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Social Impact Investing in the U.S. Insurance Industry

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Social Impact Investing in the U.S Insurance Industry

Kelly D. Edmiston, Ph.D.*

Anna P. Fitzgerald, Ph.D.

Patrick Cho, Ph.D.†

Jeffrey R. Czajkowski, Ph.D.‡

Center for Insurance Policy & Research§

National Association of Insurance Commissioners

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*Primary contact and Co-Principal Investigator. Email: kedmiston@naic.org | Office: (816) 783-8067 | Mobile: (816) 206-5147.

† This research was conducted while Cho was a post-doctorate scholar at the CIPR/NAIC. Currently he is an Assistant Professor at Wayne State College, Wayne, Nebraska.

‡ Co-Principal Investigator.

§1100 Walnut Street | Suite 1000 | Kansas City, MO | 64106.

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The authors are agnostic with respect to the research findings, leaving the results and the objective analysis of the results to stand as they are. The authors neither encourage nor discourage social impact investments by U.S. insurance companies.

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Julie Gann	Financial Regulatory Services
Wil Oden	Financial Regulatory Services

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Executive Summary

The Center for Insurance Policy & Research (CIPR) at the National Association of Insurance Commissioners (NAIC) conducted a two-year research project to study the current exposure of the U.S. insurance industry to social impact investments and the financial performance of social impact investments. This report represents the primary deliverable for that project.

In our analysis, social impact investment involves pursuing strategies that create positive social outcomes specifically and are targeted to low- and moderate-income or other vulnerable or marginalized populations. These investments are intended to generate an adequate financial return in addition to social impact.

Background

There are myriad factors for insurers to consider in making general fund, balance sheet investments. Among these are risk-adjusted return, liquidity, diversification, and duration matching. Increasingly, insurer-investors are also seeking social impact. Social impact investment considerations include flexibility around the intentionality of the investments, capacity to scale investments, and any trade-offs with traditional investment or business objectives.

As one proceeds along the spectrum from traditional investing to traditional philanthropy, liquidity tends to decrease and risk tends to increase (although there is no risk involved in philanthropy, but rather, a guaranteed loss in capital). While flexibility around impact intentionality (specificity of an action or initiative taken to reach a desired outcome) increases along the spectrum from socially responsible investing to philanthropy, social impact tends to become more difficult to scale.

Exposure

The U.S. insurance industry's exposure to social impact investments (SII) was valued at $158.3 billion in 2020, accounting for 2.8 percent of aggregate U.S. insurer cash and invested assets. This level of exposure highlights a significant, albeit secondary interest among insurers in aligning investment portfolios with social needs while achieving their financial objectives. Life insurers hold the majority of these investments, totaling $107.8 billion in 2020, followed by property and casualty insurers at $46.9 billion, and health insurers at $5.9 billion.

The aggregate social impact investment portfolio consists primarily of municipal bonds, Low-Income Housing Tax Credit (LIHTC) equity investments, funds to community development financial institutions (CDFIs), and private debt. Social impact investments are targeted mostly at affordable housing, but they also finance small business development and community assets. Investments in municipal bonds account for the largest share across all the insurance lines of business.

Financial Performance

Municipal Bonds

Looking at municipal bonds in California, we find that bonds with proceeds targeted to social impact generally provide modestly lower returns than do bonds with proceeds targeted for other purposes (e.g., 3.18 percent for social-impact-related municipal bonds at 21–30-year maturities vs. 3.53 percent for non-social-impact-related municipal bonds). The difference in yields is particularly pronounced at longer maturities.

There are myriad potential reasons for the comparatively lower yields of social-impact-related municipal bonds, but they could reflect lower perceptions of risk and greater yield stability for social-impact-related municipal bonds. Additionally, social-impact-related municipal bonds tend to be more liquid (trade more frequently) compared to non-social-impact-related municipal bonds. Investors typically favor bonds that can be easily traded without significant loss in value (that is, more liquid bonds), all else equal. Greater liquidity should result in a lower liquidity premium for social-impact-related municipal bonds.

The relatively higher liquidity and possibly (perceived) lower risk associated with social-impact-related municipal bonds, all else equal, would likely make them relatively attractive to investors looking for stable long-term investments with positive social impact, such as life insurers.

Low-Income Housing Tax Credits (LIHTCs)

Low-Income Housing Tax Credit (LIHTC) equity investments play a critical role in the insurance industry's social impact investment strategy, as suggested by the share of social impact investing that takes the form of LIHTC equity. LIHTC equity investments leverage federal or state tax benefits (tax credits and passive losses, such as depreciation) to support the development of affordable rental housing. Our research suggests that LIHTC equity investments offer a combination of a favorable internal rate of return, predictable performance, and alignment with regulatory objectives (the IRR from the "pseudo" cash flows of tax benefits generally are not directly comparable

to IRRs of more traditional investment vehicles). Our data show LIHTC funds generating 4 percent to 7 percent after-tax IRRs, on average, in recent years. Returns may be bolstered by credit enhancements and other government-backed features that mitigate default risk.

Returns may vary significantly depending on the state in which the LIHTCs are received, or generally, across regions. Regional variation in LIHTC equity prices reflects localized market dynamics, with prices ranging between $0.87 and $1.06 per tax credit across states over recent years. While perhaps surprisingly, pricing occasionally exceeds $1 per credit, investors benefit from additional tax advantages such as passive loss deductions. Moreover, commercial banks and credit unions very heavily invest in the LIHTC equity market compared with insurance companies, and these banks receive benefits from these investments that insurers do not; specifically, investment credit to comply with the Community Reinvestment Act (CRA).

Because the returns from LIHTC Investments come in the form of tax credits and other tax benefits (primarily, passive losses), an investor's ability to utilize the future stream of tax benefits is a key consideration when evaluating a potential tax credit investment. The investor must have sufficient tax liabilities across the ten-year holding period to take all the credits and sufficient taxable income over the period to fully apply its deductions. There are no secondary markets for LIHTCs.

Community Development Financial Institutions (CDFIs)

Investments in community development financial institutions (CDFIs) are a critical component of local and regional community development strategies. CDFIs are akin to banks for low- and moderate-income (LMI) individuals, families, businesses, and institutions. Investments in CDFIs, which are largely loan funds, are turned over as loans to community development organizations to support the construction of affordable housing, the development and operation of small businesses in LMI areas, and other social and community development needs.

Insurers have invested in CDFIs for some time. Getting an exact count of these investments or the aggregate amount of investment is difficult because the investments are generally one-off insurance company investments, and they are not distinguishable on insurers' balance sheets as they appear in the financial summaries they submit to regulators. Still, we know the NAIC's Securities Valuation Office (SVO) analyzes dozens of these transactions annually.

Over the past decade, median net margins for CDFI loan funds remained stable between 10 percent and 15 percent, with a significant increase in 2021 before moderating in 2022. Top-performing institutions (top quartile) achieved margins

exceeding 45 percent, while lower-performing institutions (bottom quartile) had greater margin variability, with near-zero or negative margins in some years. Although there is significant variation across CDFIs, the data largely point to increasing net margins in the CDFI sector over recent years.

Delinquency rates are key measures of risk for CDFIs. The median 90-day-plus delinquency rate (percent of loan amounts outstanding) declined from 4.6 percent in 2011 to approximately 2.8 percent by 2022, signaling stronger credit performance and possibly enhanced risk management. While CDFI loan funds may carry higher inherent risks compared to traditional investments, they often benefit from government incentives, grants, and regulatory support that can mitigate downside exposure. For insurers, these investments may provide portfolio diversification and, potentially, enhance long-term balance sheet stability.

Mortgages and Mortgage-Backed Securities (MBS)

Insurance companies can and do make mortgages to earn a competitive yield while aiming also for social impact. As with many insurance companies' social-impact investments, social-impact-related mortgages are difficult to identify on balance sheets submitted as part of the annual financial summaries sent to regulators.

A significant portion of commercial mortgages in this space is directed toward affordable multifamily housing projects. These investments typically deliver stable and predictable returns supported by generally robust underwriting standards and, potentially, government-backed subsidies or guarantees.

Residential mortgages allocated to low- and moderate-income (LMI) rental or owner-occupied housing tend to generate returns comparable to traditional mortgage investments but may have added benefits of government support.

Some mortgage-backed securities (MBS) emphasize social impact. For example, residential MBS may pool residential mortgages that support affordable owner-occupied housing, and commercial MBS may pool mortgages targeted to affordable rental housing developments or businesses owned and operated by LMI proprietors and/or located in LMI communities. MBS, particularly agency-backed securities such as those from Fannie Mae and Freddie Mac, generally offer relatively low-risk, steady returns, in part because they are pooled. Non-agency MBS or private-label securities usually provide higher yields, which must be balanced with increased risk.

Private Debt and Community Development Debt Instruments

The private debt market, particularly community development debt instruments evaluated by the NAIC's SVO, offers a range of financial products that may advance

social impact goals. These instruments include bonds, term loans, and more innovative structures, such as Career Impact Bonds (CIBs) and other income-share agreements where repayment is contingent upon the economic success of the beneficiaries (in the case of CIBs, success is measured by students achieving a certain income threshold upon graduation. CIBs and similar securities may address funding needs in education, healthcare, affordable housing, or possibly other community development activities or entities.

The financial performance of private debt varies widely depending on risk, which, in turn, may depend on guarantees and/or collateral. As expected, bonds without guarantees earn higher yields, starting at approximately 10 percent for short-term maturities and declining to around 4 percent for longer maturities (20+ years), reflecting the higher credit risk and yield premiums demanded by investors. In contrast, bonds with guarantees typically offer more stable and lower yields, averaging around 2 percent across all maturities, due to reduced risk.

Private debt generally offers consistent, long-term returns that align well with duration-matching goals. Our analysis highlights the importance of guarantees, collateral, and other risk mitigation measures in enhancing private debt investments. While non-guaranteed bonds offer higher returns, their greater risk requires careful management to attract institutional capital such as investment dollars from insurance companies. Guaranteed instruments, on the other hand, provide insurers with consistent, long-term (albeit lower) returns with much less risk. Private debt instruments may enable insurers to contribute to the social good while maintaining a reasonable long-term, risk-adjusted yield.

Private Equity Funds

Private equity (PE) funds that focus on social infrastructure typically have substantial returns that are only modestly lower than returns on non-social-impact related PE funds. Performance improves significantly after the initial two years following fund establishment (early-stage challenges such as deployment delays and operational inefficiencies tend to stabilize). The average net internal rate of return (IRR) for social infrastructure PE funds is 11.9 percent after age two. Although performance falls below the 16 percent median IRR of broader PE funds, social infrastructure PE funds offer above-market returns, although at greater risk, for insurers seeking to align financial and social objectives. PE funds offer a potentially compelling balance of financial performance and social impact, making them a valuable addition to social impact investment strategies.

Conclusion

The financial performance of social impact investments within the insurance industry varies significantly, with each asset class offering a different balance of risk, return, and social impact. Municipal bonds, Low-Income Tax Credit equity funds, CDFI loan funds, and private debt instruments are especially prominent social impact investments on the aggregate insurance industry balance sheet. By aligning financial returns with social outcomes, the insurance industry can play a pivotal role in driving economic and social progress in underserved communities, while also meeting its financial and business objectives.

Our analysis of the financial performance of social impact investments within the insurance industry demonstrates that meaningful social outcomes can be achieved with largely reasonable financial returns. Each asset class—municipal bonds, Low-Income Housing Tax Credits (LIHTC) equity funds, CDFI loan funds, mortgages, and private debt instruments—offers a distinct balance of stability, risk, and return. These investments collectively may enable insurers to meet their fiduciary responsibilities while advancing social goals such as affordable housing, economic revitalization, and community development.

Government-backed credit enhancements, tax incentives, and innovative financial tools often mitigate risks and may encourage broader participation. By leveraging these mechanisms, the insurance industry can expand its role as a driver of community and economic development in underserved and marginalized communities.

Social Impact Investing in the U.S. Insurance Industry

In 2022, the Center for Insurance Policy & Research (CIPR) at the National Association of Insurance Commissioners (NAIC) embarked on a two-year research project to better understand the current landscape of social impact investing in the U.S. insurance sector. The purpose of this report is to inform regulators, industry, and other NAIC stakeholders about the potential benefits and pitfalls associated with these ventures.

In our analyses, social impact investment involves pursuing strategies that create positive social outcomes, however defined, which are targeted to low- and moderate-income (LMI) or otherwise vulnerable or marginalized populations. Unlike philanthropic investments, social impact investments are general fund, balance sheet investments intended to generate an adequate risk-adjusted financial return in addition to specific social outcomes.

We highlight the types of investment structures commonly employed in social impact investing, investment and business considerations, and the availability of information to assess risks. Additionally, we discuss the challenges insurers face in initiating or expanding their social impact investments. Further, we report on the insurance industry's current exposure to social impact investments by calculating an industry baseline, which we project to 2023. Finally, when data allow, we evaluate the financial performance of social impact investments, and when possible, compare the financial performance of social impact investments to non-social impact investments.

I. Background

There are significant unmet social needs in LMI communities and other communities of vulnerable and marginalized populations.[1] These needs include affordable, quality housing and other community assets. A complete needs assessment is outside the scope of this project, but we highlight some broad categories of these social needs to put social impact investing in context.

[1] See United Way, "211 Impact Survey Uncovers Widespread Unmet Community Needs Nationwide," Press Release. The press release is undated, but the survey data come from the 2023 211 Survey. See also, in a health context, Megan B. Cole and Kevin H. Nguyen, 2020, "Unmet Social Needs Among Low-Income Adults in the United States: Associations with Health Care Access and Quality," *Health Services Research*, 55(S2), 873-882. doi:10.1111/1475-6773.13555.

While these needs have always existed to some degree, social issues are taking on greater prominence, and with trillions of investment dollars, insurers could be uniquely positioned to help address funding gaps (Waddell et al., 2023). Indeed, insurers are aware of these needs and associated concerns and are increasingly considering social impact in their investment decisions. In particular, the social unrest of 2020 gave impetus to develop additional strategies for increasing social impact investments by insurance companies.[2]

Social impact investments are designed to address social needs while generating an acceptable risk-adjusted return and meeting regulatory requirements. Social impact investments could potentially yield non-investment benefits to insurers as well. Traditional investors have increasingly demanded social investments from companies in which they invest, and social investments could generate additional pools of both investors and workers. Social investments could also potentially generate business income, such as increased sales/premiums.

A recent analysis by Boston Consulting Group (BCG) notes that many cohorts of stakeholders are paying more attention to social issues (Waddell et al., 2023). Two-thirds of Generation Z and Millennials, which together will account for 75 percent of the workforce by 2030, expect their "employers to have purpose and their jobs to have societal impact." Indeed, BCG found in a 2021 survey that a 10 percent increase in "purposefulness at work" can reduce employee turnover by 8.1 percent (Kovács-Ondrejkovic et al., 2021).

Moreover, investors are increasingly bringing their social impact commitments into their investment decision-making, and some governmental entities require or are introducing legislation to require that companies disclose their "performance on social issues."[3] An example is the required reporting of environmental and community development investments by insurers writing $100 million or more in California premiums to the California Organized Investment Network (COIN), which is part of the California Department of Insurance [CA Ins. Code § 12939.1 (2021)].

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[2] See American Council of Life Insurers (ACLI), "ACLI Announces Investment Partnership Focused on Affordable Housing, Communities of Color," News Release, April 29, 2022.

[3] At the same time, legislators in many other states are proposing legislation that would *forbid* ESG-focused investing, particularly by public pension systems. For a detailed examination of the ideological ESG battle across states and a compendium of ESG legislation across states, see Leah Malone et al., "ESG Battlegrounds: How States Are Shaping the Regulatory Landscape in the U.S.," Harvard Law School Forum on Corporate Governance, March 11, 2023. We also address "anti-ESG sentiment" later in the document.

