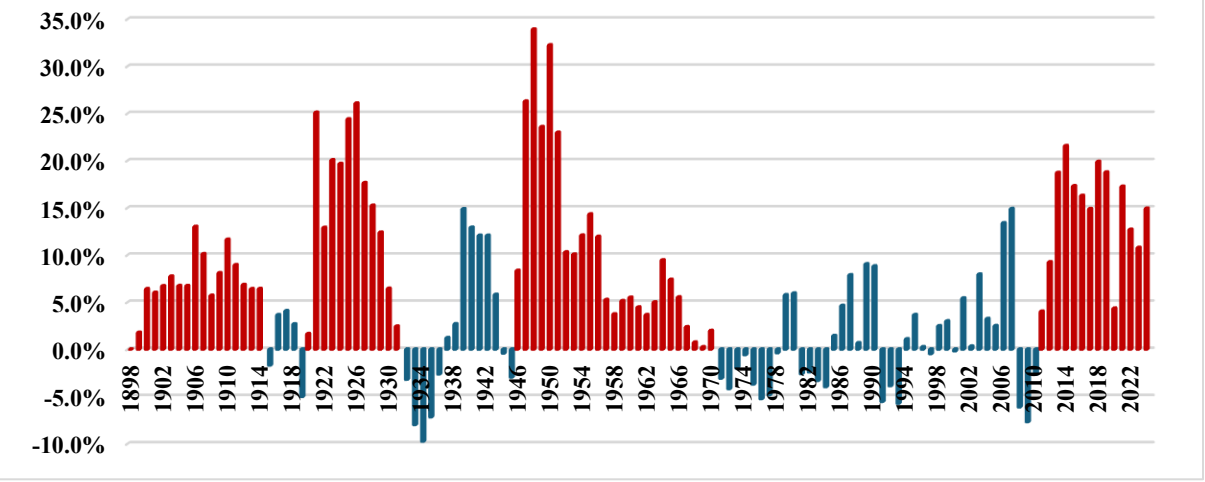
In order to shed light on how expansionary periods differ, table 2 compares economic, demographic, and industry indicators during expansionary periods versus contractionary periods. Table 2 also compares growth of residential mortgage holdings, industry assets, and average annual percentage change in life insurance in force.

During expansionary periods residential mortgage holdings grew at a mean annual rate of 11.6 percent, compared to 1.1 percent in all other years, indicating that the relevant periods have been captured. The rate of demographic change also stands out. During expansionary periods, population grew at an average annual rate of 1.4 percent, compared to 1.0 percent during non-expansionary periods. This is partly due to immigration. Overall, during expansionary periods, immigration increased at an average annual rate of 12.0 percent, compared to 1.3 percent in all other periods.[14] Immigration was most robust during the 1899-1914 and 1946-1970 time periods, and more modest during the 1920-1931 and 2011-present time periods. The 1920s did experience demographic change in the form of rural-urban migration and fast-growing cities, while demographic change in the post-GFC period is somewhat contractionary, with lower birth rates, delayed marriage, and young adults more likely to live in their parental home.

Annual historical birthrate data is unavailable and, unadjusted for infant mortality, is of limited use. However, the growth rate of population under age one is a good indicator of fertility trends and population momentum. Table 2 indicates that during expansionary periods the average percentage change in population under age one is 0.85 percent, compared to 0.50 percent in non-expansionary periods. It is uncertain how much of this difference is due to immigration, though

[13] Pre-1899 data is not available.
[14] All references and data reported pertaining to immigration only includes persons obtaining lawful permanent resident status.

Figure 5: Annual Percent Change in Life Insurer Residential Mortgage Holdings (1 to 4 family and Multifamily), 1896 to 2024



Source: U.S. Department of Commerce, Historical Statistics of the United States Colonial times to 1970, 1975; U.S. Federal Reserve, Flow of Funds, *various years*.

Table 1: Cycles of Growth in Life Insurer Residential Mortgage Investment

	Start	End	Number of ***Consecutive*** Growth Years	Residential Mortgage Holdings – Start of Cycle (million USD)	Residential Mortgage Holdings – End of Cycle (million USD)	Average Annual Growth	Percent of Total Mortgage Market – Start of Expansion	Percent of Total Mortgage Market – End of Expansion
Industrial Revolution	1899	1914	16	$172	$531	7.4%	6.3%*	8.6%**
1920s Economic Expansion	1920	1931	12	$558	$2,948	15.3%	6.0%	9.5%***
Post-WWII	1946	1970	25	$4,021	$42,708	10.8%	14.3%****	12.1%
Post-GFC	2011	2024 (on-going)	14 (ongoing)	$56,504	$362,621	14.3%	0.5%	2.1%

Source: U.S. Department of Commerce, Historical Statistics of the United States Colonial times to 1970, 1975; U.S. Federal Reserve, Flow of Funds, *various years*.
*1900. **1915. ***1930. ****1945.

Table 2: Comparison of Life Insurer Residential Mortgage Investment Growth and Contraction Cycles, 1899 to 2023

	Expansionary Years	*Non-Expansionary* Cycle Years
Number of Years	65	59
Time Periods	1899 to 1914 1920 to 1931 1946 to 1970 2011 to 2024	1915 to 1919 1932 to 1945 1971 to 2010
Life Insurer Residential Mortgage Holdings, annual percent change, mean	11.62	1.10
Life Insurance In-Force, annual percent change, mean	7.69	6.02
Total Life Insurer Assets, annual percent change, mean	6.81	7.74
Population, annual percent change, mean	1.42	1.02
Population under age 1, percent change, mean	0.85	0.50
Immigration percent change, mean	12.03	1.29
GNP Growth (constant prices), mean	2.98	3.85
Per capita GNP Growth (constant prices), mean	1.39	2.66
Interest Rates (Moodys Aaa), mean	4.19	6.79
Inflation (CPI)	1.86	4.33
Housing Starts, percent change, mean	7.32	3.84

Source: U.S. Department of Commerce, Historical Statistics of the United States Colonial Times to 1970, 1975; U.S. Federal Reserve, Flow of Funds, *various years*.

the post-WWII expansion does include the Baby Boom years (1946-1964), when over 76 million people were born in the U.S.

Inflation and interest rates are lower during expansionary periods, suggesting relatively greater economic stability than non-expansionary periods. Historical mortgage rates are not available, however Moody's 10-year AAA corporate bond rate, a proxy for interest rates in general, averaged 4.19 percent in expansionary years compared to 6.79 percent in all other years. The relatively lower bond rate would partly explain life insurers growing preference for residential mortgages. To the extent that mortgage rates mirror corporate rates, it would also explain growing demand for housing and housing finance. When interest rates are lower, housing finance is more affordable and amount of housing demanded is greater. In general, life insurers have increased residential mortgage holdings during periods of growing housing demand, which is largely fueled by demographic change in the form of increased immigration as well as birthrates, and economic stability in the form of lower interest rates and lower inflation. Not surprisingly, the average growth in housing starts during expansionary periods is about twice that during non-expansionary periods.

Interestingly, the amount of total life insurance coverage in-force increases at a faster rate during expansionary periods, when the market and housing starts are growing, lending support to the

hypothesis that mortgage debt and life insurance coverage may be complementary, though causation cannot be concluded (see section IV).

The sub-sections below examine the economic and demographic environment during each growth cycle.

i. Later-Stage Industrial Revolution (1899 to 1914)

Life insurers helped build the foundations of the modern U.S. economy. The earliest life insurance companies were founded in colonial times, but the industry didn't gain a foothold until the second U.S. Industrial Revolution (1870-1914), a time when the industry developed rapidly, demand for its products grew and the regulatory framework became established. By 1900, "life insurance" was part of the American lexicon and life insurers were considered substantial institutional investors.

At various points in the late-1800s institutional investors requiring safe, reliable investments had few options. The corporate bond market was growing but volatile. For example, from 1873 to 1875, 35.9 percent of all corporate bond defaulted; from 1883 to 1885, 16.1 percent defaulted; and, from 1892 to 1894, 18.7 percent defaulted (Gieselke et al. (2011)). Given volatile alternatives, mortgage investment often provided a better option from a risk management perspective and was based on tangible assets. Additionally, the National Bank Act of 1864 barred commercial banks from writing mortgages, giving life insurers a comparative advantage in the mortgage market. Only life insurers, building and loan associations and mutual savings banks were permitted to issue amortized mortgage loans. Growing housing demand, few investment alternatives, lending restrictions favorable to insurers, and fast-growing insurance market all spurred life insurer mortgage investment during this period. Insurance regulators, particularly in eastern states, were initially not in support of mortgage investment on properties outside of a company's home state, preferring local mortgage investment. This proved ill-fated. Limiting insurers to local mortgage investment exposed them to local business cycles. Additionally, companies based in states permitting mortgage investment only in the home state were at a competitive disadvantage compared to companies that took advantage of westward expansion and urbanization throughout the country.

As indicated above, population growth fuels demand for housing and housing finance, but it was particularly true during the Industrial Revolution. From 1899 to 1914, the U.S. population grew from 76 to 94 million, a 32.5 percent increase over fifteen years (2.2 percent average annual growth), most of which can be attributed to immigration. In total, 13.7 million people arrived in the U.S. during those years, with immigration exceeding one million in 1905, 1906, 1907, 1910, 1913, and 1914.[15] For context, legal U.S. immigration did not surpass an annual inflow of one million people again until 1989, toward the end of the Cold War, when the U.S. population was 2.5 times greater than in 1914.[16] This was also a period of technological innovation, scientific

[15] U.S., Office of Homeland Security Statistics (2024).
[16] According to the U.S. Census, total population was 245,705,000 in 1989, compared to 99,111,000 in 1914

discovery, industrialization, the rise of 'big business', the beginning of the Great Migration (1910-1970), and continued westward expansion.[17] The influx of people and rapid industrial development spurred the economy, with GNP increasing from $17.4 billion in 1899 to $38.6 billion in 1914, a 8.1 percent average annual growth.[18]

The industry also grew rapidly during this time period with the number of life insurers operating in the U.S. increasing from 82 to 307 (18.3 percent annual growth). Total life insurance in-force increased from $6.8 billion to $19.7 billion (12.6 percent average annual growth), and total assets held by the industry increased from $1.6 billion to $4.9 billion (14.0 percent average annual growth).

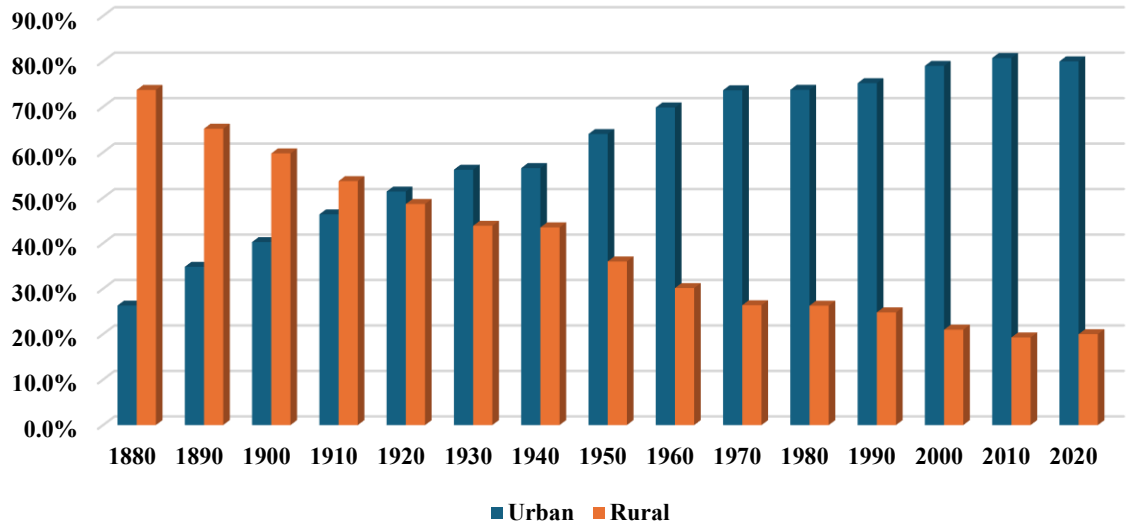
WWI curbed immigration, slowing the engine of expansion and housing demand. In 1915, immigration was about one-quarter of what it was in 1914. Three years later, the 1918 worldwide influenza pandemic resulted in the first and only U.S. population decline (-0.06 percent). In that year, the percent of population under age 1 declined -1.4 percent and -1.0 percent in 1919. Estimates vary, but up to 625,000 Americans and between 50 and 100 million people worldwide died from the influenza pandemic, disproportionately impacting working age people as well as the very young and very old. This, along with falling immigration and birth rates, accounts for the fall in population under age one.

ii. The 1920s Economic Expansion and Start of the Great Depression (1920 to 1931)

The 1920s brought rapid urbanization, technological adoption, and a residential housing construction and stock market boom, all of which fueled widespread optimism and wealth accumulation. By the 1920s immigration slowed to a trickle. But this time period is characterized by another demographic change. With the introduction of mechanized agriculture, opportunities in rural areas became more limited. Rural-urban migration ramped up substantially, with rural residents moving to mostly northern cities in search of economic opportunity and a better life. The 1920 Census found that for the first time the U.S. urban population exceeded the rural population (figure 6). From 1920 to 1931, U.S. non-farm population increased 33.2 percent while the number of people living on farms stayed fairly constant. Similarly, cities with 1 million or more residents grew faster than other areas (48.5 percent increase), as did the number of owner-occupied housing units (28.8 percent increase). During this time period, 7.6 million single-family housing units were constructed. Life insurers were active in this market, with residential mortgage holdings increasing from $558.0 million and 7.6 percent of total assets in 1920, to $2.9 billion and 14.6 percent of total assets in 1931. By 1931, residential mortgage holdings were more than five times their 1920 level, while total assets were almost three times greater.

[17] From 1860 through 1914, nine states were added to the union: Kansas (1861), West Virginia (1863), Nevada (1864), Nebraska (1867), Colorado (1876), Montana (1889), North Dakota (1889), South Dakota (1889), Washington (1889), Idaho (1890), Wyoming (1890), Utah (1896), Oklahoma (1907), Arizona (1912), and New Mexico (1912).
[18] U.S. Department of Commerce (1966 and 1976).

Figure 6: Distribution of Rural vs. Urban Population, Percent of Total Population



Source: Colonial Statistics of the US (1890 to 1945); and, U.S. Census.

Residential mortgages were a much more prominent part of life insurers portfolios by the end of this period.

Optimism came to an end with the stock market crash of 1929 and onset of the Great Depression. Despite a booming stock market, in 1928 stocks comprised only 1.8 percent of life insurer assets.[19] The minimal proportion of equity investment is mostly due to regulatory constraints, but life insurers' focus on residential mortgages, which are tied to tangible assets, likely helped them weather the Great Depression better than other industries. Life insurers holdings continued to increase in 1930 and 1931, albeit at a much reduced rate.

In 1932 a number of government programs were launched with the intention of supporting the housing market. The Federal Home Loan Bank Act of 1932 created the Federal Home Loan Bank (FHLB) system, and the National Housing Act of 1934 established the United States Housing Authority (USHA) and the Federal Housing Administration (FHA). FHLBs were created to enhance and assist housing finance and community development by providing loans to financial institutions. The USHA provided loans to localities and states to fund low-cost housing construction. The FHA insured lenders against default risk, standardized long-term mortgages, and lowered downpayments. The FHA also opened the residential mortgage market to other financial intermediaries such as commercial banks. Before FHA, most home loans were short-term, and originated by local banks, bank and loan associations, or life insurers. Life insurers offered relatively longer maturities than other lenders and, like other lenders, were loan

[19] U.S. Department of Commerce (1976).

originators. New intermediaries entering the market took some of the competitive edge from life insurers.

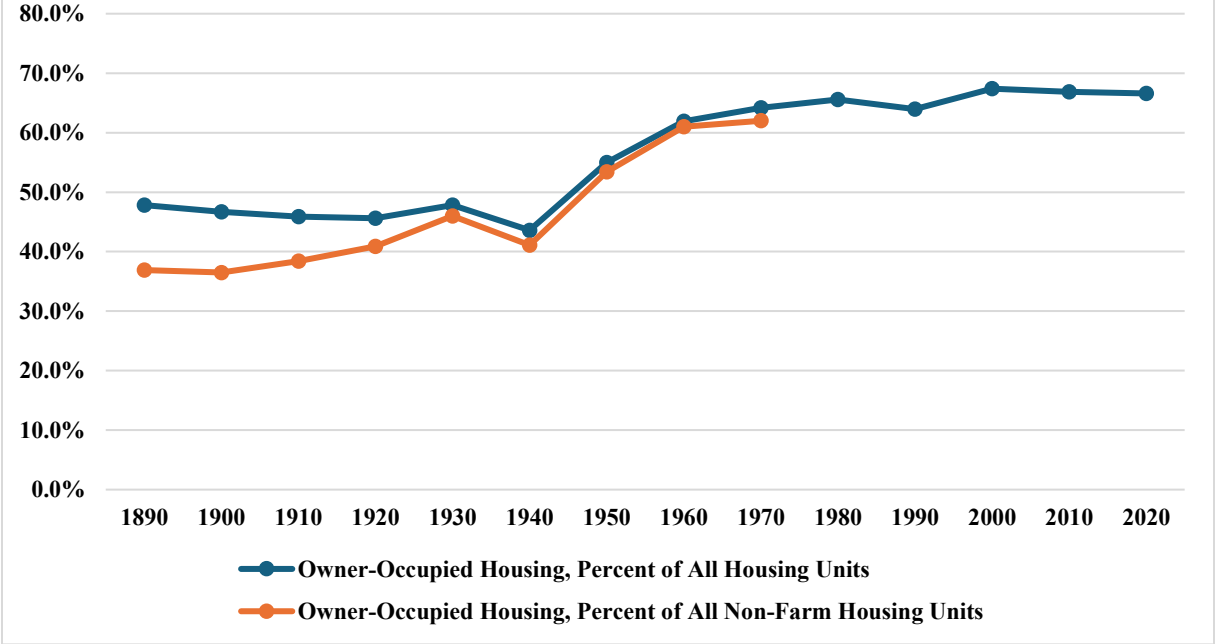
The Great Depression and opening markets to new sources of financing lessened the appeal of residential mortgages as an investment vehicle. Life insurers continued increasing residential mortgage exposure up to 1931, the year before federal housing programs were created and two years after the 1929 stock market crash. Additionally, 1932 and 1933 were the most challenging years of the Great Depression in terms of economic contraction. In 1932, GNP declined -23.5 percent and unemployment was 23.6 percent. In 1933, GNP declined -4.1 percent and the unemployment rate peaked at 24.9 percent. The Great Depression, likely with the help of government-sponsored housing programs, marked the end of life insurers growing participation in the residential mortgage market.

There was a temporary, sharp increase in residential mortgage holdings from 1938 through 1942. This was partly a rebound from the sharp 1933 to 1937 decline, but was also driven by the construction of multi-family urban housing developments financed by several large life insurers. About 50,000 apartment units, mostly in New York City, were constructed. These complexes were targeted at families who did not qualify for public housing but were not wealthy enough to afford modern private housing. Residents were typically middle-class and blue-collar workers and included many union members (Tanaka (2017)). Life insurers pursued these projects because they were in search of stable assets, and because government programs encouraged the development of working-class housing. Additionally, influential figures of the time such as newspaper publisher William Randolph Hearst were calling for nationalization of the insurance industry, further compelling interest in high-profile, working-class-friendly projects with wide political appeal. With encouragement from city planners such as Robert Moses, life insurers owned, operated, and financed the construction of these properties. Interest in building additional developments waned in the post-WWII period, with focus shifting to newly-constructed, suburban, middle class housing. Though the effort is noteworthy, and holdings did expand from 1938 to 1942, this time period is not considered as a separate expansionary cycle in our analysis because of its short length, limited scope, and limited company participation.

iii. Post-WWII (1946 to 1970)

Life insurer residential mortgage investment was most substantial and impactful during the post-WWII period (1946 to 1970), comprising over 20 percent of total industry assets every year from 1951 to 1970 and peaking in 1956 at 24.7 percent. This cycle coincides with a nation-wide shift from rental to owner-occupied housing between 1940 and 1970. In 1940, 43.6 percent of housing units were owner-occupied, increasing to 64.2 percent by 1970 (Figure 7). Prior to 1940 and since 1970, the percent of housing units that were owner-occupied held relatively steady, indicating this was a one-time, permanent change in U.S. housing. This shift dramatically improved the U.S. standard of living and financial security of the Silent Generation, Baby

Figure 7: Owner-Occupied Housing, Percent of All Housing Units, 1890 to 2020



Source: Colonial Statistics of the US (1890 to 1945); and, Federal Reserve, Flow of Funds (1946 to present).

Boomers, and their offspring. By actively participating in mortgage investment at the time, life insurers contributed to this historic shift.

The post-WWII expansion shared characteristics of previous expansions, such as the rapid population growth, rapid construction of residential properties across the country, and a surge in consumer culture. It was also fueled by 15 years of pent-up demand and a general public desire to 'get back to normal' after almost two decades of economic downturn and war. The birth rate, in particular, was high during this period, reflected in the Baby Boom (1946-1964). From 1946 to 1970, years when life insurer residential mortgage investment was expanding, the *average* annual crude birth rate was 22.7, compared to 15.0 from 1971 to 2010, and 12.1 from 2011 to 2023.[20]

In addition to the growing number of families spurring housing and housing finance, many borrowers now had access to low-interest loans via the GI Bill and Veterans Administration (VA) loan programs. These programs de-risked mortgage lending by insuring loans, making the residential mortgage market attractive to private investors such as life insurers. Programs focusing on WWII veterans had another significant, long-term impact. This cohort of veterans was disproportionately young. Consequently, first-time home buyers were younger than in prior years (Fetter (2011)). By establishing themselves at an earlier stage in life than previous and

[20] World Bank, World Development Indicators; U.S. Department of Commerce (1976). The average crude birthrate is defined as the number of births per 1,000 people.

future cohorts, as a group they were more likely to achieve financial stability and prosperity than previous or subsequent cohorts.

Life insurance companies grew rapidly in the post-WWII period, as did their residential mortgage portfolio. The growing number and size of families with children, fueled the demand for housing and housing finance, as well as for life insurance. In 1946 there were 179 million life insurance policies in force with a face value of $170.1 billion. By 1970 there were 405 million policies in force with a face value of $1.4 trillion. Similarly, life insurers held 8.3 percent of their total assets in residential mortgages in 1946, compared to 20.6 percent by 1970. Interest rates and inflation remained relatively stable during most of this time, making mortgage investment predictable and profitable.

By the early-to-mid 1970s, economic headwinds such as the Energy Crisis and stagflation emerged. The percent of households with any life insurance coverage also peaked at this time. In subsequent decades, as the population aged life insurer product offerings shifted toward retirement-focused products.

iv. Post-Global Financial Crisis (2011 to the present)

1. The U.S. Housing Market, Pre-Global Financial Crisis

The U.S. housing market grew robustly from 1990 to 2006, with housing starts reaching a peak in January 2006, and housing prices peaking in February 2007 (figure 8). There is universal agreement that there was a housing bubble in the second part of this period, sometimes referred to as the Great American Housing Boom. Though the bubble ended in 2006-2007, the beginning is debated. Levitin and Wachter (2012) believe the bubble was short, starting in 2003 or 2004, and concluding in 2006, while others argue that prices were diverging from trend as early as 1996. Unlike previous booms, the 1990-2006 housing market was driven by a combination of low interest rates, especially flexible loan terms, less stringent underwriting standards, a large number of mortgages on second homes, and individual speculation.

Both the commercial and residential mortgage-backed securities (CMBS and RMBS) markets were severely impacted by the GFC. Essentially, MBS are bonds, backed by mortgages and mortgage payments. They are created by bundling a large number of mortgages issued by banks or other mortgage lenders into a pool which is then sold to either a U.S. GSE or a private entity, which then creates securities backed by that pool. Securities are divided into tranches, offering a range of risk and return profiles. They are then sold to investors, who receive regular payments derived from payments made by mortgage borrowers. MBS can take different forms. MBS can be agency or non-agency. Agency MBS are issued or guaranteed by GSEs such as Fannie Mae or Freddie Mac. Non-agency MBS are issued by private entities.

Generally, all MBS provide a steady income stream, offer diversification, and are tailored to reflect a specific risk profile depending on the MBS itself and the tranches held. MBS carry

several risks, including prepayment risk, default risk, interest rate risk, and underwriting risk. Underwriting risk is greater for non-agency MBS. Poor underwriting is partly responsible for the GFC. At the time (leading up to 2007-2008), mortgage underwriting standards were low with mortgages being issued to borrowers with poor credit, little income verification, and minimal downpayments. Many such risky loans were securitized improperly and/or rated rapidly and/or inaccurately by Nationally Recognized Statistical Rating Organizations (NRSROs).