BCG also notes possibilities for increasing revenue due to the global protection gap, improving insurer-investors' reputations, and boosting total shareholder return, the latter based on the relative performance of the MSCI ESG Leaders Indexes.

A. Social and Community Development Needs

By most accounts, there is a dearth of resources in LMI and other communities of vulnerable and marginalized populations.[4]

1) Affordable Housing

According to the National Low-Income Housing Coalition (NLIHC) there is a considerable shortage in affordable housing, especially for the lowest-income renters.[5] Housing is "affordable" if the cost is 30 percent or less of gross household income. Most social impact investments made by U.S. insurers are in the affordable housing space.

At minimum, extremely low-income renter households face a shortage of 3.9 million affordable rental homes (11 million extremely low-income renter-households less 7.1 million affordable to these households).[6]

Superficially, the supply of affordable housing, at least from a national view, seems adequate to shelter very low-income and higher-income households. For example, cumulatively, 16.7 million rental units are affordable to the 6.9 million very low-income renter households (the 7.1 million units affordable to extremely low-income renters + 9.6 million additional units that are affordable to those with incomes between 30 percent and 50 percent of AMI [i.e., very low income]). Using the same calculus, 35 million housing units are affordable to low-income renter households (the 16.7 million affordable to extremely low-income and very low-income renter households + 18.3 million additional households available to low-income renter households).

However, at least some of the 7.1 million units affordable to extremely low-income renter households are occupied by those 11 million extremely low-income renter households, if not others, so something less than 16.7 million affordable units would

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[4] See Nishesh Chalise, Violeta Gutkowski, and Steven Howland, "Community Perspectives Survey: Insights from the Field: Economic Conditions in Low- and Moderate-Income Communities," Fed Communities (Federal Reserve), August 7, 2024.

[5] National Low Income Housing Coalition (2024). The Gap: A Shortage of Affordable Homes. March.

[6] Households with "extremely low incomes" have incomes below 30 percent of area median income (AMI) or below the federal poverty line. Households with "very low incomes" have incomes between 30 percent and 50 percent of AMI, while "low-income" households have incomes between 50 percent and 80 percent of AMI.

be available to very low-income renter households. Thus, there is an important distinction between the *supply* of affordable housing and the *availability* of affordable housing. In the extreme, if all 7.1 million of the units affordable to extremely low-income households were occupied solely by extremely low-income renter households, only 9.6 million affordable units would be available to very low-income renter households, not 16.7 million.

In reality, the affordable housing situation is more fragile than the previous analysis suggests because some renter households seek housing that is *especially* affordable rather than *just* affordable. For example, some very low-income renter households (or even higher-income households) occupy some of the 7.1 million rental units affordable to extremely low-income renter households. Indeed, of the 7.1 million units affordable to extremely low-income renter households, nearly half (3.4 million) are occupied by households with higher incomes.[7] As a result, only 3.7 million affordable units are *available* for the 11 million extremely low-income renter households, implying an affordable housing deficit for extremely low-income renter households of 7.3 million rather than 3.9 million. In other terms, there are roughly 34 affordable homes available to every 100 extremely low-income renter households ($3.7/11 \approx 0.34$) (**Figure 1**).

The same phenomenon occurs throughout the distributions of renter households and rental units. For example, 3.8 million units affordable to very low-income renters (but not extremely low-income renter households) are occupied by households with higher (than very low) incomes. As this process filters through, there are insufficient affordable and *available* rental units across the spectrum of lower-income renter households, with the insufficiency of affordable and available rental homes being most pronounced at the lowest end of the income spectrum.

Faced with an inadequate number of affordable homes, lower-income families (incomes below 80 percent of AMI) must contend with housing that is not affordable, meaning they are (technically) burdened with housing costs that exceed 30 percent of gross household income. Of the 7.3 million extremely low-income renter households who are unable to secure affordable rental units, 2.6 million live in rental units affordable to those with very low incomes, 3.3 million live in units affordable to those with low incomes, and 1.4 million live in units affordable only to those with middle and higher incomes.

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[7] *Ibid*.

Figure 1. Relative Supply of Affordable and Available Rental Homes
(number of affordable homes per 100 renter households)

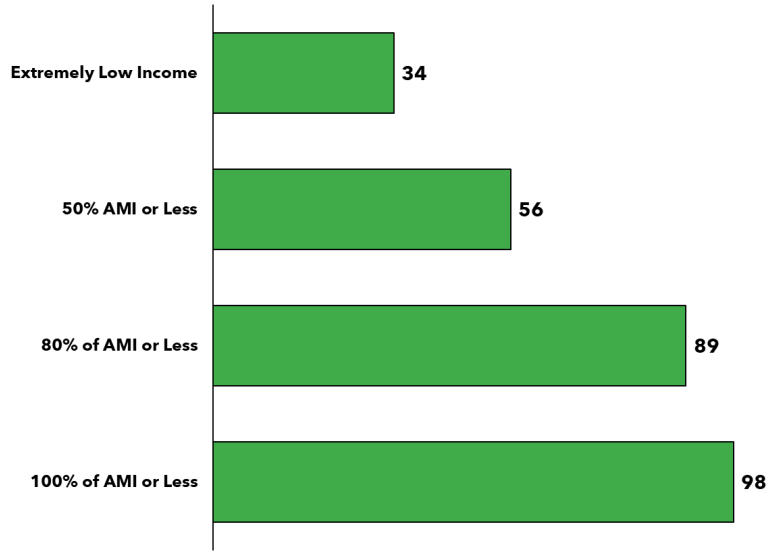


Chart Source: CIPR
Data Source: National Low Income Housing Coalition (2024). The Gap: A Shortage of Affordable Homes. March.

Many lower-income renter households are *housing-cost-burdened*, meaning they spend more than 30 percent of gross household income on rent. Among the extremely low income, 87 percent are cost-burdened, and 74 percent are extremely cost-burdened, meaning housing costs consume more than 50 percent of gross household income (**Figure 2**). Again, this phenomenon occurs throughout the lower-income spectrum.

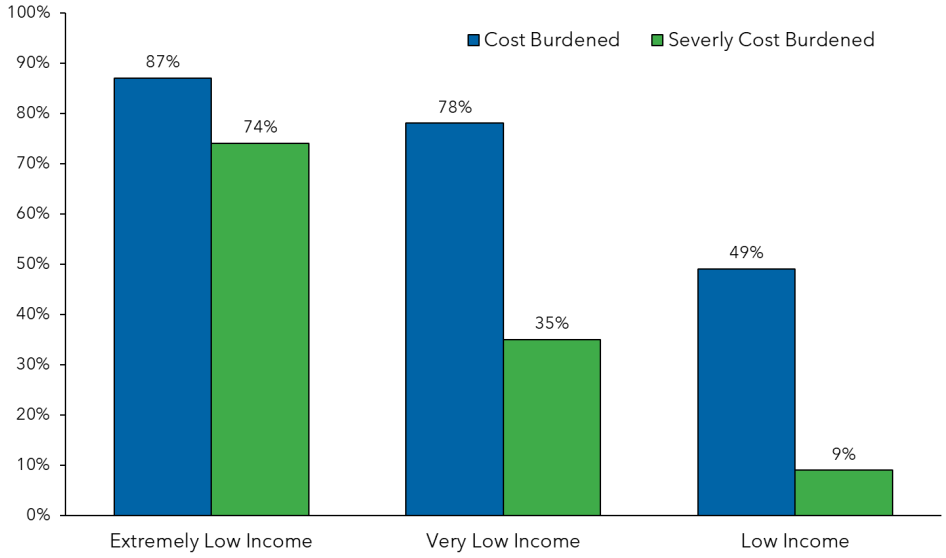
Importantly, renter-households and affordable rental units do not have a uniform spatial distribution. Some specific geographic areas could have severely inadequate supplies of affordable housing for all categories of lower-income renter-households—or renter households overall—while other geographic areas have more abundant affordable housing options.

In particular, many rural areas face especially difficult affordable housing challenges, which are compounded by an aging housing stock and aging infrastructure.[8] Incomes tend to be lower overall in rural areas relative to urban areas, and employment opportunities are more limited, which can create significant needs for affordable housing. While declines in housing affordability have been "universal" across rural and urban areas, population growth over the past three decades has been associated

[8] HomeSight.org. Affordable Housing in Rural Areas: Challenges & Solutions.

with "decreases in affordability in rural counties but increased affordability in large metro counties due to estimated decreases in housing costs."[9]

Figure 2. Housing Cost Burdens by Income



Note: Cost-burdened households spend 30 percent or more of their gross household income on housing. Severely cost-burdened households spend 50 percent or more of their gross household income on housing.
Chart: CIPR
Data Source: National Low Income Housing Coalition (2024). The Gap: A Shortage of Affordable Homes. March.

2) Community Assets

Although insurers' social impact investments are heavily concentrated in the affordable housing space, some insurer investments address a lack of other community assets in many disadvantaged communities. Community assets may include facilities such as schools, community centers, and healthcare facilities; services such as public transportation; or broadly defined, businesses that provide jobs for residents and support the local economy (University of Kansas). Investments may also be targeted to small business development, particularly for minority-owned small businesses; and social programs such as financial inclusion and public health campaigns.

[9] Matthew M. Brooks, 2022, "The Changing Landscape of Affordable Housing in the Rural and Urban United States, 1990–2016," *Rural Sociology*, *87*(2), 511-546. doi:10.1111/ruso.12427.

Community facilities include community centers, educational facilities, and healthcare facilities, among others. Health insurers are especially likely to use their social impact investments to support healthcare facilities and public health programs.

B. Insurer-Investor Responses

As social impact investing by insurers has become more common, myriad examples could be presented. For context, we present a few here, but our discussion of these efforts does not imply they were more or less remarkable than similar investments made by other insurance companies.

One example of investments in affordable housing and small business development is an effort by New York Life. In 2021, New York Life embarked on a $1 billion "impact investment initiative."[10] A slight majority of the funds, $550 million, were targeted for affordable housing—$300 million in the form of Low-Income Housing Tax Credits (see Section II.C.1 in this document), and $100 million to Community Development Financial Institutions (see Section II.D in this document). Most of the remainder was targeted to support small businesses through "diverse and emerging fund managers" ($300 million) and to support the construction of three homeless shelters in New York City.

Empowered largely by social unrest at the time, numerous life insurers came together in October 2020 under the umbrella of the American Council of Life Insurers (ACLI) to launch an initiative known as the Economic Empowerment and Racial Equity Initiative (EERE).[11] As part of this initiative, a "financial partnership network" was launched in April 2022, later named "360 Community Capital," to "be a force multiplier bringing capital from the life insurance sector to affordable housing in underserved communities through nonprofit and public community development organizations."[12] While the partnership has not yet sourced a project, ACL President Susan K. Neely stressed when the EERE initiative was launched that "the battle against economic inequity would not be won overnight" and that "the life insurance industry would be dedicated to this vital effort for as long as it takes."[13]

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[10] New York Life, "The Power of Pursuing Profits with a Purpose: Our Impact Investing," Newsroom, 2022.

[11] Susan K. Neely, "An Investment Homerun," ACLI IMPACT, April 29, 2022.

[12] "Life Insurers Name Affordable Housing Investment Initiative: 360 Community Capital – Building the Roots of Stronger Communities." ACLI News Release. June 21, 2022.

[13] Op. cit., Neely, 2022. See also Susan K. Neely, "The Road to Economic Empowerment and Racial Equity," October 14, 2020.

Social impact investments are not limited to life insurers, although, with their large balance sheets and longer-term investment horizon, they often are better positioned to make these investments.[14] Recently, health insurers have invested hundreds of millions of dollars into building new affordable housing units (Goldman, 2024). Since 2011, UnitedHealth Group has invested more than $1 billion in affordable housing, an effort they attribute to advancing health equity.[15] Centene, which is the nation's largest Medicaid insurer, announced in May 2024 that it would invest about $900 million in new affordable housing across eight states, although in Centene's case, the investments are coming from its philanthropic arm.[16]

C. Social Impact Investing in Context

The Global Impact Investing Network (GINI) defines impact investments as "investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return." Our definition for the purpose of this document is similar but narrower. In our analysis, social impact investment involves pursuing strategies that *create positive social outcomes* specifically and are *targeted to low- and moderate-income or other vulnerable or marginalized populations*. These investments are also intended to generate an adequate financial return.

1. The Investment Spectrum

There are myriad factors for insurers to consider in making general fund, balance sheet investments. Among these are risk-adjusted return, liquidity, diversification, and duration matching. Increasingly, insurer-investors are also seeking social impact. Additional investment considerations in making social impact investments are flexibility around the intentionality of the investments, capacity to scale investments, and any trade-offs with traditional investment objectives.

One can think about investments along a spectrum with regard to social impact (**Figure 3**). On one end is "traditional investing," where the sole purpose of the investments is financial return and other traditional investment and business

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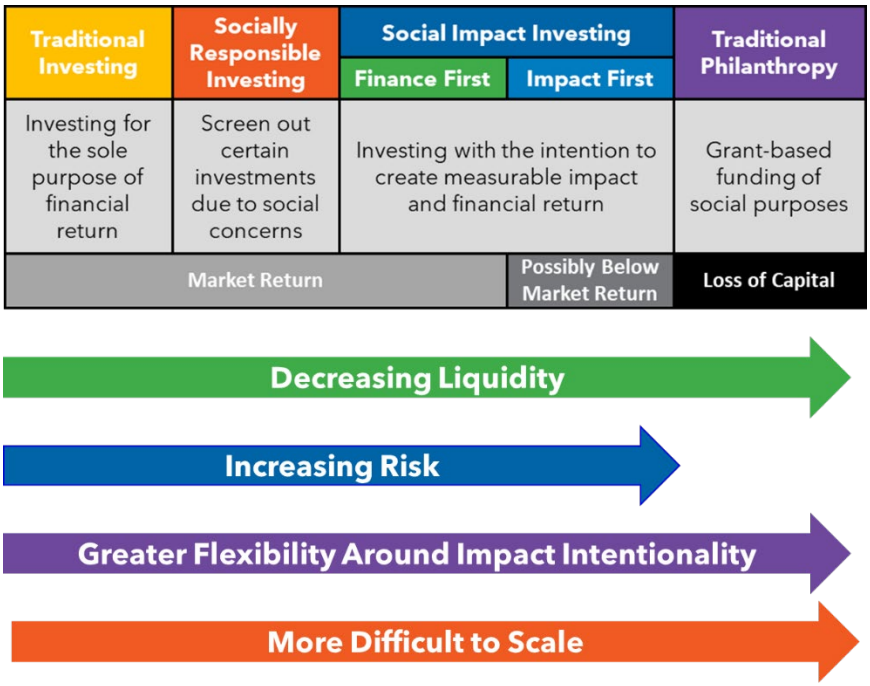
[14] Life insurers tend to make longer-term investments, all else equal, than other insurance lines of business (LOBs) to match asset duration with the duration of their liabilities. In addition, given the relative dollar size of life balance sheets vis-à-vis those of non-life LOBs, a social impact investment of a given size likely would account for a much smaller share of total cash and invested assets for life insurance companies. Indeed, we demonstrate that phenomenon later in the report.

[15] UnitedHealth Group, "UnitedHealth Group's Affordable Housing Investments Surpass $1B," May 15, 2024.

[16] Maya Goldman, "Health Insurers Take of the Affordability Crisis—in Housing." AXIOS. June 5, 2024.

objectives without regard for social impact. On the other end of the spectrum is philanthropy, which is typically grant-based funding where the sole regard is social impact. Philanthropy in the form of grants involves a loss of capital.