2. The Subprime Crisis, the Great Recession, and the Global Financial Crisis

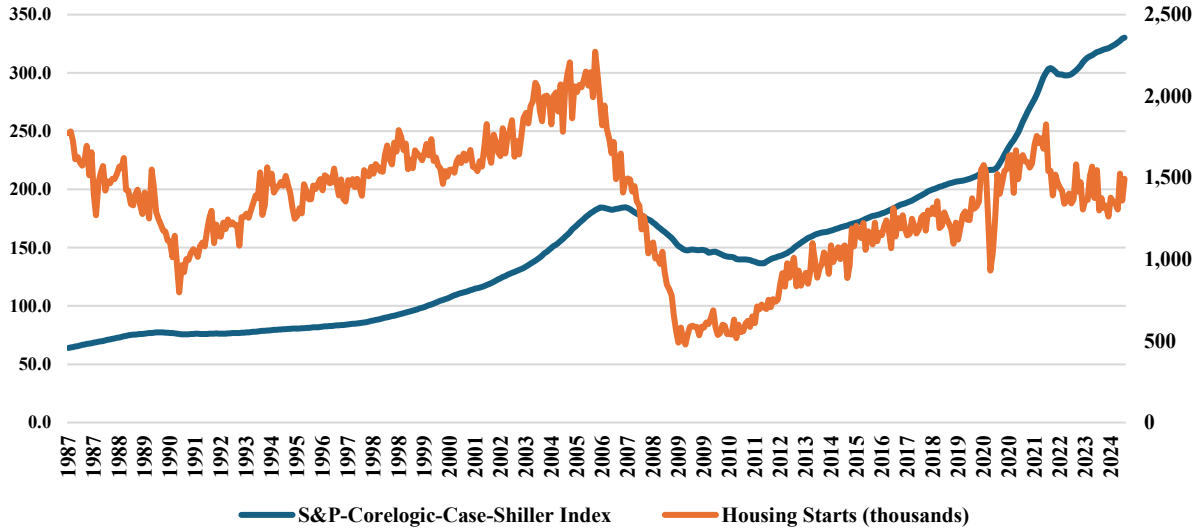
In March 2007, New Century Financial, the largest private subprime mortgage lender in the U.S., announced it was in severe financial distress, marking the start of the subprime crisis. Over the following months other events followed, including an announcement by Bear-Stearns that two of its hedge funds lost nearly all their value due to subprime exposure. By late 2007, the housing market contracted sharply, reverberating throughout the world economy. This resulted in a prolonged economic downturn (the Great Recession) and the GFC.

In the U.S., recessions typically last 10 to 11 months. According to the National Bureau of Economic Research (NBER), the Great Recession officially started in December 2007 and continued to June 2009, lasting 17 months. From its peak in January 2006, housing starts fell -77.3 percent and bottomed out in February 2011, while housing prices fell -26.0 percent reaching bottom a year later. By February 23, 2010, real estate analytics firm Corelogic was reporting that about 30 percent of all mortgaged homes in the U.S., approximately 11.4 million, had negative equity.

Despite the boom, life insurers held few residential mortgages during this time but they did have substantial RMBS holdings, mostly opting for high-quality, lower risk senior tranches. In 2006, pre-GFC, RMBS (agency and private-label) comprised 6.5 percent of total life insurer assets and at year-end 2008, when the GFC was underway, 5.4 percent. Holdings fell to 3.9 percent by 2010, then rebounded.[21] The rebound can be partly attributed to the National Association of Insurance Commissioners (NAIC) 2009 Structured Securities Project, which recognized the limitations NRSRO ratings and introduced a new financial modeling methodology that adjusted risk-based capital calculations to more accurately reflect actual risk life insurers faced.[22] RMBS also provided a post-GFC investment opportunity. Many RMBS were trading at a discount and, despite the risks, offered relatively high yields. According to Ospina and Uhlig (2018), AA-rated and above subprime mortgages were not impacted in the long-term, consequently RMBS that were AA-rated and above did not ultimately experience losses. Few life insurers were severely impacted over the longer-term. Since then, the industry has somewhat shifted away from RMBS

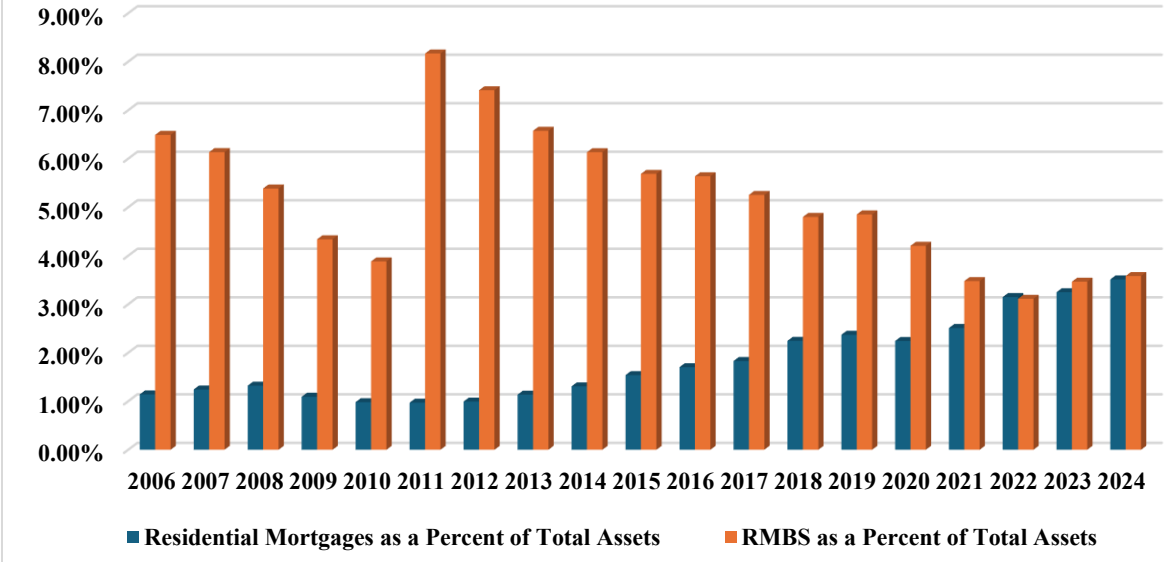
[21] ACLI analysis of NAIC Annual Statements is used to calculate RMBS holdings, while the Federal Reserve Flow of Funds is used to calculate residential mortgage holdings. The Flow of Funds does not report total RMBS holdings by industry, and NAIC annual statements categorize apartment mortgages as commercial rather than residential. The Flow of Funds reports multifamily/apartment as a single category.
[22] See NAIC website.

Figure 8: Housing Starts and Home Prices, 1987-2025



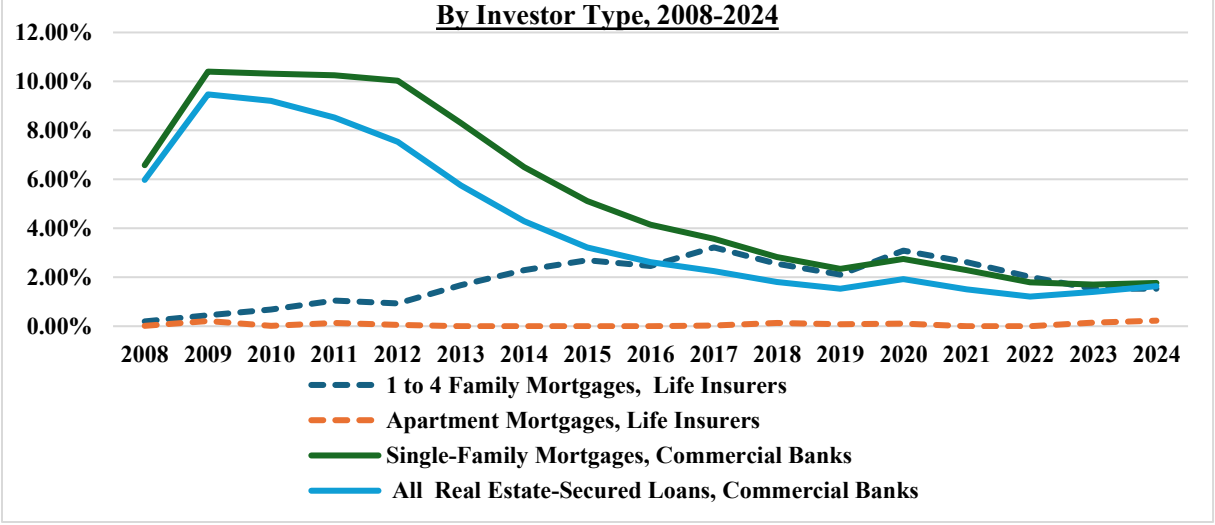
Sources: U.S. Census Bureau and U.S. Department of Housing and Urban Development, New Privately-Owned Housing Units Started: Total Units [HOUST], retrieved from FRED, Federal Reserve Bank of St. Louis on May 4, 2025; S&P Dow Jones Indices LLC, S&P CoreLogic Case-Shiller U.S. National Home Price Index [CSUSHPINSA], retrieved from FRED, Federal Reserve Bank of St. Louis on May 4, 2025.

Figure 9: Life Insurer RMBS and Residential Mortgage Holdings, as a Percent of Total Assets, 2006-2024



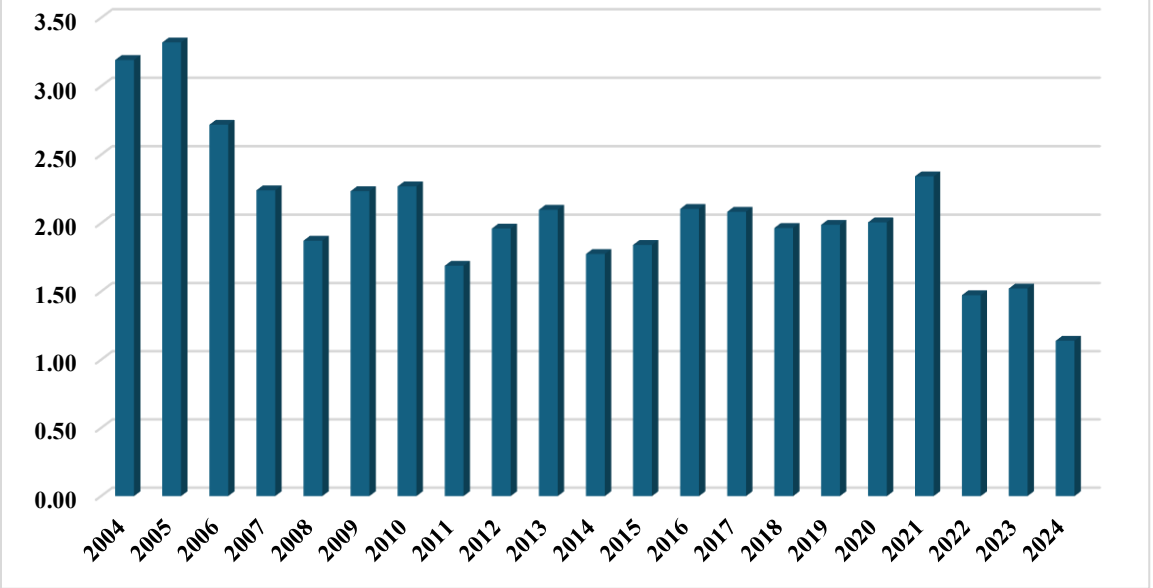
Source: RMBS data is based on ACLI analysis of NAIC Annual Statement data; Residential mortgage investment data is from U.S. Federal Reserve, Flow of Funds.

Figure 10: Residential Mortgage Delinquency Loans, Principal Outstanding, By Investor Type, 2008-2024



Sources: American Council of Life Insurers, Mortgage Loan Portfolio Profile, *various issues*; Board of Governors of the Federal Reserve System (US), Delinquency Rate on Loans Secured by Real Estate, All Commercial Banks [DRSREACBS], retrieved from FRED, Federal Reserve Bank of St. Louis on March 16, 2025; Board of Governors of the Federal Reserve System (US), Delinquency Rate on Single-Family Residential Mortgages, Booked in Domestic Offices, All Commercial Banks [DRSFRMACBS], retrieved from FRED, Federal Reserve Bank of St. Louis; on March 16, 2025.

Figure 11: First-Time Homebuyers, Existing Homes (millions)



Source: National Association of Realtors.

toward residential mortgage holdings, though since 2022, both types of investment have become a more prominent part of life insurer portfolios (figure 9).

The subprime mortgage crisis exposed vulnerabilities in both the mortgage and RMBS markets. Because life insurers gravitate toward higher-quality, lower-risk mortgages compared to other financial intermediaries, delinquency rates on the few residential mortgages they held remained low throughout this period. Figure 10 compares delinquencies on 1-to-4 family and apartment mortgages held by life insurers to single-family mortgages and all real estate secured loans held by commercial banks from 2008 to 2024.[23] Banks witnessed a spike in delinquencies, while mortgages on one-to-four family properties held by life insurers trended slightly upward from 2008 to 2017. By 2017, delinquency rates on bank and life insurer-held one-to-four family properties converged and have remained in sync. Delinquency rates on life insurer-held apartment building mortgages, however, remained low from 2008 to the present. It should be noted that life insurers routinely originate mortgages on apartment buildings, allowing them the option to renegotiate loan terms with the borrower. This is typically not the case for one-to-four family homes.

The aftermath of the GFC, as well as various demographic changes post-GFC, created both headwinds and tailwinds for the housing market and housing finance. The 2,300 page Dodd-Frank Act was introduced in July 2010 in response to the GFC. Arguably, the banking sector was most impacted by Dodd-Frank's 400+ rules and mandates. Mortgage lending standards were universally tightened, and banks faced stricter capital requirements. Banks responded to the increased regulation by scaling back mortgage holdings, leaving room for other institutional investors, including life insurers. In 2007.Q1, U.S. chartered depository institutions held 28.0 percent of all residential mortgages compared to 0.5 percent held by life insurers, 21.0 percent by ABS-issuers, and 39.5 by GSEs and GSE-backed mortgage pools. By 2025.Q2, U.S. chartered depository institutions held 22.0 percent of all residential mortgages compared to 2.3 percent held by life insurers, 3.4 percent by ABS-issuers, and 62.2 percent by GSEs and GSE-backed mortgage pools.

The Federal Reserve responded to the GFC and Great Recession by maintaining a near-zero Federal Funds rate from 2008 through 2015 and from March 2020 to March 2022, and more than quadrupling its balance sheet from $913.7 billion to $4.6 trillion (i.e. quantitative easing) by the purchase of Treasuries and MBS. Both actions lowered yields on traditional insurer investments such as corporate and government bonds, making mortgages somewhat more attractive.[24] Low

[23] The only known, publicly available source of distressed life insurer mortgage loan holdings is the American Council of Life Insurers (ACLI) quarterly publication, the Mortgage Loan Portfolio Profile (MLPP). The MLPP is survey-based and reports on distressed commercial, residential and agricultural mortgage loans and total loan holdings by geographic regions and property type (one-to-four family, apartment, farm, manufacturing, hotel/motel, office building, etc.

[24] Quantitative easing had four phases. QE1 began in November 2008 and concluded in March 2010. During this time, the Federal Reserve purchased $600 billion in MBS and $1.75 trillion in Treasury securities. QE2 started in November 2010 and concluded in June 2011. It involved the purchase of $600 in Treasury securities. Operation Twist ran from September 2011 to

interest rates also encouraged borrowers to refinance. By 2015, only 57 percent of homeowners had a mortgage, compared to 65 percent in 2007.[25]

3. Generational Impact

The Millennial generation were born between 1981 and 1996. They came of age during the GFC and are now between age 29 to 44. Many were early in their working lives during the GFC, though most were impacted in some way. As a generation, lifetime earnings, career trajectories, job prospects, and ability to afford a first home were all impacted. Additionally, the COVID pandemic led to a severe, albeit temporary economic contraction in 2020, a point when Millennials were relatively early in their working lives (age 24 to 39). Unemployment spiked and 'work from home' became the norm. Although the economy quickly rebounded, the labor market and income flows were disrupted. These exogenous events, as well as changing tastes and preferences, impact housing demand, housing supply, and the cost of housing.

According to the National Association of Realtors (NAR), in 1981 the median age of a first time home buyer was 29, the same age as today's youngest Millennials. Using that as a benchmark, we would expect that younger Millennials and older Gen-Z members would comprise the majority of homebuyers. Today the median age of a first time home buyer is 38, suggesting that older Millennials and younger Gen-X members comprise most first-time homebuyers.[26]

Post-GFC, the number of first-time home buyers never reached early-2000s levels. Though levels held relatively steady from 2008 to 2021, by 2024 the number of first-time homebuyers reached a new annual low of 1.14 million (figure 11).[27] The most recent decline from 2021 to 2024 occurred in an environment of relatively higher interest rates, which dampened demand and encouraged many homeowners with locked-in lower mortgage rates to remain in their homes. On December 30, 2021, the average 30-year mortgage rate was 3.11 percent. By November 10, 2022 it reached 7.08 percent, peaked on October 26, 2023 at 7.79 percent, and has remained in the 6 to 7 percent range since then.[28]

There are several longer-term demographic trends that likely impact housing demand. Prior to the GFC, both marriage and birthrates were declining, with the GFC accelerating the decline.

December 2012 and focused on selling short-term Treasuries and buying long-term Treasuries with the goal of lowering long-term interest rates. Finally, ran from September 2012 to October 2014 and included $40 billion in monthly MBS purchases and later $45 billion in Treasury purchases.

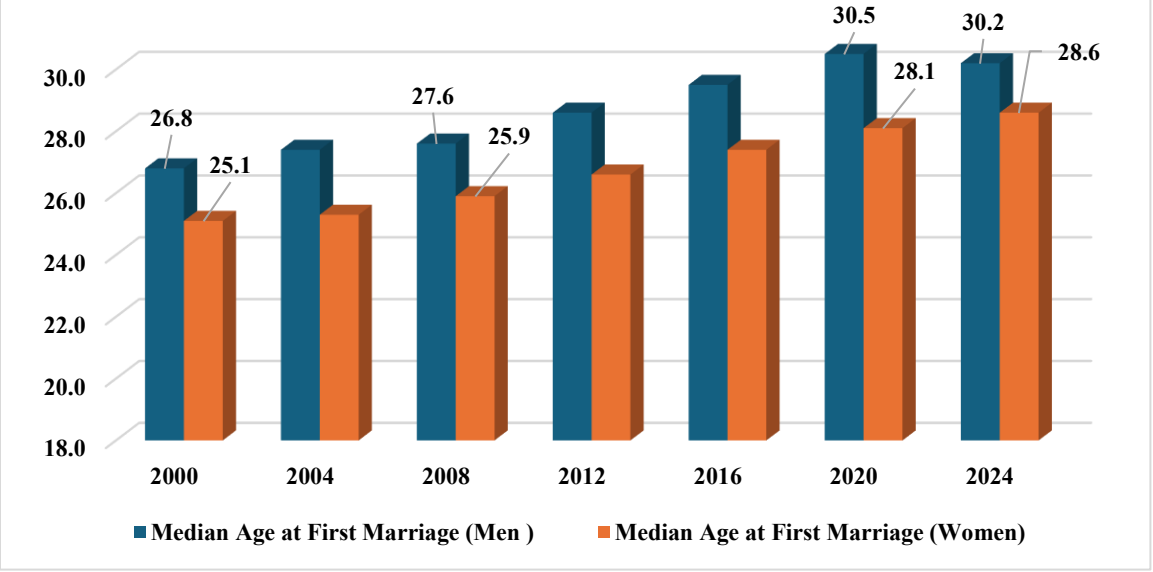
[25] U.S. Bureau of Labor Statistics, Consumer Unit Characteristics: Percent Homeowner without Mortgage by Housing Tenure: Home Owner [CXU980240LB1702M], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CXU980240LB1702M, September 6, 2025.

[26] See: 40 years of Home Buyer and Seller Data: How Does the Profile Compare?
And: The Average Age of First-time U.S. Homebuyers Is 38, an All-time High –CNBC

[27] National Association of Realtors.

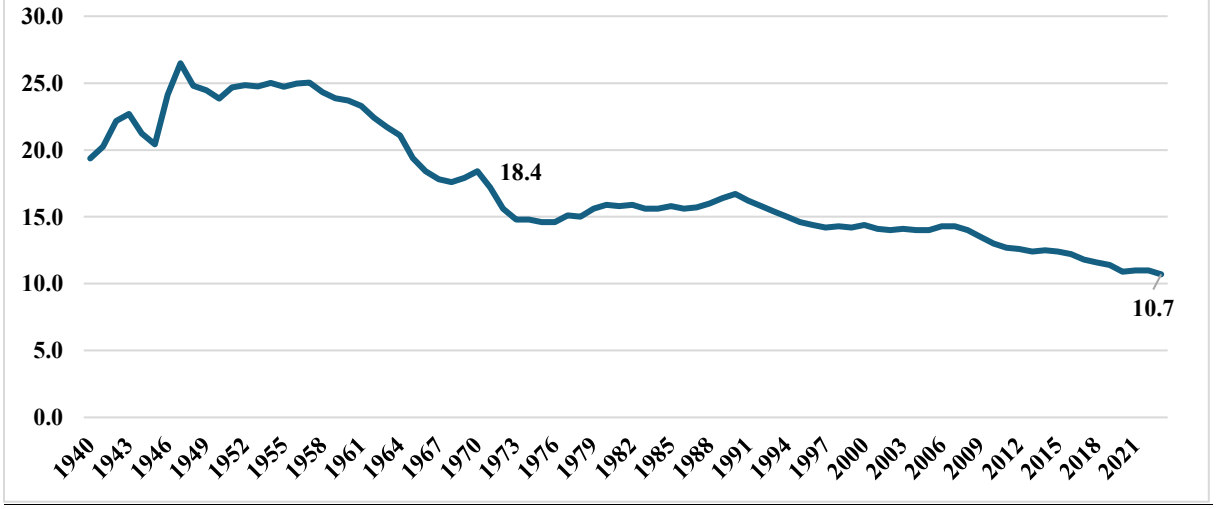
[28] Freddie Mac, 30-Year Fixed Rate Mortgage Average in the United States [MORTGAGE30US], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/MORTGAGE30US, September 6, 2025.

Figure 12: Median Age at First Marriage, 2020-2024



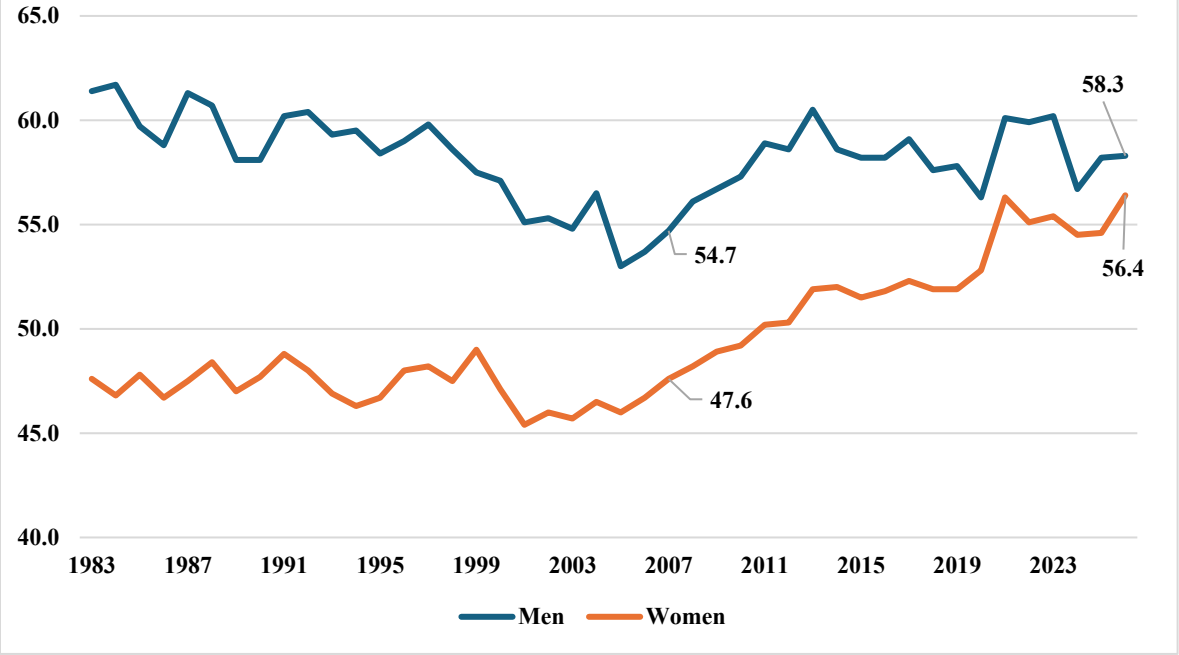
Source: U.S. Census Bureau, Decennial Censuses, 1890 to 1940, and Current Population Survey, March and Annual Social and Economic Supplements, 1947 to 2024.

Figure 13: United States, Crude Birth Rate (Births Per 1,000 People), 1940-2023



Source: World Bank, World Development Indicators.; Colonial Statistics of the US (1890 to 1945)

Figure 14: Percent of Young Adults, 18-34 Years Old, Living At Home, 1983-2024



Source: U.S. Census Bureau, Current Population Survey, March and Annual Social and Economic Supplements, 1981 to 2024. Source of 1980, 1970, and 1960 data: U. S. Census Bureau, 1980 Census of Population, PC80-2-4B, "Persons by Family Characteristics," Table 4. 1970 Census of Population, PC(2)-4B, Table 2. 1960 Census of Population, PC(2)-4B, Table 2.

Typically, higher marriage and birth rates are associated with greater household formation and larger household size, which result in greater demand for housing. When people of childbearing age delay or forego forming a household, and/or having children, demand for housing declines.

Figure 12 reports median age at first marriage for men and women, a crude proxy for household formation. In 2008, the median age was 27.6 years for men and 25.9 years for women. By 2024 it was 30.2 and 28.6 years, respectively (figure 12).[29] Similarly, the number of births per 1,000 people declined from 14.0 in 2008 to 10.7 in 2024 (figure 13).[30] Delayed household formation is also reflected in the percent of young adults (age 18 to 34) living in their parental homes. In 2008, 54.7 percent of young men and 47.6 percent of young women lived at home. In 2025, it is 58.3 and 56.4, respectively (figure 14).