Figure 3. The Responsible Investing Spectrum



Source: CIPR

As one proceeds along the spectrum from traditional investing to traditional philanthropy, liquidity tends to decrease and risk tends to increase (although there is no risk involved in philanthropy, but rather, a guaranteed loss in capital). While flexibility around impact intentionality increases as we move along the spectrum from socially responsible investing to philanthropy, social impact tends to become more difficult to scale.

One can make social impact investments with either a "finance first" or "impact first" philosophy. With impact first, there is—theoretically at least—a greater possibility of a below-market return. However, only a small proportion of investors agree with the statement that social-impact-guided investments have a lower return (**Figure 4**). In a 2023 Nuveen Institutional Investor Survey, only 21 percent *disagreed* with the statement that social impact investments generate the same return as "comparable traditional investments." About 40 percent of survey respondents *agreed* with the statement, while the remaining 40 percent neither agreed nor disagreed.

Figure 4. Institutional Investor Opinions on Relative Return of Impact Investments

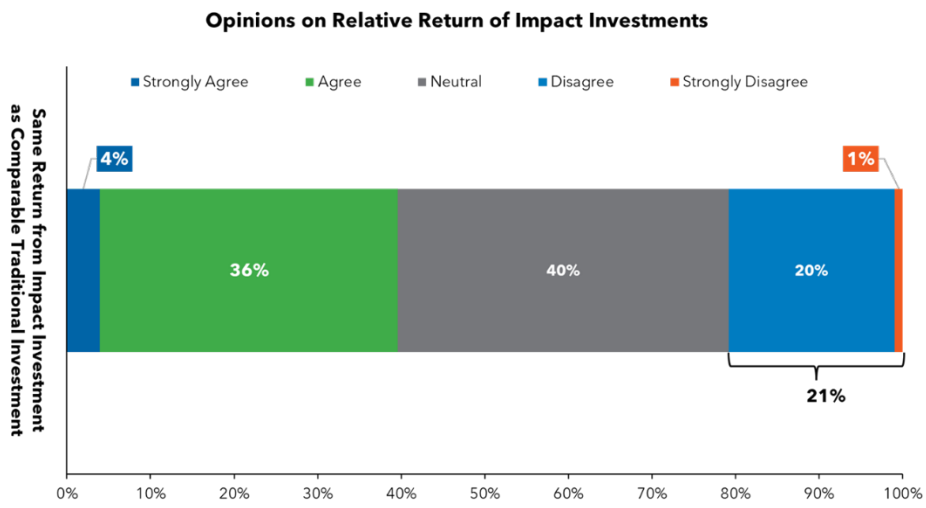


Chart Source: CIPR
Data Source: Nuveen, 2023 Global Institutional Investor Study – Global Insurance Edition. April 2023.

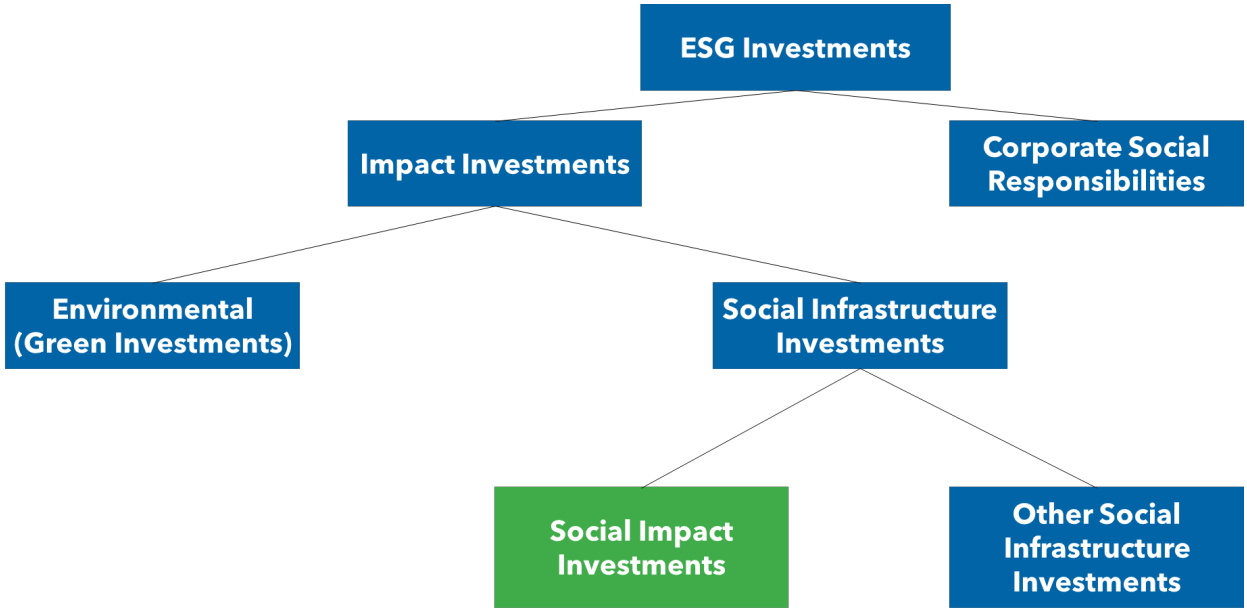
2. Social Impact Investments

Social impact investments often are considered within the larger "ESG" framework. "ESG" stands for Environmental, Social, and Governance. Broadly, ESG investors choose to support entities that demonstrate responsible behavior and have a positive impact on the environment and society. ESG can cover a very broad range of activities. More than $23 trillion in assets globally are subject to an ESG impact screen, including over 25 percent of all professionally managed assets.[17]

Figure 5 shows how we break down types of "responsible" investments. We begin with the broadest category, "ESG Investments." We bifurcate ESG investments into those internal to the insurer-investor, which we call "Corporate Social Responsibilities" and those external to the insurer-investor, which we call "Impact Investments." Corporate Social Responsibilities largely cover the governance (G) component of ESG, which refers to how a company is managed and controlled. The quality of governance includes criteria such as leadership practices, ethics, transparency, executive pay, human resource relations, audits, internal controls, and shareholder rights.

[17] Harvard Business School, Social Enterprise, Impact, Impact Investing [website].

Figure 5: Hierarchy of ESG Investments



Source: CIPR

The environmental (E) component of ESG reflects the environmental impact of the entity or its investments. Environmental impact can be internal; for example, carbon emissions, energy efficiency, waste management, resource consumption, and pursuit of sustainability through its supply chain. Externally, companies that make substantial investments, such as insurance companies, can invest directly in "green" companies and technologies, such as alternative energy or sustainable agriculture.

We call the social (S) component of ESG "Social Infrastructure." We do so to distinguish investments intended to make a social impact in low- and moderate-income (LMI) communities or other vulnerable or marginalized populations ("Social Impact Investments"), from investments intended for the social good but that are not targeted to vulnerable populations ("Other Social Infrastructure Investments"). Other Social Infrastructure Investments might include community facilities, public universities, or sports stadiums, for example. "Social Impact Investments" typically support affordable housing, small business development, community development, or social services.

D. Insurer-Investor Sentiment

Data suggest that insurer-investors are increasingly interested in making social impact investments. This interest is evident in recent, historically large funding of social impact investments (Section I.B), investment collaboration (Section I.B), and recent insurer survey responses.

1. CIPR Request for Information (RFI)

Early in the process, the CIPR initiated a request for information (RFI) regarding insurer-investor understanding, activities, and plans regarding social impact investments. Separate RFIs were sent to insurance industry representatives and insurance regulators.[18]

RFI survey responses indicate that insurer-investors are actively engaged in social impact investments. Investment and financial objectives around social impact investing generally are to generate sustainable, risk-adjusted returns while also creating positive social outcomes. Insurers aim to develop large-scale solutions that deliver inclusive economic outcomes, with specific targets for risk-adjusted market-rate returns. These objectives demonstrate a balance between financial performance and social impact.

The primary social purposes behind these investments include addressing inequalities, providing social benefits to underserved communities, and bridging the racial wealth gap, particularly with insurance products.[19] Some insurers highlighted the importance of driving social and economic mobility and wealth generation for historically underserved groups.

The business objectives of social impact investments are multifaceted and include identifying opportunities in underserved communities that provide strategic benefits to both the insurer and local communities. This approach expands the market for insurance products by addressing the racial wealth gap, which underscores the view that social impact investments could create economic opportunities that lead to business development in addition to generating positive social outcomes.

Decision criteria for these investments include consideration of risk-adjusted returns, whether investments are investment grade, and the potential for meaningful positive social impact. Insurers have specific verticals, such as affordable housing, small businesses, and community development, that also guide their investment choices.

The aggregate value of assets in the social impact space varies among insurance companies, representing a small fraction of total balance sheet assets but indicating a

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[18] We use regulator responses for internal purposes only, and they are not discussed directly in the report.

[19] In 2024, the CIPR fielded a nationally representative survey of 3,500 American adults to better understand socioeconomic and demographic wealth gaps and understanding of and experiences with insurance products across socioeconomic and demographic groups. A detailed analysis of the results and associated reports is forthcoming.

growing interest in this area (see Section III of this document). Investments are diversified across social sectors and include affordable housing, healthcare, and small business development. This diversity reflects the desire to take a strategic approach to addressing social challenges. The geographical distribution ranges from local to national, with some insurance companies prioritizing opportunities close to headquarters.

Overall, the insurance industry's engagement in social impact investing demonstrates a commitment to leveraging financial resources for societal benefit, although the scale and focus of these efforts vary across insurers. The involvement of various departments, including dedicated teams managing overall strategy and asset management around social impact and other sustainable investment efforts in some insurance companies discloses an effort to integrate social impact considerations with existing investment strategies.

2. External Surveys

Several organizations, largely consulting firms but also insurers themselves, have included queries about social impact and other sustainable investing practices in their regular surveys.

In the 2022 Capital Group Survey, a lack of robust ESG data was cited most often by institutional investors as the biggest ESG adoption hurdle (Capital Group, 2022). The second was concerns about performance and sacrificing returns. Similarly, in a 2024 survey of insurers by Mercer and Oliver Wyman (Marsh McLennan), of organizations not "incorporating sustainability factors" into investment decisions, 53 percent stated "lack of transparency and standardization of data and reporting" as a "top reason."[20] Again, among organizations not incorporating sustainability factors, 37 percent cited "concerns about the potential impact on investment performance," which rose to 60 percent for life insurers specifically.

In a 2023 Nuveen survey of insurers, 61 percent agreed that "Impact Investments will be an increasingly important allocation for us in the coming years" (**Figure 6**).[21] In the same survey, one-third of insurers were making or planning to make affordable housing investments, while almost one-quarter planned on making investments in financial inclusion (**Figure 7**).

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[20] The report is downloadable at "Mercer and Oliver Wyman 2024 Global Insurance Investment Survey," Mercer.

[21] Nuveen, Think Equilibrium: 2023 Global Institutional Investment Study – Global Insurance Edition. April 2023.

Figure 6. Importance of Impact on Investment Decisions

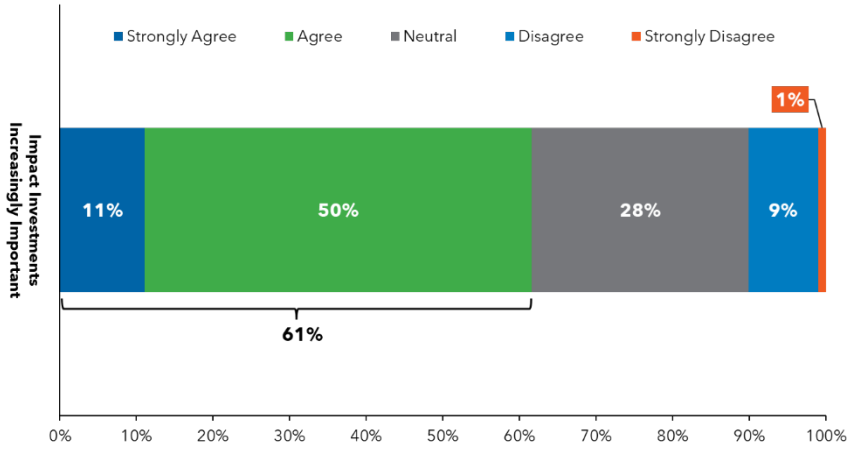

Chart Source: CIPR
Data Source: Nuveen, 2023 Global Institutional Investor Survey – Insurance Edition

Figure 7. Allocations of Investment Dollars to Impact Investments

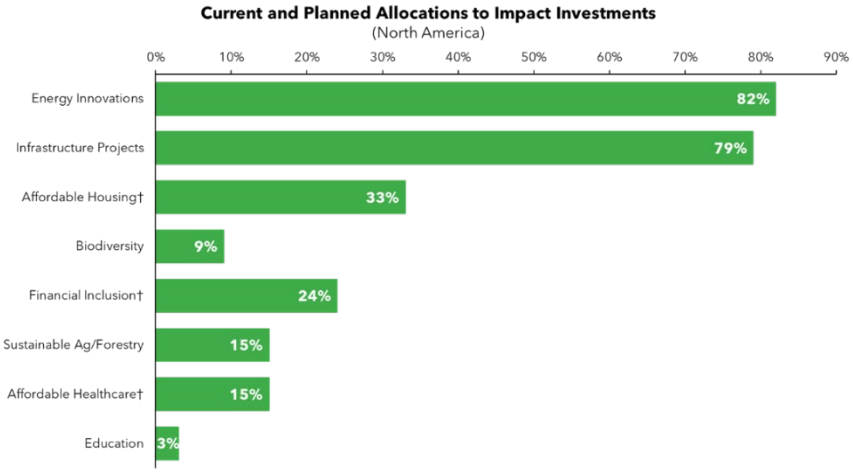

Chart Source: CIPR
Data Source: Nuveen, 2023 Global Institutional Investor Survey – Insurance Edition

3. Headwinds

Although survey evidence suggests that social impact investing, or more commonly, investments along the broader ESG spectrum, are increasing considerations by institutional investors, ESG considerations, and therefore social impact investing, face some (largely political) headwinds in the United States.

In 2022, the Department of Labor (DOL) under the Biden Administration promulgated a new rule on "Prudence and Loyalty in Selecting Plan Investments and Exercising

Shareholder Rights."[22] The rule, which essentially affirms a norm that had been in place for roughly 20 years, addresses the consideration of ESG in retirement investments governed by ERISA. Under the Biden rule, a particular fund that relies on ESG factors for "risk-and-return purposes is, by itself, neither qualifying nor disqualifying." In 2023, President Biden used his first veto to overrule a Republican effort to ban the rule, an effort that had won over slim margins in the House of Representatives and the Senate.[23] A 2024 report on a Nuveen survey of insurers states that, regarding ESG (specifically, climate transition), "politicization will be the greatest challenge." Of course, it remains to be seen what changes the incoming Trump Administration will make in this investment space, if any.

Some political wrangling could be due to differing definitions of "ESG."[24] Indeed, we have carefully clarified our definition of "social impact investing" and where it falls in the ESG spectrum of activities. "ESG" has been associated with the term "woke Capitalism."[25] In the 2024 HSBC-Survation survey, in a question about whether the term "ESG" should be changed, 35 percent of global respondents said "yes." Undoubtedly the share in the United States reporting "yes" was significantly higher (data unavailable).

These political headwinds potentially affect ESG considerations by institutional investors and therefore social impact investments. A webinar highlighting a March 2024 HSBC-Survation survey revealed sentiments such as "There is undoubtedly a rise in anti-ESG sentiment in the US" and "The decline in ESG incorporation reflects … varying pressures from different stakeholders, especially in the US."[26] Moreover, the 2024 Mercer and Oliver Wyman survey report notes a decline in these sustainable (largely environmental) investments relative to the previous year, despite upticks

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[22] Max M. Schanzenback and Robert H. Sitkoff, "ESG Investing After the DOL Rule on 'Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights'," Harvard Law School Forum on Corporate Governance, February 2, 2023; Katie Rogers, "Biden Issues First Veto to Protect Socially Conscious Investing," *New York Times*, March 20, 2023.

[23] Chris Carosa, "The Calculus Behind the ESG Battle Between the White House and Capitol Hill," Forbes, March 25, 2023.

[24] *Op. cit.*, Schanzenbach and Sitkoff, 2023.

[25] Stephanie Ebbs, "What are ESG and 'woke capitalism'? State Treasurers Weigh in on Fight Over Where Tax Money Goes," ABC News, October 12, 2022. In a 2022 presentation of some of the ideas included in this report, a state senator in attendance referred to one of the authors, a panelist, as a "woke Marxist."

[26] The full report on the survey can be downloaded from the HSBC Global Research website (requires a subscription).

globally.[27] Political expectations were noted as one of the significant drivers in this trend. Finally, over one-dozen state legislatures have imposed restrictions on ESG-related activities, particularly using ESG as a factor in public pension investment decisions and the issuance of ESG-labeled bonds.[28]

In a March 2022 HSBC Survey, on a scale of 0 (not at all) to 10 (completely), institutional investors as a group scored 4.9 on the incorporation of ESG factors into investment decisions. By 2024, the score had dropped to 4.4.[29]

II. Types of Social Impact Investments

In this section of the report, we discuss the *types* of social impact investments we evaluate, which, in the aggregate, make up virtually the entire complement of possible social impact investment options for insurers. Specifically, we discuss investment options and how they work. We evaluate the relative holdings of these asset types in Section III and the financial performance of these investment types in Section IV.

A. Municipal Bonds

Municipal bonds are debt securities issued by subnational governments (state, county, and local in the United States). Although there has been some limited local bond issuance in countries like India and China in recent years, municipal bonds are a uniquely American phenomenon.[30] In addition to the 50 states, the District of Columbia, and the five U.S. territories, there are more than 90,000 subnational

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[27] See Terry Gangcuangco, "Where are Insurers Investing?" April 11, 2024.

[28] Pleiades Strategy has a detailed "Live Anti-ESG Tracker" on their website sharing numerous actions at various levels of state government that in some way curtail ESG activities or the consideration of ESG factors. We note the website is unbalanced in its views. Our reference to the site should not be considered an endorsement of the organization or its content, and the CIPR has not evaluated the veracity of the information on the website.

[29] HSCB-Survation ESG Sentiment Survey; Wai-Shin Chan, "HSBC ESG Sentiment Survey – Blurry Signals." HSBC Global Insights, General Research Insights, Understand ESG. August, 2024.

[30] Local borrowing is centralized in most other countries, so local governments do not directly issue debt. Instead, a Local Government Funding Agency (LGFA), or "bond bank," issues its own bonds and lends the proceeds to local jurisdictions (see OECD, 2021). The United Kingdom, for example has the UK Municipal Bonds Agency. Some U.S. states also have bond banks (see Council of Development Finance Agencies). Although direct issue of local debt is rare in China, local governments are heavily indebted by bonds issued through local government financing vehicles (LGFVs). As of 2023, LGFV bonds topped $9 trillion, which accounts for roughly half of China's corporate bond market (Gu and Westbrook, 2023).

governments in the United States, and most of these jurisdictions have the authority to issue municipal bonds (Fisher, 2022).[31]

The U.S. municipal bond market is approximately $4 trillion in capitalization, with about 1 million municipal securities outstanding.[32] The trading volume of municipal bonds is very thin relative to most public markets for financial securities with about $13 billion in par value trading daily in about 50,000 trades. By contrast, the daily trading volume for corporate securities is over $1.4 trillion.[33]

1. Purpose and Structure

In the United States, apart from the State of Vermont, state and local governments are constitutionally mandated or otherwise legislated (by the state) to have balanced budgets, which means current expenditures must be less than or equal to current revenues in any given fiscal year.[34] Yet much of the public infrastructure in the United States is constructed and maintained by state and local governments, and the resulting capital outlays, which are irregular, cannot usually be financed from general funds (as they are for the U.S. federal government).[35] Thus, state and local governments require a secondary source of funds for long-term capital projects, a capital fund financed by debt separate from the general fund. Debt service is then paid from the general fund.

State and local governments debt-finance capital projects by issuing municipal bonds. Most of these bonds are long-term (maturity greater than one year), typically with 10-, 20- or 30-year maturities. U.S. municipal bonds are usually exempt from federal taxation and carry lower interest rates (coupon payments) than other bonds.[36] Generally, specialty investment banks facilitate initial bond issues.

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[31] Roughly 40,000 of these subnational governments are general-purpose governments such as counties, cities, and towns. The remainder are special purpose governments; that is, government jurisdictions designed for one specific purpose. Special purpose governments include school districts, fire districts, water and sewer districts, library districts, and any number of other jurisdictions formed for a specific purpose.

[32] Municipal Securities Rulemaking Board (MSRB), Muni Facts.

[33] Ibid.

[34] Modest deficits can be managed over time by the shifting of expenditures and payments for expenditures. The following year's budget must allocate resources to account for any remaining deficit.

[35] Examples of these infrastructure projects are highways, roads, and bridges; waterways, water and sewer facilities, and utilities. The Center for Insurance Policy & Research at the NAIC published a report in October 2021 that addressed how insurance companies, through their balance sheet investments, might be able to help fill the enormous infrastructure gap in the United States.

[36] Private activity bonds, discussed in the next subsection, often are not exempt from federal taxation.

Municipal bonds are categorized into two main types: revenue bonds and general obligation (GO) bonds. Revenue bonds are backed by specific revenue sources, such as a share of local sales tax collections, which are earmarked to pay the interest and principal on the bonds. If the revenues from the designated source are insufficient to cover the debt service, bondholders bear the loss; that is, the issuing jurisdiction defaults.

GO bonds are secured by the full faith and credit of the issuing government. This structure means that all revenue sources available to the jurisdiction are pledged to repay the debt. If these revenue sources are inadequate, the issuing government must increase revenue, such as taxes, or otherwise cut non-debt-service spending, to meet its payment obligations.[37] Just over one-third of municipal bonds are GO bonds, the large majority of the remainder being revenue bonds (Fidelity Investments, 2023).

Overall, municipal bonds play a crucial role in financing the infrastructure needs of state and local governments in the United States. Their unique tax-exempt status and diverse range of revenue sources provide investors with a generally sound investment option while enabling governments to fund essential projects that contribute to public welfare and economic development. The cumulative 10-year default rate average for municipal bonds is only 0.09 percent, compared with 2.23 percent for corporate securities.[38]

2. Private Activity Bonds

In recent years, private-activity bonds (PABs) have become increasingly common. The federal tax code classifies municipal bonds as either governmental bonds or PABs. Governmental bonds are intended for government projects, while PABs are issued by state and local governments to finance projects that primarily benefit private entities, such as private businesses, charitable organizations, or schools. A bond is a PAB if more than ten percent of the proceeds are to be used for any private business use (use test) and more than 10 percent of debt service is secured by private property or payments derived from that property (security test) (Congressional Research Service,

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[37] Municipalities (but not states) may file for bankruptcy (Chapter 9). The purpose of Chapter 9 is to provide a financially distressed municipality protection from its creditors while it develops and negotiates a plan for adjusting its debts, usually by extending debt maturities, reducing the amount of principal or interest, or refinancing the debt by issuing new bonds. See United States Courts.
[38] Municipal Securities Rulemaking Board (MSRB), Muni Facts. The annual default rate is about 0.04 percent (Fidelity Investments, 2023).

2022). PABs generally are not exempt from federal income tax, but certain "qualified" PABs are tax-exempt, even though they meet the two-part private activities test.[39]

3. ESG Labeled Bonds

The municipal bond market is highly fragmented compared to other fixed-income markets, with multiple sectors, submarkets, and tens of thousands of issuers (Forbes, 2024). A contributing factor to the variation and fragmentation in the municipal bond market is the rapid growth of socially responsible investing strategies driven, in part, by municipal issuer sales of "ESG labeled bonds," which is a designation made by an issuer to connote that bonds prioritize environmental (green or blue [the latter for ocean-friendly issues]), social, and/or governance outcomes.[40]

4. Insurer Holdings of Municipal Bonds

Municipal bonds account for a substantial fraction of the insurance industry's aggregate cash and invested assets. Municipal bonds are at very low risk for default compared with corporate bonds. Ten-year cumulative default rates averaged 0.09 percent for municipal bonds from 1970-2022, compared with 2.23 percent for corporate bonds.

About 11 percent of all municipal bonds are held by insurance companies (Fidelity Investments, 2023). At year-end 2023, U.S. insurers' exposure to municipal bonds was $467.5 billion, down 7.4 percent greater than at year-end 2022 (**Figure 8**). As a percentage of total cash and invested assets, municipal bonds have fallen substantially since 2018, from 8.2 percent to 5.5 percent.

As we show in Section III, municipal bonds are the most employed form of financial instrument for making social impact investments.

B. Mortgages and Mortgage-Backed Securities

U.S. insurance companies are major players in mortgage markets, and real estate markets more generally. By our calculations, which leverage insurance company financial statement data held by the NAIC, U.S. insurer-investors held about $1.4 trillion in mortgages and mortgage-related investments at year-end 2023, or about

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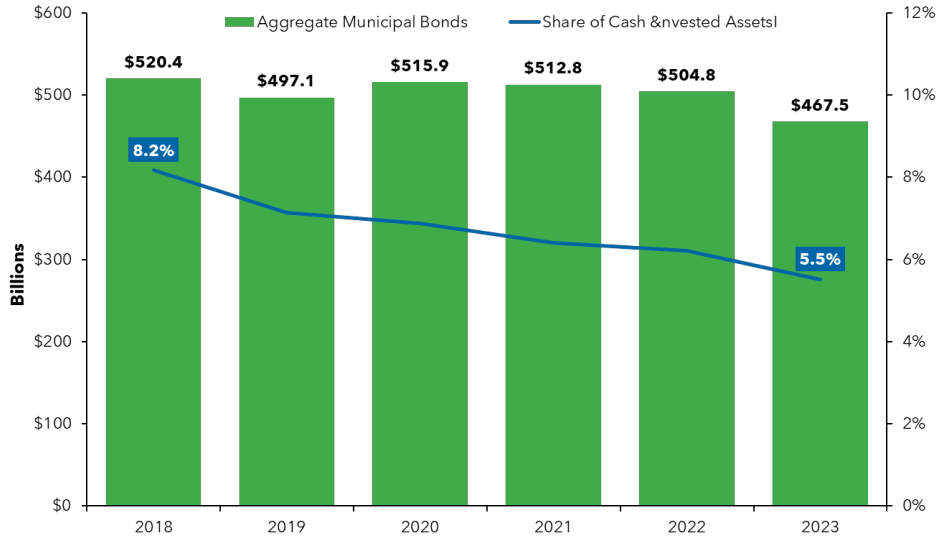
[39] PAB interest is taxable unless it is a "qualified private activity bond," as defined in the IRS Code § 141(c). These may include (if qualified) exempt facility bonds, mortgage bonds, small issue bonds, student loan bonds, redevelopment bonds, or 501(c)(3) bonds.

[40] As we note in Section I.C.3, political headwinds may curtail future issue of ESG-labeled municipal bonds.

16.8 percent of total cash and invested assets. Mortgages and related securities are an important component of the pool of social impact vehicles.

Figure 8. Municipal Bonds Held by Insurance Companies

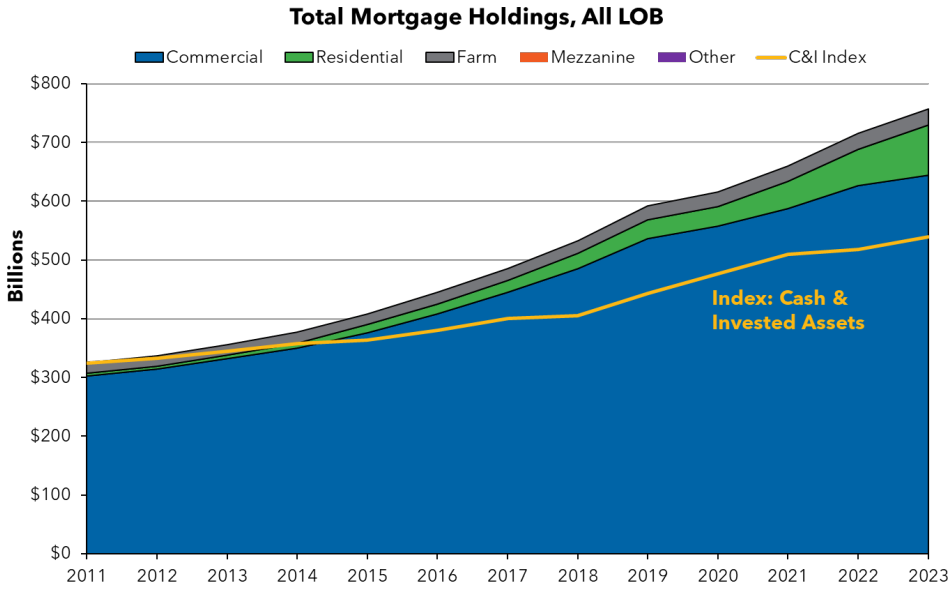


Source: CIPR
Data Source: NAIC, Capital Markets Bureau (annual filing statements)

1. Mortgages

U.S. insurers' exposure to mortgage loans—largely commercial, residential, and farm—has increased by just under 113 percent in the past decade (2013 to 2023), from $355.9 billion to $757.1 billion (**Figure 9**). Over the same period, total cash and invested assets (C&I) increased by less than 57 percent (indexed by the yellow line). Thus, mortgages are becoming an increasing share of total cash and invested assets, from 6.6 percent in 2013 to 8.9 percent in 2023. Commercial mortgages, by far the largest component of insurer-held mortgages, increased about 94 percent, from $332.0 billion to $644.8 billion. Residential mortgages made up a negligible share of cash & invested assets in 2013 at only $4.5 billion but by 2023 had increased to $85.2 billion, or 1 percent of cash & invested assets.

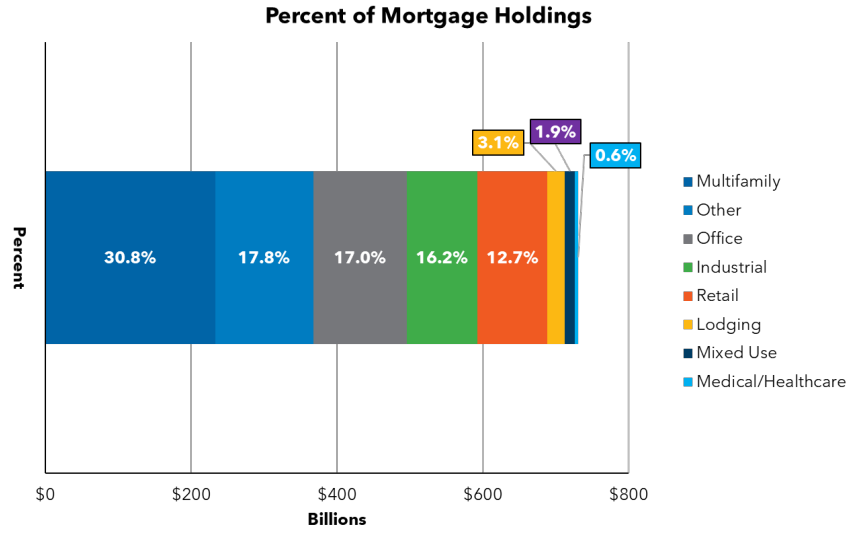
Figure 9. Mortgage Holdings by Insurers, 2011 – 2023



Source: CIPR
Data Source: NAIC/Capital Markets Bureau Annual Financial Statements

A significant portion of insurer-held mortgages, roughly $233B of $757B in 2023, are devoted to multifamily properties, which are largely commercial mortgages (**Figure 10**).