In addition to economic disruptions, potential first-time home buyers face another constraint. According to Freddie Mac there is currently a housing shortage of 3.7 million units (Freddie Mac (2025)). Part of this can be attributed to the rising cost of construction. Like banks, home builders have also been subject to rising regulatory costs, particularly over the last decade. When the cost of construction increases, fewer homes are built, which pushes prices higher. Emrath

[29] U.S. Census Bureau, Decennial Censuses, 1890 to 1940, and Current Population Survey, March and Annual Social and Economic Supplements, 1947 to 2024.
[30] World Bank, World Development Indicators.

(2011, 2016, 2021) estimates that for the average new home buyer, regulatory compliance increased the price of their home by $65,224 in 2011, $84,671 in 2016, and $93,870 in 2021. Similarly, Emrath and Walter (2018, 2022) found that in 2018, 32.1 percent of the cost of an average multifamily development could be attributed to complying with all local, state, and federal regulation. By 2022, only four years later, it was 40.6 percent. The increase in regulatory costs coincides with an increase in housing prices reflected in figure 8. Not surprisingly, by 2024 housing starts had not yet returned to pre-2008-levels.

Post-GFC, life insurers steadily increased residential mortgage holdings from a low of 1.1 percent of total assets in 2011 to 3.6 percent in 2023, and from $56.5 billion in 2011 to $362.6 billion in 2024. This occurred *despite* a collapse in housing construction, a very slow recovery, and the COVID pandemic (2020-2022). Importantly, unlike earlier expansionary periods, demographic trends that accelerated post-GFC (delayed marriage and lower birth rates) stifled rather than accelerated housing demand.

III. Life Insurance Coverage and Mortgages on One-to-Four Family Homes

For many families, home equity is foundational for household financial security. If a home mortgage remains in good standing and is amortized on or ahead of schedule, the result will likely be greater home equity, growing household wealth, and an improved standard of living. According to the U.S. Census, 61.9 percent of U.S. households have own-home equity, which comprises 28.5 percent of aggregate household wealth in the U.S., second only to retirement accounts which comprise 34.1 percent.[31] Similarly, in 2022, 57.3 percent of households said they have life insurance coverage.[32] We explore the potential relationship and complementarity between mortgage debt and life insurance coverage at the household level.

A residential mortgage loan is a long-term financial commitment, typically lasting 30 years. The borrower is exposed to market forces during that time and bears the greatest financial burden at the beginning of the contract, gradually dissipating as the loan is amortized. The unexpected or premature death of the borrower could jeopardize home equity and household net worth. Given the length of mortgage contracts, this is not a trivial risk. First-time homebuyers are usually more financially vulnerable than established households who have built up wealth. By protecting mortgage-holders from this risk, life insurance may impact future household wealth and financial security. Though further research beyond the scope of this study is needed, life insurers may enable such wealth-building financial transaction to take place. For some potential mortgage borrowers, the risk mitigation offered by life insurance may make committing to a mortgage more likely, while others may be compelled to commit to a larger mortgage than they otherwise

[31] Sullivan, et al (2023).
[32] ACLI analysis of the 2022 Federal Reserve Survey of Consumer Finances.

would. Life insurance also allows the insured to take greater financial risk in other areas of their lives.

Practically speaking, the relationship between mortgage borrowing and life insurance coverage should extend to other life insurance products, particularly long-term disability income insurance. Arguably, disability income insurance is most important for younger people, early in their working lives. If a working life is cut short at an early stage due to a debilitating illness or injury, a long-term DI policy could mean the difference between living in your home or being destitute. The majority of disability income coverage provided by life insurers is employer-sponsored and obtained at time of hiring. In 2023, 36.6 million lives were covered by group short-term disability income insurance (STDI), compared to 2.8 million covered by individual STDI. Similarly, 56 million lives are covered by group long-term disability income insurance (LTDI), compared to 2.7 million covered by individual LTDI.[33] At the workplace, 53 percent of full-time private sector workers have access to STDI with a 98 percent participation rate, and 48 percent have access to LTDI with a take-up rate of 97 percent. Because it tends to be obtained through the employer at time of hiring and obtaining additional STDI or LTDI coverage through the employer is usually not an option, it is less likely to enter into a mortgage applicants decision making process. Data limitations preclude a detailed, household-level analysis or a national-level aggregate analysis.

a. Households

Using data from the 2022 Federal Reserve Survey of Consumer Finances, a logistic regression was used to determine if mortgage-holding households are more likely to have life insurance coverage, and whether they are more likely to be heavily insured, defined as having coverage equal to at least four years of annual income. Because many factors determine if, and how much, life insurance a household has, variables controlling for other relevant household characteristics are included in the analysis: age of household head, household income, union membership, veteran or active military status, small business ownership, marriage-centered household, having children in the household, and race.

Household income and retirement savings are expected to be positively associated with having any household life insurance coverage. Households with high income and retirement savings have greater resources with which to purchase coverage and have a greater income flow and more assets to protect. Like life insurance ownership, greater retirement savings is associated with greater financial literacy. Military and/or veteran families and union households are also expected to be more likely to have coverage, primarily due to greater availability through current or past employers. Small business-owning households are expected to be more likely to have coverage in order to protect their business assets. Households where the heads are a married couple and households with children present are expected to be strong indicators of coverage

[33] NAIC (2024).

because there are more people in the household to protect financially. In the case of children, there may be financial dependence for 18 or more years, and in the case of a married couple, financial resources of two individuals may be pooled or interdependent throughout a lifetime.

Life insurance ownership, having a mortgage, being married, having children in the household, and being a veteran/military, union, or small-business-owning household are all binary variables (equal to 1 or 0). Income, retirement savings, and age are in log form and are included as control variables.[34] The following specification is estimated using logistic regression:

$$\begin{aligned}(\textit{Life Insurance Ownership}) = {} & \alpha_0 + \alpha_1(\textit{Mortgage}) + \alpha_2(\textit{Income}) + \alpha_3(\textit{Retirement savings}) + \\ & \alpha_4(\textit{Married}) + \alpha_5(\textit{Children}) + \alpha_6(\textit{Union Household}) + \\ & \alpha_7(\textit{Veteran/Military Household}) + \\ & \alpha_8(\textit{Business-Owning Household}) \pm \\ & \alpha_9(\textit{Age of Household Head}) \pm \alpha_{10}(\textit{Race}) \pm e\end{aligned}$$

For brevity, interpretation of summary results based on the best fit regression are reported in table 3 and complete regression results, including maximum likelihood estimate, Pseudo-R^2 and area-under-curve (AUC) are reported for six potential regressions in table B1 in appendix B. The most favored regression results, including odds ratio point estimates, are reported in table B2.

Estimates indicate that married households (which comprise 47.3 percent of all households); households with children under age 21 (27.9 percent); military or veteran households (14.7 percent), and union households (12.4 percent) are all more likely to have life insurance coverage than households without that particular characteristic. *Having a mortgage is the strongest indicator that a household has any life insurance coverage*. Those with a mortgage are 78.9 percent more likely to have life insurance coverage than those without a mortgage, controlling for the variables above. Similarly, households that include a married couple are 59.6 percent more likely to have any coverage than those that are not married couple-centered; union households are 49.0 percent more likely to be insured than non-union households; military/veteran households are 31.8 percent more likely to have any coverage than non-military/veteran households; and, households with children are 19.0 percent more likely to have coverage than those without children.

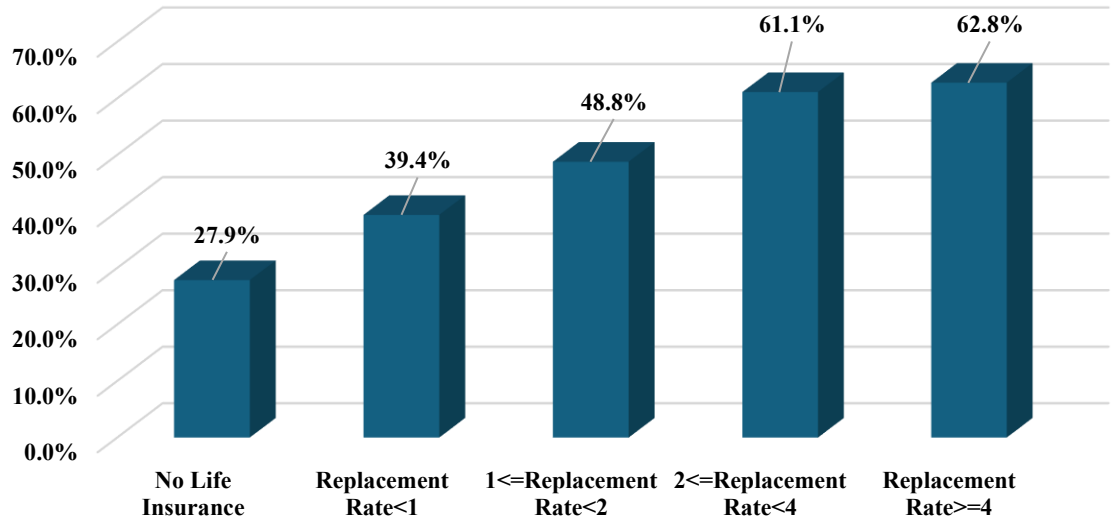
Surprisingly, small-business owning households are -18.7 percent *less* likely to have coverage than those without a business. The reason may be that the definition of a small business is especially broad and includes sole proprietorships, partnerships, and LLCs and does not make a distinction between, for example, someone who is a partner in a 50-person specialized law firm versus someone with a part-time side gig, though including income and retirement savings in the

[34] Variables which included values of zero were transformed using inverse hyperbolic sine (IHS) transformation (see appendix B).

Table 3: Life Insurance Ownership: Logistic Regression Summary

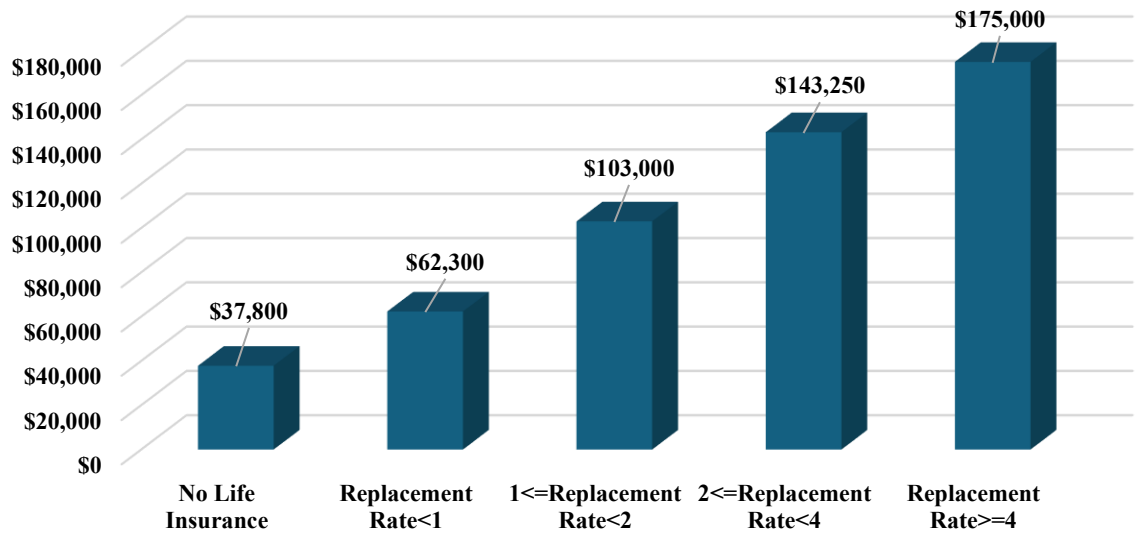
Household Characteristic:	Likelihood of *any* Life Insurance Coverage Compared to Households *without* characteristic:
Mortgage	78.6 percent
Married	59.6 percent
Children (age 21 or less)	19.0 percent
Military or Veteran in Household	31.8 percent
Business-Owning	-18.7 percent
Union Household	49.0 percent

Figure 15: Percent of Households with Mortgage, by Amount of Life Insurance Coverage, 2022



Source: ACLI analysis of the Federal Reserve Survey of Consumer Finances, 2022.

Figure 16: Median Total Household Debt , By Life Insurance Replacement Rate, 2022



Source: ACLI analysis of the Federal Reserve Survey of Consumer Finances, 2022.

Table 4: Life Insurance Ownership: Logistic Regression Summary

Household Characteristic:	**Likelihood of Being Highly Insured (4 times annual total income or greater) Compared to Households *without* characteristic:**
Mortgage	85.5 percent
Married	57.5 percent
Children (age 21 or less)	117.8 percent
Military or Veteran in Household	27.5 percent
Business-Owning	36.5 percent
Union Household	21.4 percent

specification controls for some of that distinction. Additionally, the early years of a small business are typically lean and a majority of small businesses fail within a few years. Until a small firm generates a stable income flow, life insurance may be considered a luxury. When an enterprise is well-established, it may be a necessity. This narrative is supported in the regression results below. A more granular analysis may shed light on this distinction, but is outside the scope of this study and would require business-specific data.