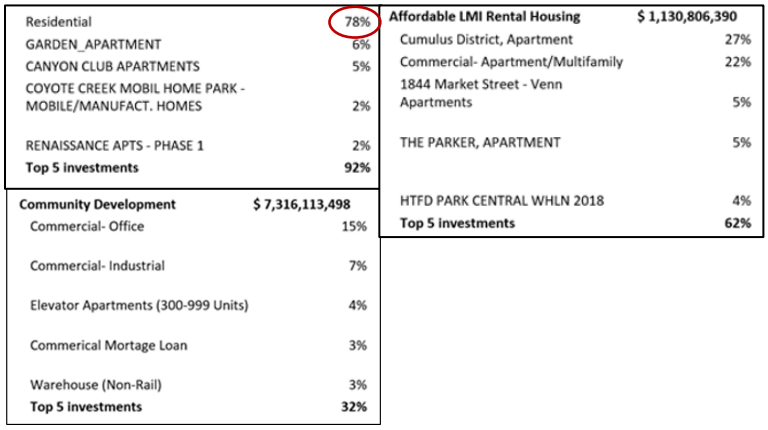
Figure 10. Percent of Mortgage Holdings by Property Type



Source: CIPR
Data Source: NAIC/Capital Markets Bureau and Annual Financial Statements

In addition to the other benefits of holding mortgages highlighted above, they are also used as social impact investments. Insurers have underwritten or purchased mortgages for affordable housing (ownership and rental), community development, and various social services. **Figure 11** provides an example of mortgage holdings from one unidentified insurer. In this case, 78 percent of mortgage holdings are residential, with the remaining (commercial) mortgages used for affordable low- and moderate-income (LMI) rental housing and community development activities.

Figure 11



Residential	78%
GARDEN_APARTMENT	6%
CANYON CLUB APARTMENTS	5%
COYOTE CREEK MOBIL HOME PARK - MOBILE/MANUFACT. HOMES	2%
RENAISSANCE APTS - PHASE 1	2%
Top 5 investments	**92%**

Affordable LMI Rental Housing	**$ 1,130,806,390**
Cumulus District, Apartment	27%
Commercial- Apartment/Multifamily	22%
1844 Market Street - Venn Apartments	5%
THE PARKER, APARTMENT	5%
HTFD PARK CENTRAL WHLN 2018	4%
Top 5 investments	**62%**

Community Development	**$ 7,316,113,498**
Commercial- Office	15%
Commercial- Industrial	7%
Elevator Apartments (300-999 Units)	4%
Commerical Mortage Loan	3%
Warehouse (Non-Rail)	3%
Top 5 investments	**32%**

Source: Proprietary

2. Mortgage-Backed Securities

An alternative way insurers invest in mortgages is by purchasing mortgage-backed securities (MBS). The pool of mortgages that make up MBS typically are securitized. They are sold to a trust, either a government-sponsored enterprise (GSE) (in the case of residential MBS) or a private institution. The trust then structures the loans into MBS. These MBS are then issued and sold to investors. Investors in mortgage-backed securities receive periodic payments similar to bond coupon payments.

MBS may be either residential MBS (RMBS) or commercial MBS (CMBS).

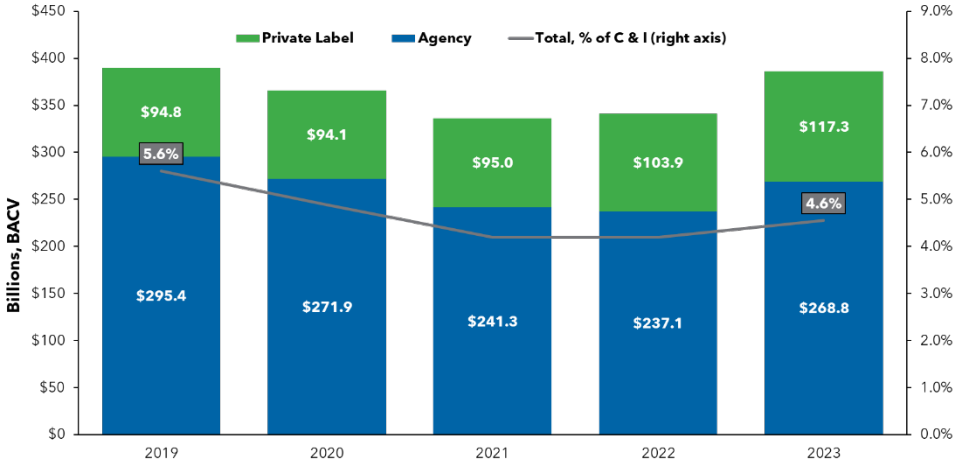
a) Residential Mortgage-Backed Securities

RMBS may be agency-backed ("agency") or non-agency-backed ("private label"). For agency RMBS, the timely payment of principal and interest is either guaranteed directly by the full faith and credit of the federal government through the Government National Mortgage Association (GNMA, or "Ginnie Mae") or indirectly through government-sponsored enterprises (GSEs) designed for this purpose: the Federal National Mortgage Association (FNMA, or "Fannie Mae") or the Federal Home Loan Mortgage Corporation (FHLMC, or "Freddie Mac").

Non-agency RMBS are issued by private financial institutions rather than government or quasi-government agencies. These private institutions include, among others, commercial banks, savings and loan institutions, and mortgage banks. The underlying collateral of private label securities generally consists of mortgages that do not conform to the requirements for inclusion in MBS issued by the agencies. The principal balance of the mortgage may be too large, documentation too limited, loan-to-value ratios too high, or other requirements not met.

At year-end 2023, U.S. insurers' investments in residential MBS (RMBS), including both agency-backed (agency) and non-agency-backed (private-label), increased by 13 percent from year-end 2022 and totaled about $386 billion in book/adjusted carrying value (BACV) (**Figure 12**).

Figure 12. Six-Year Historical RMBS Exposure



Source: Jennifer Johnson, Jean-Baptiste Carelus, and George Lee, 2024, "U.S. Insurers' Exposure to Residential Mortgage-Backed Securities Increases Double Digits in 2023," *Capital Markets Special Report*, Capital Markets Bureau, NAIC. August 7.

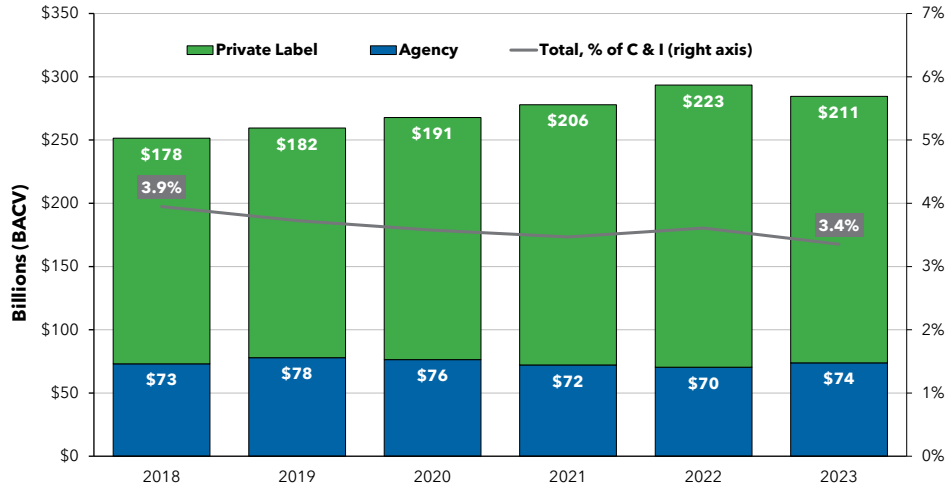
While data show that insurers prefer agency RMBS, they have maintained a significant exposure to private-label mortgage securities, for which the balance sheet value (BACV) increased 23.7 percent from 2019 to 2023 and almost 13 percent in 2023 alone. Indeed, private label securities have made up an increasing percentage of all MBS, rising from 24.3 percent in 2019 to 30.4 percent in 2023.

Agency MBS are considered the lowest risk, given their government or quasi-government backing. Non-agency MBS, or private-label MBS, carry higher risk and potentially higher yields since they are not government-guaranteed.

b) Commercial Mortgage-Backed Securities

Like RMBS, CMBS may be agency-backed ("agency") or non-agency-backed ("private label"); however, agency CMBS consist only of loans for multifamily housing developments. In the last 5 years, CMBS has fallen as a percentage of total cash and invested assets from 3.9 percent to 3.4 percent.

Figure 13. Six-Year Historical CMBS Exposure



Source: Michelle Wong, 2024, "U.S. Insurer Investments in Private-Label Commercial Mortgage-Backed Securities Decline at Year-End 2023," *Capital Markets Special Report*, Capital Markets Bureau, NAIC. November 6.

C. Tax Credits

Insurers may acquire investments that predominantly provide tax credits. Two common types of credit programs include the Low-Income Housing Tax Credit (LIHTC) and the New Markets Tax Credit (NMTC). Broadly, the LIHTC program subsidizes the acquisition and construction or rehabilitation of affordable rental housing for low- and moderate-income (LMI) tenants. The NMTC program is designed to incentivize private investment in distressed communities to foster community development and economic growth.

1. Low-Income Housing Tax Credit

The LIHTC Program, which was enacted as part of the 1986 Tax Reform Act (P. L. 99-514), is the federal government's primary policy tool for the development of affordable rental housing and it is the most important resource for creating affordable housing in the United States in terms of volume of affordable housing supplied. From its inception in 1987 through 2022, the latest date at which data are available, the

LIHTC program has financed over 53,000 projects that provide about 3.24 million units of affordable rental housing.[41]

The LIHTC program awards developers federal tax credits to offset construction costs in exchange for agreeing to reserve a certain fraction of units that are rent-restricted for lower-income households (see Congressional Research Service, 2023). Specifically, under the "20/50 rule," at least 20 percent of units must be rented at affordable rates to tenants with incomes below 50 percent of area median income.[42] Alternatively, under the "40/60 rule," at least 40 percent of the property's units must be rented at an affordable rate to tenants who earn less than 60 percent of area median income.

Developers need upfront financing to complete construction so they will usually sell their tax credits to outside investors (mostly financial institutions) in exchange for equity financing. Moreover, developers most commonly are non-profit entities and have no use for tax credits. The equity reduces the financing developers would otherwise have to secure and allows tax credit properties to offer more affordable rents.

The credits are claimed over 10 years. For example, for a project with a $1,000,000 qualified basis, tax credits would be issued for $900,000, which would be employed against tax liability at $90,000 per year.[43]

At the LIHTC's inception in 1986, the federal government provided funding to states of $1.25 per resident.[44] The per capita amount was raised to $1.50 in 2001 and then to $1.75 in 2002. Small states may receive significantly higher allocations. In 2024, the basic allocation is $2.90 per resident. However, The Affordable Housing Construction Act (S. 5156) would reinstate and make permanent the 12.5 percent increase in LIHTC allocation and triple the per-capita allocation amount for 9 percent LIHTCs from $2.90 to $9.79 beginning in 2025, thereafter adjusted for inflation.[45]

The LIHTC program gives investors a dollar-for-dollar reduction in their federal tax liability in exchange for providing financing to develop affordable rental housing.

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[41] U.S. Department of Housing and Urban Development, Office of Policy Development & Research, Low-Income Housing Tax Credit (LIHTC): Property Data.

[42] Housing is affordable if the cost is ≤ 30 percent of gross household income. Area Median Income is metropolitan median income in metropolitan areas and state median income in non-metropolitan areas.

[43] The qualified basis is the portion of the low-income building associated with low-income units.

[44] Novogradac & Company LLP, "About the LIHTC."

[45] Novogradac & Company LLP, *Novogradac Journal of Tax Credits*, vol. 15, no. 11.

Investors' equity contribution subsidizes low-income housing development, thus allowing some units to rent at below-market rates. In return, investors receive tax credits paid in annual allotments, generally over 10 years. In addition, as equity owners (LPs) of the properties, they receive deductions for passive losses, such as depreciation, further reducing their tax liability.

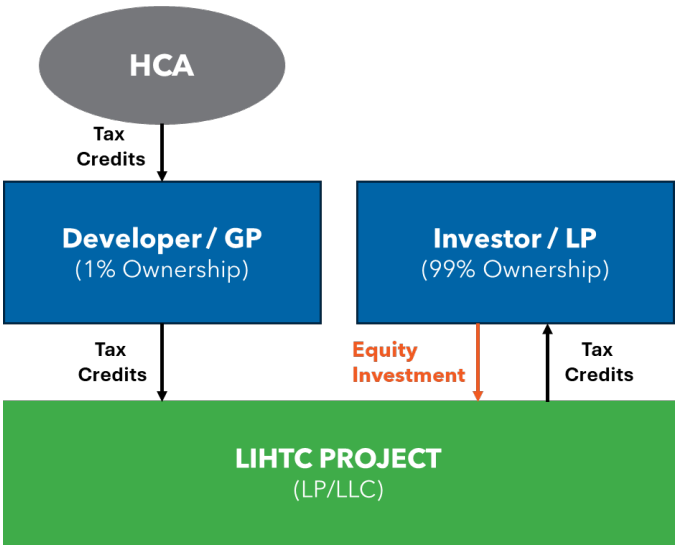
Financed projects must meet eligibility requirements for at least 30 years after project completion. In other words, owners must keep the units rent-restricted and available to low-income tenants. At the end of the period, the properties remain under the control of the owner.

We discuss existing insurance company investments in LIHTCs in Section III.C.3. The statutory accounting by insurance companies for LIHTCs has changed beginning January 1, 2025. These changes are highlighted in Section.

(a) Direct Investment

For direct investment, LIHTC projects generally are structured as limited partnerships (LPs) or Limited Liability Companies (LLCs), which provide limited liability to investors.[46] The investor can make direct investments in single LIHTC projects through the LP/LLC (**Figure 14**).

Figure 14. Legal Structure of a Direct Investment in a LIHTC Project



Source: CIPR

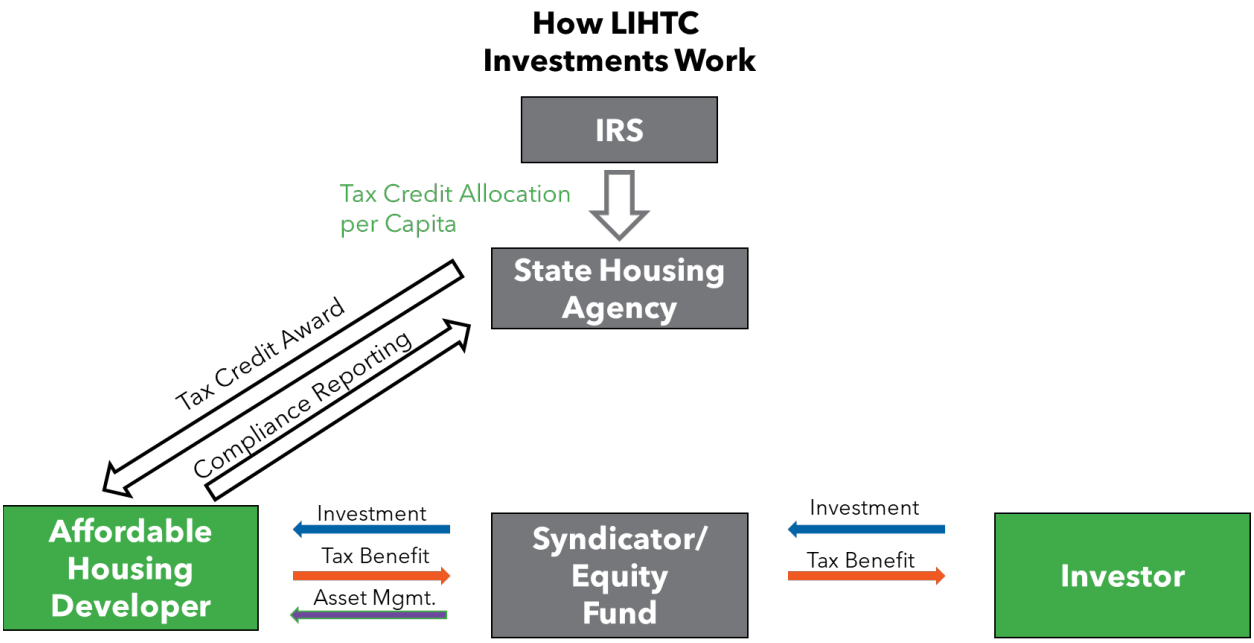
[46] Community Affairs Department, Comptroller of the Currency, U.S. Department of the Treasury, "Low-Income Housing Tax Credits: Affordable Housing Investment Opportunities for Banks," March 2014.