Mortgage-holders are considerably more likely to have life insurance coverage than non-mortgage holders, but a modest amount of coverage only offers modest protection. The first years of a mortgage loan may require a greater amount of insurance in-force to ensure complete protection. Consequently, the greater the debt, the more life insurance coverage is needed relative to income. If life insurance and having a mortgage are complementary, we would expect that mortgage holders are not only more likely to have any coverage, but also should have greater coverage than non-mortgage holders. Figure 15 groups households by amount of life insurance coverage they have, measured by replacement rate (i.e. percent of total household income that life insurance benefits would replace), ranging from no life insurance coverage to four or more times annual total income. There is a clear positive correlation between amount of coverage and having a mortgage. Households that have a replacement rate of 2 or greater are consistently more likely to have a mortgage.

This relationship does not just apply to mortgage debt, but also total debt. Figure 16 shows that households with the greatest life insurance coverage in terms of replacement rate also have the greatest household debt, the largest component of which is typically mortgage debt.

In order to establish causation, a specification similar to the one above, using the same independent variables as the previous regression, with household that are heavily insured as the dependent variable. Expected results were similar to those in the previous specification. A logistic regression was used to estimate the following model:

$$\begin{aligned}(\textit{Own 4 Times or More of Total Income}) = {} & \beta_0 + \beta_1(\textit{Mortgage}) + \beta_2(\textit{Income}) + \\ & \beta_3(\textit{Retirement savings}) + \beta_4(\textit{Married}) + \\ & \beta_5(\textit{Children}) + \beta_6(\textit{Union Household}) + \\ & \beta_7(\textit{Veteran/Military Household}) + \\ & \beta_8(\textit{Business-Owning Household}) \pm \\ & \beta_9(\textit{Age of Household Head}) \pm \beta_{10}(\textit{Race}) \pm u\end{aligned}$$

For brevity, table 4 reports summary results with full results reported in tables B3 and B4 in appendix B. In total, about 13.3 percent of all households are heavily insured. Households with a mortgage are 85.5 percent more likely to be heavily insured than those without a mortgage, establishing a correlation at the household-level between the amount of life insurance coverage and mortgage debt, though not necessarily causation. Importantly, having children under age 21

in the household is the strongest indicator of whether a household is heavily insured. Households with children are 117.8 percent more likely to be heavily insured compared to those without children. Additionally, married couple-centered households are 57.5 percent more likely to be heavily insured compared to households that are not marriage-centered; business-owning households are 36.5 percent more likely to be heavily insured compared to non-business-owning households; military or veteran households are about 27.5 percent more likely to be heavily insured compared to non-military/veteran households; and, union households are 21.4 percent more likely to be heavily insured than non-union households.

Unlike the previous regression results, which found that small business-owning households are less likely to have any life insurance coverage, the current regression shows that small business-owning households are 36.5 percent *more* likely to be heavily insured than those who do not own a small business. As discussed above, these results are likely explained by the heterogeneity of small businesses. Those that are heavily insured are more likely to be established and may be focused on succession planning and preserving wealth, rather than on simply establishing themselves.

b. National

Though the correlation between life insurance coverage and mortgage debt is robust at the household level, does it apply nationally? When a nation has greater mortgage debt, is there also greater life insurance coverage? Data on neither the number nor percent of households with coverage is available on an annual or historical basis. However, annual data on the total amount of life insurance in-force is available from 1901 through 2023, as well as total aggregate mortgage debt, total population growth, growth of population under age one, real GNP growth, inflation, and aggregate residential mortgage principal outstanding. Though the number of households with life insurance coverage has been steadily declining, the total amount of life insurance in-force remains high.

The following specification estimates the determinants of the annual percentage change in life insurance coverage (in-force face amount). All independent variables are expected to be positively related to the change in life insurance in-force:

$$\begin{aligned}\textit{(Percent Change, Life Insurance In-Force)} = {} & \gamma_0 + \gamma_1\,\textit{(percent change in aggregate residential mortgage debt)} + \gamma_2\,\textit{(population growth)} + \\ & \gamma_3\,\textit{(inflation)} + \gamma_4\,\textit{(real GDP growth)} + \\ & \gamma_5\,\textit{(percent change in population under age 1)} + \\ & \gamma_6\,\textit{(percent change in number of marriages)} \pm \varepsilon\end{aligned}$$

Six regression results are reported in table 5, with the favored regression in column 1. All regressions were corrected for autocorrelation. Aggregate mortgage debt and inflation are

Table 5: Total Life Insurance In-force and Mortgage Debt

	1	2	3	4	5	6
Independent Variable	**Annual Percent Change of Life Insurance In-Force**	**Annual Percent Change of Life Insurance In-Force**	**Annual Percent Change of Life Insurance In-Force**	**Annual Percent Change of Life Insurance In-Force**	**Annual Percent Change of Life Insurance In-Force**	**Annual Percent Change of Life Insurance In-Force**
Constant	0.0113 (0.0125)	0.0102 (0.0165)	0.0185 (0.0121)	0.0387*** (0.0096)	0.0331*** (0.0090)	0.0357*** (0.0093)
Aggregate Mortgage Debt, percent change [a]	0.2846*** (0.0739)	--	0.3325*** (0.0700)	0.3876*** (0.0762)	0.3473*** (0.0707)	0.4404*** (0.0702)
Total Population, growth	2.0706** (0.8648)	3.5631*** (0.9283)	1.3616 (0.8275)	--	--	--
Inflation	0.2873*** (0.0688)	0.3459*** (0.0667)	0.2766*** (0.0649)	--	0.2577*** (0.0654)	--
Real GDP, percent change	0.0586 (0.0413)	0.0628 (0.0420)	--	--	0.0453 (0.0403)	--
Population Under Age 1, percent change	-0.0519 (0.0418)	-0.0473 (0.0454)	--	0.0186 (0.0410)	--	--
Marriages, percent change	0.0214 (0.0318)	0.0557* (0.0309)	--	0.0576* (0.0655)	--	--
R^2	0.7481	0.7308	0.7352	0.6998	0.7328	0.6914
Corrected for Autocorrelation[****]	Yes	Yes	Yes	Yes	Yes	Yes
Durban-Watson	2.0898	1.9544	2.1016	1.9880	2.0537	1.9729
Observations	122	122	122	122	122	122
Years	1901-2022	1901-2022	1901-2022	1901-2022	1901-2022	1901-2022

[a] Includes 1-to-4 family and apartment. From: 1900 to 1945, Colonial Statistics of the United States' 1946 to present, Federal Reserve, Flow of Funds.

*90 percent confidence.

**95 percent confidence.

***99 percent confidence.

****Autocorrelation was assessed using the Durbin-Watson statistic across all model specifications. Where evidence of serial correlation was present, autoregressive terms were added to correct for it. All models were estimated using SAS's PROC AUTOREG, which internally computes model selection criteria such as the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). While these metrics were not explicitly used to guide model selection, they were available in the output and may have informed SAS's internal optimization routines.

significant at the 99 percent confidence level, and are positive as anticipated, and total population growth is significant at the 95 percent confidence level. Growth in. Regression 3 in table 6 withholds the three statistically insignificant variables, percent change in real GDP, growth in population under age one, and percent change in marriages, and offers a similar result.

Pearson correlation coefficients indicate no multicollinearity, with the greatest correlation between percent change in aggregate residential mortgage debt and population growth (0.358), and little correlation between population growth and percent change in population under age 1 (0.262), suggesting that multicollinearity is not driving results. The regression reported in

column 2 removes growth in aggregate mortgage debt from the specification, resulting in a slightly lower R^2 (0.731 vs. 0.748), a greater impact of both population growth and inflation, as well as a greater coefficient value for percent change in marriages, albeit at the 90 percent confidence level.

Based on our favored regression, for every one percent increase in mortgage debt, life insurance in-force grows by 0.285 percent; a one percent increase in total population leads to a 2.07 percent increase in life insurance coverage; and, a one percent rise in inflation increases life insurance in-force by 0.287 percent. Overall, the model explains 74.8 percent of the variation in life insurance growth, indicating a moderately strong fit.

IV. Affordable and Middle-Class Housing

Life insurers have participated in affordable housing investment and development since at least the 1930s. As discussed above, from 1938 to 1942 several companies attempted to usher in a "third way" between public and suburban housing by constructing 50,000 middle-income *apartments* aimed at families who were neither wealthy enough to buy a home nor poor enough for public assistance. Tanaka (2017) details nine New York-based projects. These efforts predate large-scale government-run low-income housing projects and more recent impact investing projects. Life insurers were motivated to pursue housing development because it offered solid returns, an opportunity to diversify, and seemed politically prudent at the time.

Today, life insurers contribute to the affordable housing sector through low-income housing tax credits (LIHTC) municipal housing bonds. These areas are explored in this section, as well as an analysis of zip-codes of properties on which life insurers hold a mortgage.

a. Low-Income Housing Tax Credits (LIHTC)

The Low-Income Housing Tax Credit (LIHTC) is the largest federal funding source for housing development.[35] Housing developers rely on LIHTC exchange tax credits to make housing units more affordable. LIHTCs create an incentive for developers to invest in affordable housing by offering tax credits in exchange for a portion of a property's units bring 'affordable'.[36] The Internal Revenue Service (IRS) distributes the LIHTC funding on the federal level, while states'

[35] Government Accountability Office, *Low-Income Housing Tax Credit: Opportunities to Improve Oversight* (Washington DC: Government Accountability Office, December 14, 2023), https://www.gao.gov/products/gao-24-107064.

[36] To qualify for LIHTC, properties must pass the 20-50 test or the 40-60 test. The 20-50 test refers to properties reserving 20 percent of occupied units for tenant with an income of 50 percent, or less, of the Area Median Income (AMI), adjusting for family size. The 40-60 test, in contrast, is when the properties reserving 40 percent of occupied units for tenant with an income of 60 percent, or less, of AMI, adjusting for family size. The 2018 Consolidated Appropriation Act (P.L. 115-141) established a third income test where property owner can average tenants' incomes to 60 percent of AMI. In conjunction, there is the gross rent test, ensuring the total rent for the building does not exceed 30 percent of either 50 percent or 60 percent of AMI. For more information see Mark Keightley, *An Introduction to the Low-Income Housing Tax Credit*, https://crsreports.congress.gov/product/pdf/RS/RS22389.

Housing Finance Agencies (HFA) allocate the credits to developers who oversee their use with the U.S. Department of Housing and Urban Development (HUD).[37] Additionally, federal law mandates that state HFAs develop qualified allocation plans (QAP) and prioritize applications that serve those with the lowest-income.[38] The Congressional Research Service (CRS) estimates that LIHTC has financed 53,032 residential properties and 3.65 million units between 1987 to 2022.[39] The program costs $13.5 billion annually.[40]

There are two types of LIHTC, a 4 percent credit and a 9 percent credit. The 9 percent credits qualify for 70 percent of the project's eligible cost basis. Additionally, 9 percent credit projects do not qualify for tax-exempt bond financing and other federal subsidies, except for federal loans (e.g., loans from the Housing Trust Fund). The 4 percent credit, in contrast, covers 30 percent of the project's eligible cost basis; however, these projects qualify for other federal funding subsidies and tax-exempt bonds financing.[41] Despite these differences, recipients of both types of LIHTC are allowed to use the subsidy for both new and existing buildings costs.[42] Lastly, both the 4 percent and the 9 percent credits are claimed over ten years.[43] Because HFAs only allocate LIHTC for a decade, developers require private financing to assist with upfront costs. Therefore, LIHTC recipients seek investors either directly or partner with an intermediary between developers and investors. In this type of limited partnership, the syndicator locates a private lender, manages the project's fund (i.e., a proprietary fund or a multi-investor fund) and oversees acquisition and LIHTC compliance. Typically, the investors are either individuals or corporations like life insurers.[44]

The federal government established LIHTC through the Tax Reform Act of 1986 (P. L. 99-514). Since the Tax Reform Act, Congress passed several laws to expand the program. For instance, the Housing and Economic Recovery Act of 2008 (P.L. 110-289; HERA) requires HUD to publish annual statistics on LIHTC properties. Furthermore, the Taxpayer Certainty and Disaster Tax Relief Act of 2020 (P. L. 116-260) permanently established the 4 percent tax credit as the minimum credit for a LIHTC property. The law also allowed for increased credit allocation for

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[37] Government Accountability Office, *Low-Income Housing Tax Credit: Opportunities to Improve Oversight*, https://www.gao.gov/products/gao-24-107064.
[38] Mark Keightley, *An Introduction to the Low-Income Housing Tax Credit*, https://crsreports.congress.gov/product/pdf/RS/RS22389.
[39] Office of Policy Development and Research (PD&R), *Low-Income Housing Tax Credit (LIHTC): Property Level Data* (Washington, DC: U.S. Department of Housing and Urban Development (HUD), Access 12/17/2024), https://www.huduser.gov/portal/datasets/lihtc/property.html.
[40] CRS used tax expenditure data for the federal fiscal years 2022 to 2026 from the U.S. Congress Joint Committee on Taxation report, *Estimates of Federal Tax Expenditures for Fiscal Years 2022-2026* (JCX-22- 22), published on December 22, 2022. For more information see Mark Keightley, *An Introduction to the Low-Income Housing Tax Credit* (Washington, DC: Congressional Research Service, Updated April 2023). https://crsreports.congress.gov/product/pdf/RS/RS22389.
[41] Ibid.
[42] 26 U.S.C.A. § 42, I.R.C. § 42
[43] Mark Keightley, *An Introduction to the Low-Income Housing Tax Credit*, https://crsreports.congress.gov/product/pdf/RS/RS22389.
[44] Government Accountability Office, *Low-Income Housing Tax Credit: The Role of Syndicators* (Washington DC: Government Accountability Office, February 16, 2017), https://www.gao.gov/products/gao-17-285r.