(b) Investment Through an Equity Fund

Much more common, especially for LIHTC investments by insurance companies, is to exchange equity dollars for tax credits and other tax benefits (such as passive losses) through an intermediary known as a syndicator or equity fund (Figure 15).

The equity fund pools several projects into a single LIHTC equity fund and then markets the tax credits to investors, who are limited partners (LPs) in the equity fund. Pooling spreads the risk across various LIHTC projects that benefit from the fund.

Figure 15. Investment in LIHTC Project Through an Equity Fund



Source: CIPR; St. Louis Equity Fund

Developers benefit because they receive equity for the project immediately. Moreover, as non-profit entities (usually), they would have been unable to take advantage of the tax credits because they (usually) have no taxable income. Investors benefit not only from the tax credits but also from the deductibility of passive losses, such as depreciation, passed along from the equity fund.

(c) 9 Percent Credit and 4 Percent Credit

Each year, the federal government allocates financial resources to state housing agencies on a per capita basis, as described above, for further allocation of the LIHTCs to developers.

The 9 percent credit results in a (roughly) 70 percent subsidy for the LIHTC project. Consider a new apartment complex with a $1 million qualified basis. The (roughly) 70

percent subsidy is derived by discounting the future stream of tax credits by the appropriate discount rate (r) (Equation 1).[47]

$$(1) \qquad \sum_{t=1}^{10} \frac{\$90,000}{(1+r)^t} \approx 70\%$$

The 9 percent and 4 percent annual credits are subject to adjustment by the applicable federal rate (AFR), which was 8.04 percent for 9 percent credits and 3.44 percent for 4 percent credits in January 2024 (instituted by the Protection Against Tax Rate Hikes [PATH] Act in December 2015).

2. New Markets Tax Credit[48]

The NMTC program was authorized by the Community Renewal Tax Relief Act (P.L. 106-554) in December 2000 to increase the flow of private capital to businesses and non-profit entities in low-income communities. The program was intended to generate $15 billion in new private-sector investments in low-income communities.[49] NMTCs can finance several property types, including mixed-use developments (businesses and multifamily units), so long as the property is within a qualified low-income community (QLIC), as defined by the U.S. Department of the Treasury.[50] Purely residential property developments do not qualify for the NMTC.

NMTCs usually are layered with other financing sources, such as traditional debt, grants, tax increment financing, and Historic Tax Credits.

(a) Basic Model of an NMTC Investment

The New Markets Tax Credit (NMTC) program provides tax incentives for private individuals to invest in distressed communities, which are known as Qualified Equity Investments (QEIs). Specifically, investors receive a tax credit for 39 percent of the QEI, which they claim over seven years according to a schedule: 5 percent of the QEI

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[47] This discount rate is the Applicable Federal Rate (AFR) for LIHTC, which for 9 percent credit projects was 8.04 percent in January 2024.

[48] Primary sources for this section of the report include SBFriedman Development Advisors, "New Markets Tax Credit (NMTC) Program Summary;" NOVOGRADAC, "New Market Tax Credit Program Summary," New Markets Tax Credit Resource Center; and Internal Revenue Service, "New Markets Tax Credit," LMSB-04-0510-016, May 2010.

[49] *Op. cit.*, NOVOGRADAC, "New Market Tax Credit Program Summary."

[50] The spatial construct of a "community" in the context of the NMTC is a census tract. A census tract is a QLIC if the poverty rate exceeds 20 percent, or median income is below a specified standard. For census tracts in metropolitan areas, this standard is the greater of 80 percent of metropolitan median income or 80 percent of statewide median income. In census tracts outside of metropolitan areas, this standard is below 80 percent of statewide median income.

amount in years 1 – 3 and a 6 percent credit of the QEI amount in years 4 – 7. Historically, investors have paid between $0.70 and $0.85 per $1 of NMTC benefit, with recent prices "clustering around $0.83."[51] At a rate of $0.80 per $1 tax credit, equity invested is $\$0.80 \times 0.39 = \$0.312 \approx \$0.31$ per $1 of QEI. The remaining 69 percent of the financing for the project must come from other sources.

To deliver private capital to these underserved "new markets," the statute authorizing the NMTC program created a new category of investment intermediary known as a Community Development Entity (CDE). The program design allows a CDE to use its local knowledge and expertise to decide in which businesses to invest or lend with the funds it raises with the new markets tax credit.[52]

A CDE is typically a non-profit loan fund, community development organization, or private financial institution. To gain certification as a CDE, the entity must be a domestic corporation, have a demonstrated mission of serving or providing capital to low-income communities or people, and maintain accountability to residents of low-income communities through representation on a governing or advisory board to the CDE.[53] CDEs are certified by the Community Development Financial Institutions (CDFI) Fund of the U.S. Treasury, the administering agency for the NMTC. The CDFI Fund conducts a competition for NMTC allocation on an annual basis.

Private NMTC investors make QEIs to CDEs, which, in turn, make Qualified Community Investments (QCIs) to Qualified Active Low-Income Community Businesses (QALICBs) (**Figure 16[a]**). A QEI must be fully invested in a CDE for seven years for an investor to meet NMTC compliance requirements. QALICBs are businesses located in, or that provide services to, QLICs. Projects must meet the federal definition of QALICB to be eligible for NMTC financing.[54] CDEs may engage in other activities as well, such as purchasing loans that are QCIs and providing financial counseling to individuals and small businesses in low-income communities.

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[51] *Op cit.*, SBFriedman Development Advisors. Investors typically pay well less than $1 for the NMTC benefit because the investor equity is provided upfront while the NMTC benefit is spread over the seven-year compliance period.

[52] Ibid.

[53] New Markets Tax Credit Coalition, "How It Works."

[54] *Op cit.*, SBFriedman Development Advisors.

Figure 16(a). How the NMTC Program Works (Basic Model)

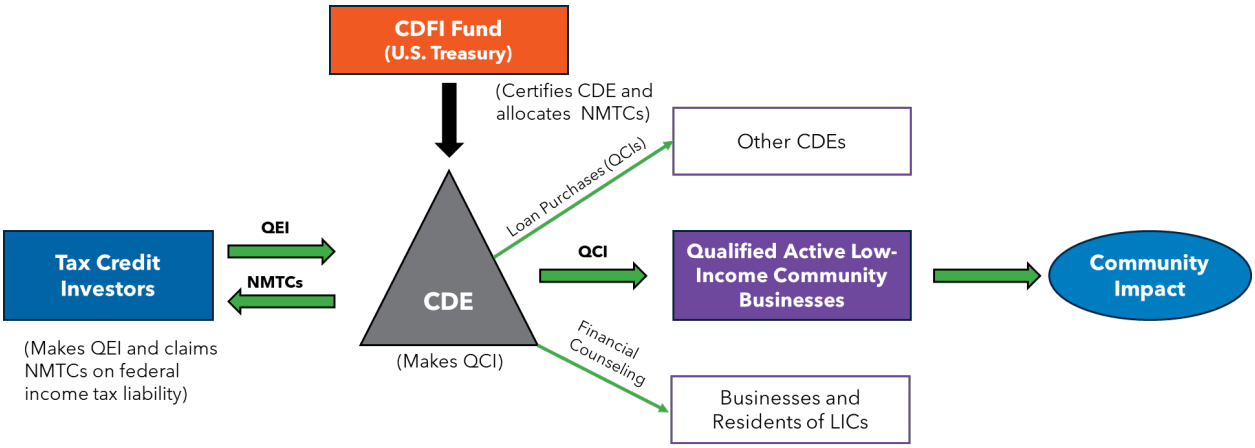


Chart Source: CIPR
Information Sources: BDO USA, "New Markets Tax Credits: Funding that Fuels Economic and Social Impact." SBFriedman, "New Markets Tax Credit (NMTC) Program Summary," 2018. Internal Revenue Service, "New Markets Tax Credit," LMSB-04-0510-016, May 2010.

(b) Leveraged Investments

In the leverage model, the tax credit investor pools tax credit equity with other financing sources in an investment fund (**Figure 16[b]**).[55] The other financing sources generally are debt so that the NMTC investor maintains ownership of the fund and can claim all the tax credits. The "leverage loan" is often a traditional commercial loan made on the basis of the project's underlying financials. In other cases, the source of a leverage loan comes from the project sponsor or non-bank sources, such as grants, donations, tax increment financing (TIF), or HUD 108 loans. The project sponsor is often primarily responsible for arranging the sources to fund the leverage loan.

(c) Statutory Accounting for NMTC and Other Tax Credits

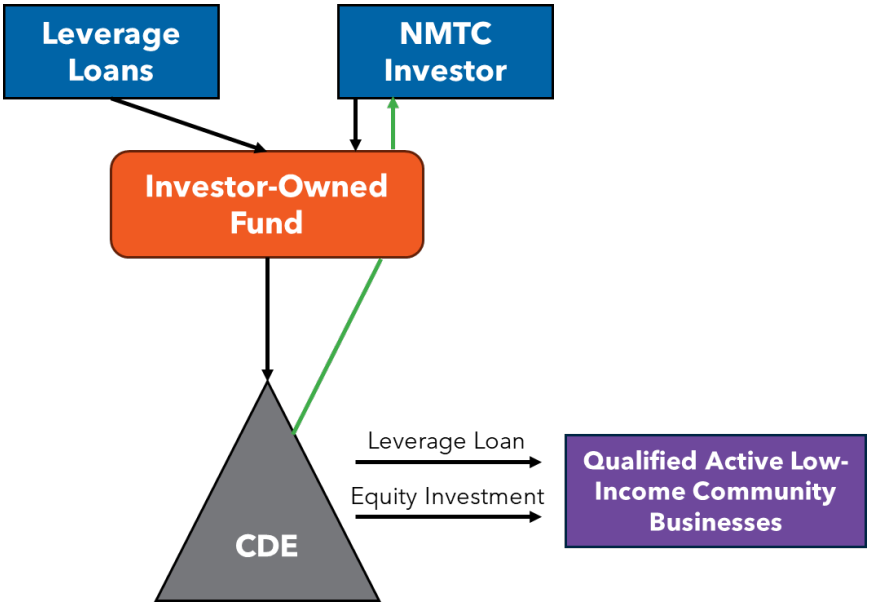
The extent of insurer involvement in NMTC is not known.[56] With the adoption of Statutory Accounting revisions, effective January 1, 2025, all investments that predominantly provide state and/or federal tax credits, regardless of whether they are in the form of debt or equity, will be in the scope of SSAP No. 93—Investments in Tax

[55] *Ibid*.

[56] If NMTCs were held before January 1, 2025, and were in the form of debt, they likely would have been captured as a bond under SSAP No. 26—Bonds and reported on Schedule D-1. If in equity form, they would be in the scope of SSAP No. 48—Joint Ventures, Partnerships, and Limited Liability Companies and reported on Schedule BA.

Credit Structures.[57] Specific tax credit programs are not named in the guidance, meaning there will be no separate reporting lines for different types of tax credits. References to the LIHTC have been eliminated.

Figure 16(b). How the NMTC Program Works (Leverage Loan Model)



Source: SBFriedman, "New Markets Tax Credit (NMTC) Program Summary," 2018.

Insurers currently do not invest in NMTCs, but NMTC insurer investments are likely on the horizon. Currently, the NAIC has guidance only for LIHTCs; however, revisions have been adopted, effective January 1, 2025, that incorporate all investments in tax credits, regardless of whether they are in the form of debt or equity and regardless of the type of credit. Specific tax credits will not be named in the guidance, meaning there will be no reporting lines for different types of tax credits, and specific references to the LIHTC will be eliminated.[58]

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[57] See National Association of Insurance Commissioners (NAIC), Statutory Accounting Principles (E) Working Group, "Clarification of Accounting Guidance for Recognition of Tax Credits," Ref# 2024-18. See also NAIC, Statutory Issue Paper No. 170, "Tax Credits Project."

[58] If the NMTCs are in the form of debt, they would likely be captured in the scope of Statutory Accounting Principle (SAP) No. 26 and reported on schedule D-1. If in equity form, they would likely be in the scope of SAP No. 48 and reported on schedule BA as a joint venture, partnership, or LLC investment.

D. Community Development Financial Institutions

Community Development Financial Institutions (CDFIs) are authorized under various U.S. Treasury regulations. They are pivotal lenders in promoting community and economic development in underserved areas, particularly affordable housing, but they also lend for other community development purposes, such as support of small businesses owned and operated by low- and moderate-income (LMI) individuals or located in LMI areas.

CDFIs are mostly specialized banks but can be credit unions, loan funds, and venture capital providers. The mission of these institutions is to inject capital into areas that conventional economic catalysts often overlook, particularly LMI areas. The objective is to ensure residents have the means to start businesses, purchase homes, and access essential community services. CDFIs may also provide financial services other than lending in LMI areas.

CDFIs are certified by the Community Development Financial Institutions Fund of the U.S. Treasury, playing a similar role to Community Development Entities (CDEs) under the New Markets Tax Credit program. To become certified, a CDFI must be based in the United States and have a proven mission to support LMI communities.

The expansion of CDFIs has been significant over time. As of 2023, there were almost 1,500 CDFIs in the United States (including U.S. territories), collectively holding over $450 billion in total assets.[59]

Insurers and other investors may invest in CDFIs directly or through the Opportunity Finance Network (OFN). The OFN provides investors with a "tailored" portfolio of OFN member CDFIs, diversified across geography and size.[60] The OFN's Finance Justice Fund supports CDFIs with low-cost, long-term debt and grant funds. The goal of the Finance Justice Fund is to "help close the racial wealth gap and accelerate the work of OFN member CDFIs serving rural, urban, and Native communities experiencing disproportionately high rates of persistent poverty and disinvestment."

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[59] Fed Communities (Federal Reserve System) (2023). How CDFIs are faring – Insights from the Fed's 2023 CDFI Survey. September 14. See also Community Development Financial Institutions Fund, U.S. Department of the Treasury, "Annual Report Fiscal Year 2023."

[60] See Opportunity Finance Network (OFN), "Invest in CDFIs."

Investments in CDFIs carry several risks, including potential instability in LMI property and credit markets, which may be more volatile or susceptible to downturns.[61] On the other hand, some evidence suggests that investments in CDFIs and other social impact vehicles are countercyclical, in which case CDFI investments could serve as a potential hedge against economic downturns.[62]

Numerous insurers invest in CDFIs. The NAIC's Securities Valuation Office (SVO) evaluates CDFI investments and assigns them NAIC designations. These designations "represent opinions of gradations of the likelihood of an insurer's timely receipt of an investment's full principal and expected interest."[63] NAIC SVO designations are broadly similar to ratings assigned by nationally recognized statistical rating organizations (NRSROs), for example, to public securities such as corporate bonds.[64] We discuss these designations further in Section IV of the paper. Aeris, a non-NRSRO private entity, provides ratings, which are in a format like the ratings of S&P Global Ratings (i.e., AAA, AA+, AA, . . . , D), for over 100 CDFIs.[65]

E. Private Equity Funds

Private equity (PE) is capital put at risk to invest in businesses, business ventures, funds (such as loan funds), or other assets that are not listed on open, public exchanges (hence, "private").[66] PE firms are investment management companies, and the investments of these firms usually (but not always) take the form of a PE fund. Unlike hedge funds, PE firms take ownership and management control of corporations in which the fund invests.[67]

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[61] William R. Emmons, R. Alton Gilbert, and Timothy J. Yeager, 2001, "The Importance of Scale Economies and Geographic Diversification in Community Bank Mergers." *Federal Reserve Bank of St. Louis, Working Paper No. 2001- 024A*. November.

[62] Shuai Wang, Haoran Wang, and Zejiang Zhou, 2023, "Is the Corporate Social Responsibility Countercyclical? Evidence from Chinese Listed Companies," *China Journal of Accounting Studies, 11*(2), 332-353. doi:10.1080/21697213.2023.2239666. (requires a journal subscription or library access)

[63] NAIC, *Purposes and Procedures Manual of the NAIC Investment Analysis Office*.

[64] The NAIC SVO and NRSROs use very different scales, however, and there are no equivalencies between SVO designations and NRSRO ratings.

[65] We use Aeris data extensively in our analysis of CDFI financial performance and provide a distribution of Aeris ratings over the CDFIs they service (see Section IV.C).

[66] See Gilligan and Wright (2020) for a detailed discussion of private equity. See also the NAIC/Center for Insurance Policy & Research, "Private Equity" Insurance Topic.

[67] Justin Robertson, 2009, "Private Equity Funds," *New Political Economy, 14*(4), 545-555. doi:10.1080/13563460903288270. (requires a journal subscription or library access)

PE investing is typically carried out through a limited partnership (LP) structure in which the PE firm serves as the general partner (GP).[68] The LPs commit to providing a specific amount of capital to the fund. The GP then has an agreed time (usually around 5 years) to invest the committed capital and return capital to LPs (usually about 10 to 12 years). Thus, a PE fund is a closed-end fund with a finite life. Because the investment horizon is long term (for returns), PE fund investments are considered relatively illiquid assets.

The Global Impact Investing Network's (GIIN) "Annual Impact Investor Survey" suggests that *PE is the most common instrument employed in impact investing*.[69] The survey also suggests that 82 percent of impact investors with substantial allocations to PE principally target market-rate returns.

F. Private Credit

Private credit refers to debt or debt-like securities that are not publicly issued or traded and are primarily extended to middle-market firms.[70] Private credit securities are structured to provide flexible financing solutions to businesses that might not have access to traditional bank loans or public market financing. These investments are therefore important in fostering growth for small and medium-sized enterprises (SMEs), startups, and projects in low- and moderate-income or other underserved areas.

1. Purpose and Structure

As a form of social impact investment private credit involves lending capital to private entities, and like other social impact investments, is designed to generate both reasonable financial returns and positive social outcomes. Unlike traditional *public* (or primary) *market* debt instruments (i.e., bonds), *private debt*; that is private credit, typically includes loans and credit facilities provided directly to businesses. Private credit has a variety of strategies that include direct lending, distressed debt, venture debt, mezzanine finance, and other bespoke lending arrangements, tailored to meet

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[68] Steven M. Kaplan and Antoinette Schoar, 2005, "Private Equity Performance: Returns, Persistence, and Capital Flows," *Journal of Finance, 60* (4), 1791-1823. doi:10.1111/j.1540-6261.2005.00780.x.
[69] See Abhilash Mudaliar and Rachel Bass, 2017, "Evidence on the Financial Performance of Impact Investments," Global Impact Investing Network. "Impact Investments" are not necessarily investments in the social sector. For example, they may be environmental ("green") investments.
[70] Jennifer Johnson and Michele Wong, "Private Credit Primer." Capital Markets Bureau, NAIC. Much of the material in this section is taken verbatim or slightly paraphrased from this report.

the specific needs of borrowers and investors alike. Direct lending is the largest segment and accounts for about 40% of the U.S. private credit market.

Private credit lenders benefit from stronger control over documentation and can customize the terms of transactions given a direct relationship with borrowers. Private credit deals involve comprehensive due diligence and active engagement between lenders and borrowers to ensure the loan terms align with investment goals. If social impact is a goal, these terms may include specific covenants or requirements related to job creation, community development, or environmental sustainability.

Investors in private credit include institutional investors (including insurance companies, impact investment funds, and high-net-worth individuals. Private credit investments may be part of broader community development strategies, such as tax credits and CDFIs.

2. Economic Conditions and Risk Management

The effectiveness of private credit as a social impact investment tool with an appropriate financial return is influenced by broader economic conditions. During economic downturns, businesses in LMI communities may face heightened financial stress, impacting their ability to meet debt obligations. Thus, private debt investors must incorporate robust risk management strategies, including diversification across sectors and geographies, and duration matching to mitigate potential risks. Despite these challenges, private debt remains a compelling option for investors due to its potential for stable returns and significant social impact.

Private credit is a significant investment vehicle in providing capital to businesses and projects that contribute to community and economic development and social welfare in underserved communities. By bridging the financing gap for these entities, private credit may support financial inclusion and economic growth. It may also align with the strategic goals of social impact investors who prioritize both financial returns and positive societal outcomes.

G. Other Social Impact Investments

There are other opportunities for social impact investing that insurance companies have not yet pursued. One is a new structured finance instrument from Nuveen focused on social impact. Another, The Community Development Fund, is an institutional municipal fund that invests in social impact activities.

1. Structured Finance Investment from Nuveen

In May 2024, Nuveen announced a new investment product directed at social impact investing, the U.S. Impact Collateralized Fund Obligation (CFO). Nuveen has

extensive client relationships with leading U.S. insurance companies. Jointly, they believe the best way to maximize insurance company impact investments is through high-quality, market-yielding fixed-income instruments held on Schedule D on their statutory financial filings.[71] Nuveen's "conservatively structured" CFO is backed by a diverse mix of responsible investing and impact asset classes, including affordable housing, commercial property assessed clean energy (CPACE) loans, sustainable energy infrastructure credit, and impact private equity. This structure would pair insurance company capital (and philanthropic capital) for positive social and environmental outcomes while providing an investment that meets the investors' financial objectives. Life insurers could invest in investment grade-rated notes on Schedule D at highly competitive yields.[72] Importantly, this CFO structure is highly repeatable and scalable, allowing for the significant expansion of insurance impact investments over time.

2. The Community Development Fund

The Community Development Fund (CDCDX) is a market-rate bond fund that invests mainly in government agency securities, for which the proceeds are designed to "positively impact community development throughout the United States."[73] The Fund focuses exclusively on providing affordable housing for low- and moderate-income (LMI) borrowers and renters, particularly those in majority minority census tracts. Its inception date was April 2016.

The fund boasts of $250 billion in community development impact. Although the fund was originally intended for investment by commercial banks seeking CRA credit, it welcomes insurance companies as investors and asserts it can manage the larger investments insurers may want to make in a fund.[74]

III. Industry Exposure to Social Impact Investments

In this section we examine the exposure of the insurance industry to social impact investments; that is, the total dollar amount of social impact investments held by the insurance industry. In recent years, numerous news articles have highlighted the

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[71] Nuveen, "U.S. Impact Collateralized Fund Obligation (CFO)." Informational Memo, May 2024.
[72] Philanthropic investors would invest in a higher-returning subordinated note with the opportunity to effectively lever their impact 4:1.
[73] See also the prospectus and the Statement of Additional Information.
[74] Personal communication with Kenneth H. Thomas, Ph.D., President, Community Development Fund Advisors, LLC. CRA is an acronym for the Community Reinvestment Act of 1977, as amended several times.

social impact investments made by the insurance industry. These news articles suggest that insurers invest largely in affordable housing projects and that insurers' impact investment initiatives are designed, at least in part, to address the racial wealth gap. What is missing is a consistent, analytical measure of insurance industry investments in social impact assets.[75]

We present a static (point in time) estimate of insurance industry exposure to social impact investments for 2020, which we consider to be our best estimate of exposure for any given year, although all estimates should be considered lower bounds, meaning that insurer investments in social infrastructure are estimated to be at least as much as we report. Our benchmark is 2020 because a critically important source of data is the California Organized Investment Network (COIN), from which the latest available data are from 2020.

A. Methodology[76]

We identify insurers' exposure to social impact investments by examining their annual statements, where they are required to report details of their cash and invested assets.

First, we identify insurer investments in Low-Income Housing Tax Credits (LIHTCs). LIHTC equity holdings are straightforward to identify because they are reported on a separate line in Schedule BA.[77] LIHTCs may be federal or state, guaranteed or non-guaranteed, and affiliated or unaffiliated. Our numbers represent aggregate total LIHTC equity held on insurance company balance sheets.

Next, we identify insurers' investments in *social infrastructure* private equity (PE) funds. From a Preqin database, we searched for the term "social infrastructure," which identified 62 social infrastructure PE funds. We manually matched the 62 social infrastructure PE funds with Schedule BA holdings by fund name, for which we found 21 matches across the industry.[78]

Finally, we leveraged a database collected and managed by the California Organized Investment Network (COIN) to further examine insurers' exposure to social impact

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[75] Much of the material in this section was previously released by CIPR on its website. See CIPR, "Insurance Company Baseline Exposure to Social Impact Investments," May 2024.

[76] For a more detailed discussion of the methodology, see CIPR/NAIC, "Insurance Company Baseline Exposure to Social Impact Investments," May 2024.

[77] Schedule BA is for reporting "Other Long-Term Invested Assets" and is part of financial reporting in insurer annual statements.

[78] All investments in private equity funds are reported on Schedule BA.

investments. All insurers that write premiums in California of $100 million or more (about 40 percent of all insurers nationally) are required to report their impact investments to COIN. The last call for this information was 2020, and we therefore base our analysis on 2020 data.[79] From the COIN database, we identify further social impact investments. In addition, using a matching process (by CUSIP or name), we also examine whether insurers that *did not report to COIN* made investments like those reported to COIN.[80]

There are three steps involved in examining whether insurers that *did not report to COIN* made COIN-related investments. The first step is to match the COIN investments with entries on insurers' annual financial statements using the investments' "description" in the COIN database or alternative sources.[81] Second, where possible, we identify a CUSIP and rematch using the CUSIPs reported in annual statements. The third step is to match loans on Schedule B (mortgages) with loan numbers from the COIN database.

B. Overall Exposure

Our baseline number for insurance industry exposure to social impact investments is for 2020, the year for which our data are most complete. We consider this baseline estimate to be a lower-bound estimate of social impact investments in the insurance industry because of our reliance on the data from COIN. We presume there are a meaningful amount of social impact investments by insurer-investors that are not captured by COIN or our other sources and, hence, do not figure into our calculation.

We provide exposure estimates for several years before and after 2020 as well. The latest COIN data available are from 2020. Thus, maturing bonds, asset sales and purchases, and other asset changes after 2020 are not captured.

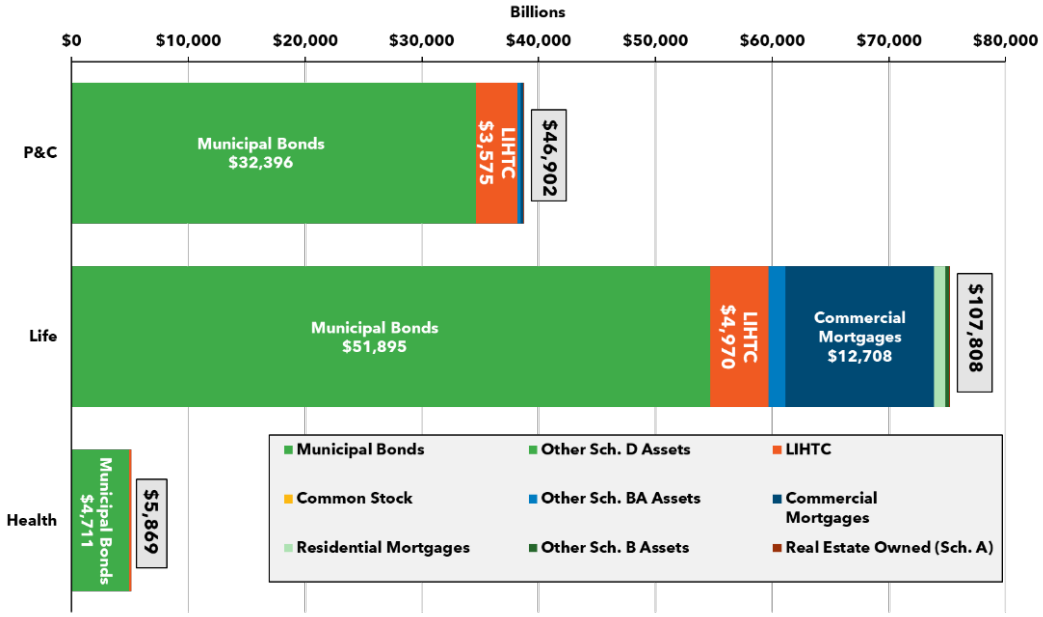
1. Static Exposure

Using the methodology described above, our baseline estimate of insurance industry exposure to social impact investments in the year 2020 is $158.3 billion. These general fund, balance sheet social impact investments amounted to $107.8 billion in

[79] COIN has introduced legislation for another data collection, which would take place in 2025 and would be completed by December of that year (personal communication, July 19, 2024).
[80] A CUSIP is a unique identification number assigned to stocks and registered bonds in the United States and Canada. CUSIP is an acronym for Committee on Uniform Security Identification Procedures, which oversees the CUSIP system.
[81] These includes schedules A (real estate), B (mortgages), BA (other long-term assets), and D (bond and common and preferred stock holdings).

the life sector, $46.9 billion in the property & casualty sector, and $5.9 billion in the health sector (**Figure 17**).

Figure 17. Baseline Exposure of the Insurance Industry to Social Impact Investments (2020)



Source: Center for Insurance Policy & Research, NAIC
Data sources: California Organized Investment Network (COIN) and NAIC

We consider this estimated to be a *lower bound* for social impact investments in 2020 because we believe it possible that we did not capture some of these investments, particularly municipal bonds; private debt placements, if any; and any investments that were not labeled in a way that would allow us to verify that they were, in fact, social impact investments.