Figure 17: Total Dollar Amount of Life Insurers' LIHTC Investments

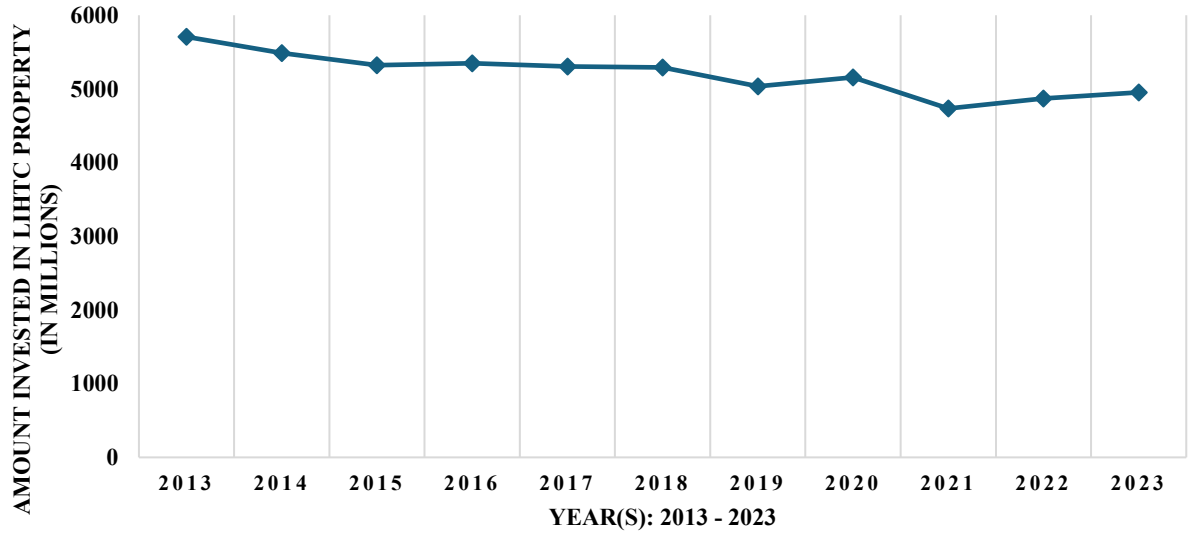
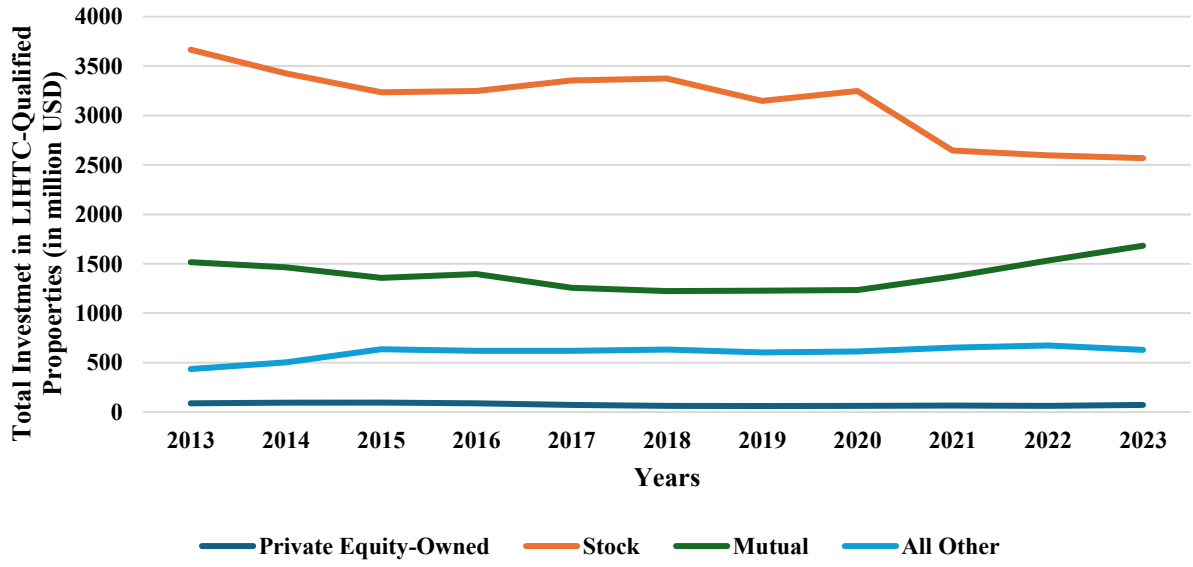


Figure 18: Life Insurer LIHTC investments, 2013-2023, by Ownership Structure



buildings located in a qualified disaster zone in 2021 and 2022.[45] Recently, the Inflation Reduction Act of 2022 (P.L. 117-169; IRA) allowed for the overlap of LIHTC and Section 48 energy investment tax credit or the Section 45L new energy efficient homes.[46]

To support qualified LIHTC properties, life insurers provide private financing to assist with the upfront costs. These costs can include land acquisition, construction, renovation, architectural and engineering services, and legal and administrative fees. In exchange, life insurers gain access to the property-linked tax credits, which can be used to offset own tax liabilities.

Insurers, across industries, have increasingly grown their participation in the LIHTC space since 1986. In the early 2000s, the insurance industry was the third largest LIHTC investor, followed by the banking industry (second place) and Fannie Mae and Freddie Mac (first place).[47] However, in an effort to better reflect the low-risk nature of LIHTCs, in 2004 the National Association of Insurance Commissioners (NAIC) reduced the risk-based capital (RBC) requirements for LIHTC investments. This enabled insurers to invest more in LIHTC-qualified properties. As of 2023, the NAIC estimated that insurance companies' investment into qualified LIHTC properties grew to $8.9 billion, a 17.4 percent increase over the last five years, with property and casualty insurance companies holding about $2.5 billion, health insurance companies $151 million, and life insurers $5.0 billion.[48] The collaboration between insurers and real estate developers through the LIHTC program exemplifies a successful model of leveraging private funding to achieve public goals, creating long-lasting positive impacts on housing development.

In 2023, life insurers held $5.0 billion in LIHTC-qualified investments and about $10.3 billion in housing-related municipal bonds.[49] Based on NAIC data from 2013 to 2023, life insurers invested on average $5.2 billion from 2013 to 2023. Figure 17 displays the total dollar investment life insurers held in qualified LIHTC properties from 2013 to 2023. During that time period, annual holdings ranged from a low of $4.73 billion in 221 to a high of $5.71 billion in 2013.

Life insurance companies have different types of ownership structures, with the most prominent being stock companies, mutuals, private-equity, and fraternal. Stock life insurance companies are the most prominent in LIHTC-qualified property investment, comprising 60 percent of life insurers in this space. However, from 2018 to 2023, mutual life insurance companies have

[45] Qualified disaster zones are areas listed as a federal declared disaster area due to an emergency caused by a natural disaster.
[46] Mark Keightley, *An Introduction to the Low-Income Housing Tax Credit*, https://crsreports.congress.gov/product/pdf/RS/RS22389
[47] AEGON USA Realty Advisors and the Affordable Housing Investors Council conducted an analysis indicating that banks and the government sponsored enterprises (GES), Fannie Mae and Freddie Mac, comprised 60 percent of LIHTC buyers before NAIC changed the RBC standards in 2004. Zipperer, J. (2004, September 1). *Corporate Investors: Who They Are and What They Want.* Affordable Housing Finance, https://www.chicagofed.org/publications/chicago-fed-letter/2018/390
[48] Center for Insurance Policy & Research (CIPR), *Social Impact Investing in the U.S. Insurance Industry*, National Association of Insurance Commissioners (NAIC), March 17, 2025, accessed July 29, 2025, https://content.naic.org/sites/default/files/cipr-report-social-impact-investing-us-insurance-industry.pdf
[49] ACLI analysis of NAIC annual statements.

increased their investment holdings of LIHTC-qualified properties by 37.5 percent. Graph two displays the total dollar investments into LIHTC by life insurer type from 2013 to 2023.

In 2025, the One Big Beautiful Bill Act (OBBB; P.L. 119-23) made certain LIHTC features permanent. For instance, the law permanently increases state's nine percent allocations for the LIHTC by 12 percent starting in 2026. In other words, the 12 percent increase will enable states to allocate more tax credits through the competitive allocation process. Next, OBBB reduces the private activity bond (PAB) threshold for four percent qualified properties from 50 percent to 25 percent, provided at least five percent of the land and building costs are PAB financed after December 31, 2025. [50] For example, a project valued at $10 million will need $2.5 million PAB financing rather than $5 million to qualify for the four percent tax credit. Lastly, OBBB expands the interest deductibility for investors' taxes by allowing depreciation and amortization to be added back to earnings, letting developers deduct more interest without using slower depreciation methods.[51]

b. Municipal Housing Bonds

Life insurers also invest in communities via municipal bonds, including bonds dedicated to housing. In 2023, life insurers held about $10.3 billion in municipal housing bonds, up from $8.0 billion in 2022. In 2022, they held housing bonds in each state and DC, and in 2023 they held housing bonds in 49 states and DC. Virginia and New York top the list at $1.5 billion and $1.4 billion, respectively.

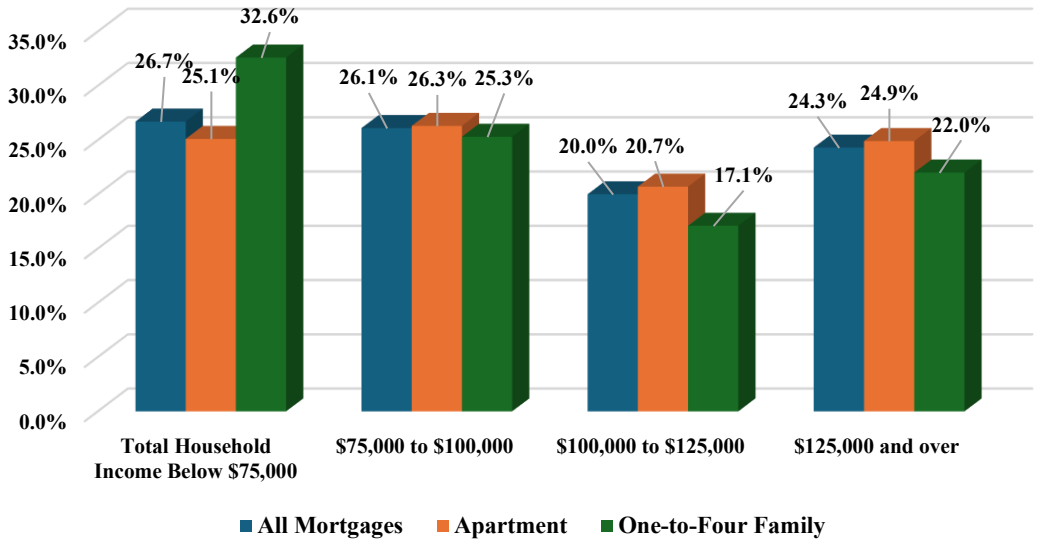
The majority of municipal bonds they hold are dedicated to infrastructure (transportation, utilities, and capital improvements) or education, some are specifically dedicated to housing. Typically, housing bonds are used to finance the development and upkeep of affordable housing.

c. Zip Code-Level Analysis

Life insurers invest in mortgages on properties throughout the country, with properties ranging from lower to high-income. Importantly, they also hold mortgages on middle-income properties. In order to determine how much the life insurance industry invests in residential mortgages in middle income communities, life insurance company 2022 annual statutory statement data was used to identify zip code-level locations of apartment buildings and 1 to 4 family homes on which life insurers hold a mortgage.[52] The zip codes of 94.7 percent of apartment buildings and 78.1 percent one-to-four family homes on which life insurers hold a mortgage were identified

[50] Peter Lawrence, "Final Reconciliation Bill Permanently Expands LIHTC, NMTC and OZ Incentive; but Does Not Include HTC Provisions," *Notes from Novogradac*, July 3, 2025, https://www.novoco.com/notes-from-novogradac/final-reconciliation-bill-permanently-expands-lihtc-nmtc-and-oz-incentive-but-does-not-include-htc-provisions.
[51] Donald N. Bernards and Garrick Gibson, "What the One Big Beautiful Bill Act Means for LIHTC," *Baker Tilly*, August 27, 2025, https://www.bakertilly.com/insights/what-one-big-beautiful-bill-act-means-lihtc.
[52] Zip codes were developed as a tool for more efficient mail delivery, not for geographic or demographic analysis, so these results should be interpreted with caution.

Figure 19: Distribution of Life Insurer Mortgage Holdings, by Median Household Income in Zip Code, 2022



Source: ACLI analysis of NAIC annual statements.

and remaining principal aggregated by zip code. The properties were then matched with median household income in the zip code.

Based on the location of properties that could be identified, we determined that life insurers invest in mortgages on one-to-four family and apartment properties in 33,642 out of a total of 41,704 zip codes in the U.S. (80.7 percent of all zip codes). Based on remaining principal, over half of total life insurer residential mortgage investment and 58 percent of one-to-four family mortgage investment is on properties located in zip codes with a median annual household income of $100,000 or less (figure 19). Additionally, about a third of all one-to-four family mortgages and a quarter of multifamily mortgages are on properties located in zip codes with a median household income below $75,000.

V. Conclusion

Life insurers have historically played a stabilizing and growth-oriented role in the U.S. economy and financial markets, particularly during periods of demographic expansion and rising housing demand. Their business model, centered on long-term liabilities, naturally aligns with conservative, long-duration assets such as residential mortgages. This alignment has led to increased exposure to residential mortgage investments during key expansionary periods, often

characterized by low interest rates, low inflation, and rapid population growth driven by immigration, geographic shifts, and evolving household preferences.

Our analysis finds that households with mortgages, married couples, families with children, and those affiliated with unions or the military are significantly more likely to hold life insurance coverage. These household characteristics have declined over recent decades, paralleling a broader decline in life insurance ownership since the 1970s. At the national level, a 1 percent increase in aggregate mortgage debt is associated with a 0.285 percent increase in aggregate life insurance coverage, after controlling for economic and demographic changes.

Life insurers play a meaningful role in supporting affordable housing through investments in LIHTCs and municipal housing bonds. Contract-level data show that half of all residential mortgage investments—and 58 percent of one-to-four family mortgage investments—are located in zip codes with median household incomes below $100,000. Additionally, life insurers hold approximately $10.3 billion in municipal bonds dedicated to housing.

While this study supports, but does not confirm, the hypothesis that mortgage debt and life insurance coverage are complementary, further research is needed to establish causality. Future studies can explore how life insurance utilization evolves over the life of a mortgage, and whether life insurance ownership influences multi-generational financial outcomes. A deeper examination of small business households, taking account of the heterogeneity and life-cycle of small businesses, may also yield valuable insights, as well as a deeper analysis of zip-code level mortgage investment.

In sum, life insurers not only invest in housing finance but also support household financial resilience and economic mobility. Their contributions to housing through investment and insurance protection underscore the importance of recognizing life insurance as a vital financial tool that supports homeownership and long-term financial planning.

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APPENDIX A: Defining Residential Mortgages

Life insurers invest in housing through three vehicles: mortgages on one-to-four family and apartment properties; mortgage-backed securities; and municipal housing bonds. The term 'residential mortgage' frequently refers to single-family or 1-to-4 family properties. Since this study is more broadly concerned with the relationship between the life insurance industry and housing, we use a broader definition where both 1-to-4 family and multifamily properties are considered 'residential'.

Determining how much life insurers hold in these specific investments is complicated by differences in definition, coverage, data reporting and availability, length of time-series, granularity of data reported, and compatibility of different data sources. NAIC annual statements, the Federal Reserve Flow of Funds, and the American Council of Life Insurers (ACLI) Mortgage Loan Portfolio Profile (MLPP) and Fact Book all report data on different aspects housing investment, as do the U.S. Census and ACLI historical data.

Mortgage holdings on 1-to-4 family and multifamily properties is only reported in the Federal Reserve Flow of Funds and ACLI's MLPP. For the sake of consistency, and to ensure the longest time-series possible, all residential mortgage investment analysis utilizes data from Federal Reserve Flow of Funds (1946-present) and U.S. Department of Commerce, Historical Statistics of the United States: Colonial Times to 1970.

NAIC annual statements are the only source of life insurer MBS holdings data. Analysis of annual statements can discern between RMBS and CMBS. However, apartment buildings are usually categorized as CMBS. It is not possible to determine what percent of any single CMBS security is comprised of mortgages on such properties.

APPENDIX B: Detailed Regression Results

Table B1: Life Insurance Ownership, Logistic Analysis

	Dependent Variable: Life Insurance Ownership					
Intercept	-6.677*** (0.002)	-7.530*** (0.002)	-6.657*** (0.002)	-6.600*** (0.002)	-8.091*** (0.001)	-0.429*** (0.000)
Mortgage	0.580*** (0.000)	--	0.581*** (0.000)	0.597*** (0.000)	0.659*** (0.000)	0.806*** (0.000)
Ln(Total Income)	0.387*** (0.000)	0.471*** (0.000)	0.380*** (0.000)	0.387*** (0.000)	0.520*** (0.000)	--
Ln(Total Retirement Savings)	0.017*** (0.000)	0.016*** (0.000)	0.018*** (0.000)	0.016*** (0.000)	--	--
Married	0.467*** (0.000)	0.522*** (0.000)	0.394*** (0.000)	0.420*** (0.000)	--	0.812*** (0.000)
Children under 21	0.174*** (0.000)	0.261*** (0.000)	0.142*** (0.000)	0.136*** (0.000)	--	-0.038*** (0.000)
Union Household	0.399*** (0.000)	0.422*** (0.000)	0.438*** (0.000)	--	--	--
Business-Owning Households	-0.207*** (0.000)	-0.201*** (0.000)	-1.221*** (0.000)	--	--	--
Military or Veteran Household	0.276*** (0.000)	0.305*** (0.000)	0.288*** (0.000)	--	--	--
Ln(Age of Household Head)	0.457*** (0.000)	0.467*** (000)	0.480*** (0.000)	0.458*** (0.000)	0.508*** (0.000)	--
Black	0.558*** (0.000)	0.537*** (0.000)	--	--	--	--
Hispanic	-0.634*** (0.000)	-0.656*** (0.000)	--	--	--	--
Asian	-0.202*** (0.000)	-0.193*** (0.000)	--	--	--	--
Pseudo-R^2	0.116	0.105	0.102	0.097	0.089	0.067
AUC	0.7183	0.7082	0.7051	0.7010	0.701	0.669

Notes: U.S. Federal Reserve, Survey of Consumer Finances, 2022. Because of zero values, rather than relying on the natural log, total income and total retirement savings were transformed via inverse hyperbolic sine transformation (IHS). Standard error in parenthesis. Observations: 22,880.

***99 percent confidence.

**95 percent confidence.

*90 percent confidence.

Inverse Hyperbolic Sine (IHS) Transformation

- Method: Use the IHS transformation: log⁡(y+y2+1)log(*y*+*y*2+1).
- Rationale: This transformation behaves similarly to the log transformation and is defined for zero and negative values.
- Considerations: While it approximates the log transformation for large values, it can behave differently for small values, potentially affecting elasticity estimates
- Using SAS: transformed_x = arsinh(x);

We tested for multicollinearity using Pearson Correlation Coefficients, and found the greatest correlation between age of household head and children in the household was -0.400, well away from threshold of concern and indicating no significant multicollinearity.

Table B2: Life Insurance Ownership, Logistic Analysis

	Dependent Variable: Life Insurance Ownership			
	Maximum Likelihood Estimate	**Odds Ratio Point Estimate**	**95 percent Wald Confidence Limits, Low**	**95 percent Wald Confidence Limits, High**
Intercept	-6.677*** (0.002)	--	--	--
Mortgage	0.580*** (0.000)	1.786	1.785	1.786
Total Income	0.387*** (0.000)	1.472	1.472	1.472
Total Retirement Savings	0.017*** (0.000)	1.017	1.017	1.017
Married	0.467*** (0.000)	1.596	1.596	1.596
Children under 21	0.174*** (0.000)	1.190	1.190	1.191
Union Household	0.399*** (0.000)	1.490	1.489	1.491
Business-Owning Households	-0.207*** (0.000)	0.813	0.813	0.814
Military or Veteran Household	0.276*** (0.000)	1.318	1.317	1.318
Log(Age of Household Head)	0.457*** (0.000)	1.579	1.579	1.580
Black	0.558*** (0.000)	1.747	1.746	1.748
Hispanic	-0.634*** (0.000)	0.531	0.530	0.531
Asian	-0.202*** (0.000)	0.817	0.817	0.818
Pseudo-R^2	0.116			
AUC	0.7183			

Notes: U.S. Federal Reserve, Survey of Consumer Finances, 2022. Because of zero values, rather than relying on the natural log, total income and total retirement savings were transformed via inverse hyperbolic sine transformation (IHS). Standard error in parenthesis. Observations: 22,880.

***99 percent confidence.

**95 percent confidence.

*90 percent confidence.

Table B3: Heavily Insured, Logistic Analysis

	Dependent Variable: Life Insurance Coverage Equal or Greater than 4 times Total Annual Income					
Intercept	-0.561*** (0.002)	-1.065*** (0.002)	-0.600*** (0.002)	-0.589*** (0.002)	-1.952*** (0.002)	-2.936*** (0.000)
Mortgage	0.618*** (0.000)	--	0.619*** (0.000)	0.637*** (0.000)	0.844*** (0.000)	0.710*** (0.000)
Ln(Total Income)	0.078*** (0.000)	0.139*** (0.000)	0.078*** (0.000)	0.079*** (0.000)	0.297*** (0.000)	--
Ln(Total Retirement Savings)	0.043*** (0.000)	0.042*** (0.000)	0.043*** (0.000)	0.044*** (0.000)	--	--
Married	0.455*** (0.000)	0.557*** (0.000)	0.438*** (0.000)	0.482*** (0.000)	--	0.558*** (0.000)
Children under 21	0.778*** (0.000)	0.875*** (0.000)	0.766*** (0.000)	0.757*** (0.000)	--	
Union Household	0.194*** (0.000)	0.229*** (0.000)	0.207*** (0.000)	--	--	--
Business-Owning Households	0.311*** (0.000)	0.318*** 0.000)	0.309*** (0.000)	--	--	--
Military or Veteran Household	0.243*** (0.000)	0.286*** (0.000)	0.248*** (0.000)	--	--	--
Ln(Age of Household Head)	-0.890*** (0.000)	-0.894*** (0.000)	-0.882*** (0.000)	-0.865*** (0.000)	-1.017*** (0.000)	--
Black	0.149*** (0.000)	0.108*** (0.000)	--	--	--	--
Hispanic	-0.247*** (0.000)	-0.280*** (0.000)	--	--	--	--
Asian	-0.021*** (0.001)	-0.015*** (0.000)	--	--	--	--
Pseudo-R^2	0.105	0.094	0.104	0.100	0.068	0.084
AUC	0.697	0.678	0.696	0.692	0.653	0.674

Notes: U.S. Federal Reserve, Survey of Consumer Finances, 2022. Because of zero values, rather than relying on the natural log, total income and total retirement savings were transformed via inverse hyperbolic sine transformation (IHS). Standard error in parenthesis. Observations: 22,880.

***99 percent confidence.

**95 percent confidence.

*90 percent confidence.

Table B4: Heavily Insured, Logistic Analysis

	Dependent Variable: Life Insurance Coverage Equal or Greater than 4 times Total Annual Income			
	Maximum Likelihood Estimate	**Odd Ratio Point Estimate**	**95 percent Wald Confidence Limits, Low**	**95 percent Wald Confidence Limits, High**
Intercept	-0.561*** (0.002)	--	--	--
Mortgage	0.618*** (0.000)	1.855	1.854	1.856
Total Income	0.078*** (0.000)	1.081	1.080	1.081
Total Retirement Savings	0.043*** (0.000)	1.043	1.043	1.043
Married	0.455*** (0.000)	1.575	1.575	1.576
Children under 21	0.778*** (0.000)	2.178	2.176	2.179
Union Household	0.194*** (0.000)	1.214	1.213	1.215
Business-Owning Households	0.311*** (0.000)	1.365	1.365	1.366
Military or Veteran Household	0.243*** (0.000)	1.275	1.275	1.276
Log(Age of Household Head)	-0.890*** (0.000)	0.411	0.410	0.411
Black	0.149*** (0.000)	1.161	1.160	1.162
Hispanic	-0.247*** (0.000)	0.781	0.781	0.782
Asian	-0.021*** (0.001)	0.979	0.978	0.981
Pseudo-R^2	0.105			
AUC	0.697			

Notes: U.S. Federal Reserve, Survey of Consumer Finances, 2022. Because of zero values, rather than relying on the natural log, total income and total retirement savings were transformed via inverse hyperbolic sine transformation (IHS). Standard error in parenthesis. Observations: 22,880.

***99 percent confidence.

**95 percent confidence.

*90 percent confidence.