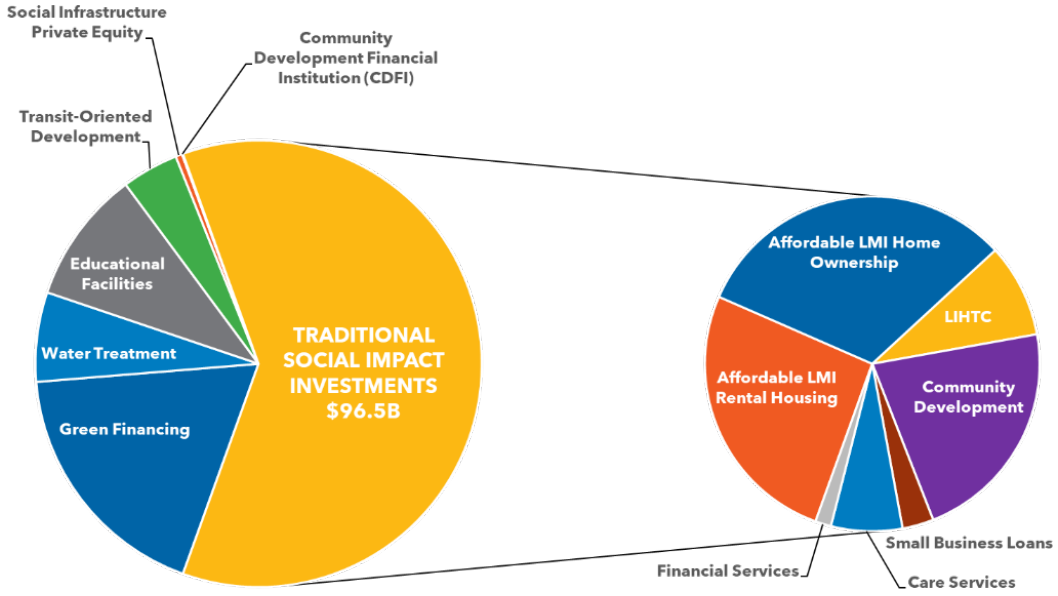
In the case of municipal bonds, we very likely under-represent social-impact-oriented investments because we relied on municipal bond investments reported to COIN. There are tens of thousands of unmatured municipal bond issues, multiple thousands of which are held by insurers. Identifying every bond that could be social-impact-related is intractable, even if the analysis was restricted to municipal bonds held by insurance companies. Such an effort would require pulling out the paperwork associated with each municipal bond issue to evaluate the use of proceeds, as financial databases do not provide the use of proceeds. We searched for an artificial intelligence mechanism for pulling the paperwork and identifying the proceeds of the bonds but were unable to find a solution. Devising our own solution likely would have taken many months. Still, we believe we captured a large portion of these bonds that are held by insurance companies given that, as stated in the methodology section, 40

percent of insurers write premiums in California and would therefore be expected to report to COIN, and we matched any investment reported to COIN to the balance sheets of all insurers that would not be expected to report these investments to COIN.

A large majority of existing social impact investments by insurers were in municipal bonds, accounting for 69 percent of social impact investments in the property & casualty sector, 48 percent in the life sector, and 80 percent in the health sector. Low-Income Housing Tax Credits (LIHTCs) accounted for roughly 5 to 8 percent of social impact investments held by insurers.

Most social impact investments, $96.5 billion, had "traditional" social impact purposes, such as affordable rental and ownership housing and other community development activities (**Figure 18**).[82] We would qualify the remainder of these social impact investments as "social infrastructure." What makes them social impact investments, in our view, is they are specifically targeted to the low- and moderate-income community or otherwise vulnerable or marginalized populations.

Figure 18. Allocation of Social Impact Investments by Use



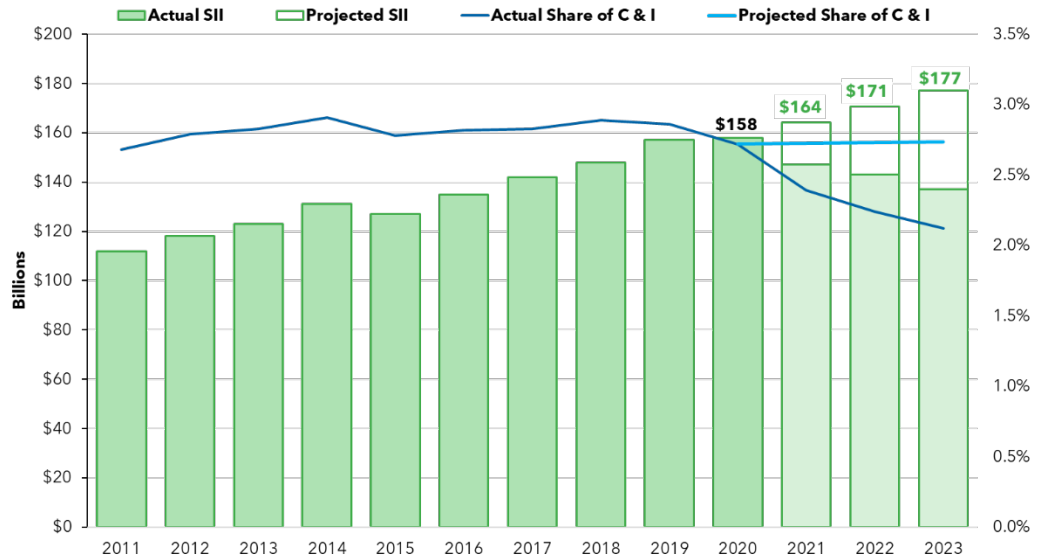
Source: Center for Insurance Policy & Research/NAIC

[82] LIHTCs are used to develop affordable rental housing. In the chart, "Affordable LMI Rental Housing" represents investments in affordable rental housing by means other than LIHTCs.

2. Dynamic Exposure

As noted in the methodology section, we were able to use the COIN data from 2020 and previous years to identify social impact investments from 2011 – 2020 (Figure X). We also generated a rough estimate of social impact investments from 2021 – 2023 using the same data. By these calculations, social impact investments appear to have declined moderately since their peak in 2020 (solid light green bars) but these totals are below what we would consider to be a lower bound; that is, we believe an increase in social impact investments over that period is more likely. There are two reasons for this conjecture. First, some investments may have matured between 2020 and 2023, particularly municipal bonds, or had been sold after 2020. Second, an absolute decrease in social impact investments is inconsistent with investor sentiment. We therefore provide statistical estimates of total social impact investments and social impact investments for 2021 – 2023 (**Figure 19**).[83] The green-outlined portion of the columns for 2021 – 2023 represents our estimates of social impact investments on insurer balance sheets beyond those we could calculate using the COIN data.

Figure 19. Dynamic Look at Insurance Industry Exposure to Social Impact Investments



Source: Center for Insurance Policy & Research/NAIC
Data Sources: COIN, NAIC

[83] These estimates were generated by two-year moving averages.

3. Relative Exposure

Figure 19 also shows social impact investments as a share of total cash and invested assets (dark blue line, right axis). As a share of cash and invested assets, total social impact investments averaged 2.8 percent from 2011 – 2020, rising from 2.7 percent in 2011 to 2.9 percent in 2018-2019 before falling back to 2.7 percent in 2020. After 2020, the share of insurers' social impact investments as a share of total cash and invested assets again appears to have decreased, indicating that insurers' interest shifted from social impact investments to other types of investments. However, using our estimates of total social impact investments in 2021-2023, we project that social impact investments as a share of total cash and invested assets more likely leveled off at around 2.7 percent (light blue line). Even a leveling off of social impact investments as a share of total cash and invested assets could be an underestimate of the evolution of social impact investing, given that a substantial share of institutional investors, which include insurance companies, reported an increased focus on ESG investing in coming years.

C. Exposure by Investment Type

There are numerous ways in which insurers and other institutional investors can make social impact investments. Most of these are listed in **Table 1**, along with the amount of social impact investments we estimated for each investment type. As shown, the large majority of these investments are made through the purchase of municipal bonds.

Table 2. Social Impact Investments – All Asset Types

Asset Type	P&C ($M)	Life ($M)	Health ($M)
Municipal Bonds	32,395.82	51,895.31	4,711.03
Corporate Bonds	5,903.76	32,594.63	795.64
U.S. Governments - Bonds	2,202.50	2,589.29	176.65
Hybrid Securities - Bonds	36.36	104.43	6.80
Bank Loans		102.03	
Joint Venture, Partnership or Limited-Liability Company Interests	78.52	80.01	
Common Stocks	89.29	701.48	
Real Estate	75.94		
Non-collateral loans	4.94		
LIHTC	3,575.38	4,970.26	150.98
Surplus Debentures, etc.	12.99	572.41	0.45

Asset Type	P&C ($M)	Life ($M)	Health ($M)
Any Other Class of Assets	3.81	81.68	
Commercial mortgages	229.48	12,707.81	
Residential Mortgages		977.87	
Farm Mortgages		331.80	
Properties Held for Sale	0.02		
Properties Held for the Production of-Income	2.60	37.37	
Properties Occupied by the Reporting Entity Administrative	0.97	11.58	27.23
Non-Registered Private Funds		48.89	
Total	**44,612**	**107,806**	**5,868**

1. Municipal Bonds

After identifying social impact investments insurers had reported in their annual statements to COIN, we calculated $32 billion in social impact municipal bond holdings for P/C insurers in 2020, $52 billion for life insurers, and $5 billion for health insurers (**Table 2)**. Most municipal bonds were identified as affordable LMI ownership and rental housing.

Table 2. Social Impact Municipal Bond Holdings, by Line of Business and Type of Benefit

Type of Benefit	P/C ($M)	Life ($M)	Health ($M)
Affordable LMI Ownership Housing	6,269.32	18,705.38	1,777
Affordable LMI Rental Housing	12,765.27	8,080.10	2,001.06
Care Services	848.13	1,312.62	97.03
Community Development	1,632.33	3,294.66	125.68
Educational Facilities	4,995.18	7,708.14	203.63
Green Financing	3,017.65	3,977.45	318.47
Small Business Loans	3.06	12.36	2.81
Transit Oriented Development	1,393.73	4,976.99	119.94
Water Treatment / Efficiency for Households	1,471.15	3,827.61	65.39
Total	**32,396**	**51,895**	**4,711**

2. Mortgages

As mentioned in section III.C.1, "Municipal Bonds," the following are insurers' year 2020 holdings.

Table 3. Social Impact Mortgage Holdings

Type of Benefit	P/C	Life		
	Commercial ($M)	Commercial ($M)	Residential ($M)	Farm ($M)
Affordable LMI Own. Housing	57.59	173.76	732.38	
Affordable LMI Rental Housing		1,654.67	197.36	0.12
Care Services	0.85	38.01		
Community Development	143.36	9,932.42	47.63	36.21
Financial Services		226.40		
Green Financing	14.25	365.70		
Healthy Foods		36.58		
Small Business Loans	13.43	280.27	0.50	295.47
Total	**229**	**12,708**	**978**	**332**

After bonds and LIHTC, the next commonly invested asset type of insurers' social impact investment is mortgages. Among the mortgages, insurers invested most in commercial mortgages identified as community development.

Table 4. Social Impact Mortgages

Mortgage Type	Commercial		Residential		Total	
	BACV ($M)	[Percent]	BACV ($M)	[Percent]	BACV ($M)	[Percent]
Social Impact		of SI		of SI		of SI
Affordable Housing	$2,368.4	17.0%	$679.5	65.3%	$3,047.9	**20.4%**
Comm. Develop.	$11,210.2	80.7%	$352.7	33.9%	$11,562.9	**77.4%**
Social Services	$314.1	2.3%	$8.7	0.8%	$322.8	**2.2%**
	BACV ($M)	[Percent]	BACV ($M)	[Percent]	BACV ($M)	[Percent]
		of Total		of Total		of Total
Social Impact	**$13,892.7**	**2.2%***	**$1,040.9**	**1.7%***	**$14,933.6**	**2.2%***
Not Social Impact*	**$612,902.6**	**97.8%**	**$60,599.3**	**98.3%**	**$673,501.8**	**97.8%**
Total	**$626,795.3**	**100.0%**	**$61,640.2**	**100.0%**	**$688,435.4**	**100.0%**

*Some Mortgages labeled "Not Social Impact" could be social impact investments, but we could not definitively say in some cases. Therefore, the percentages (2.2% for commercial and total and 1.7% for residential) should be considered lower bounds, although we suspect we have captured most social impact-related mortgages.

3. Tax Credits

a) Industry Investments

At year-end 2023, insurers held about $8.9 billion in LIHTC equity, up 17.4 percent in five years (**Figure 20**). Although aggregate LIHTC equity investments have remained

relatively steady since 2021, they have fallen modestly as a share of total cash and invested assets from 0.26 percent to 0.23 percent.

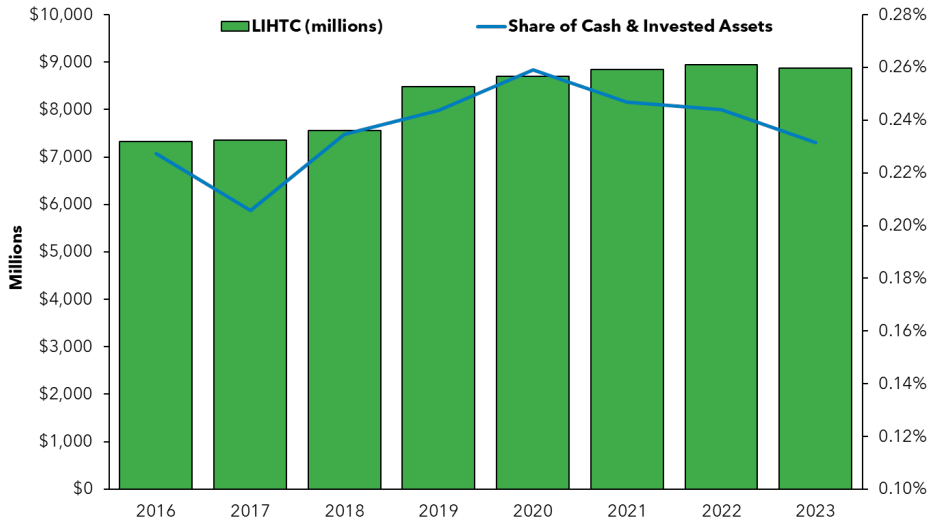
While only a conjecture, the reduced emphasis on tax credit equity investments could be due, at least in part, to higher interest rates beginning in 2021, which means alternative (to tax credit) assets would have been comparatively more attractive, at least on the margin.

b) Investments by Line of Business

Insurer investments in LIHTC equity increased strongly in the property and casualty (P&C) line of business (green line) but fell moderately in the life insurance line of business (orange line) (**Figure 21**). P&C insurers' LIHTC investments increased dramatically from about $1.9 billion to $4.1 billion from 2016 to 2022, whereas life insurers' LIHTC investments decreased moderately from $5.2 billion to $4.7 billion.

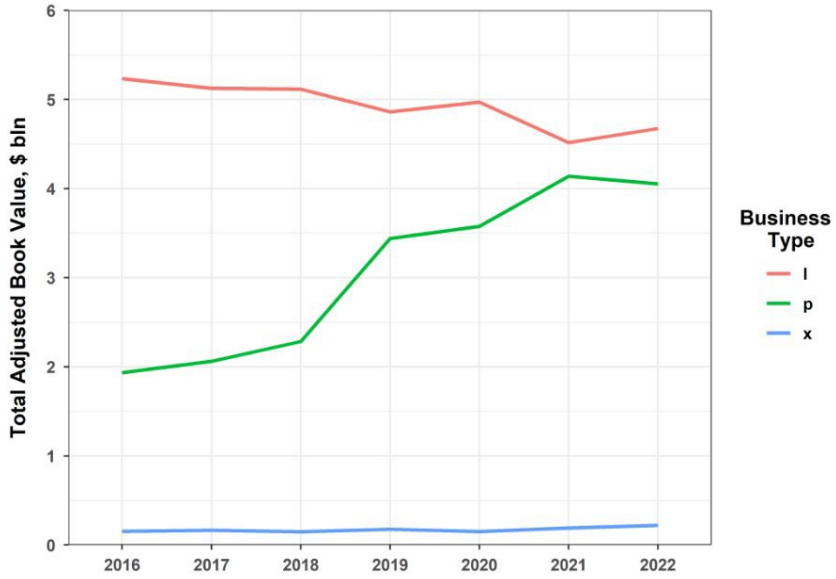
P&C insurers' investments in LIHTC equity increased throughout the sample period, but the number of insurers that invested in LIHTC equity decreased (**Figure 22**), indicating that LIHTC investment is increasingly concentrated in a smaller number of firms.

Figure 20. Aggregate LIHTC Equity Investments by Insurers



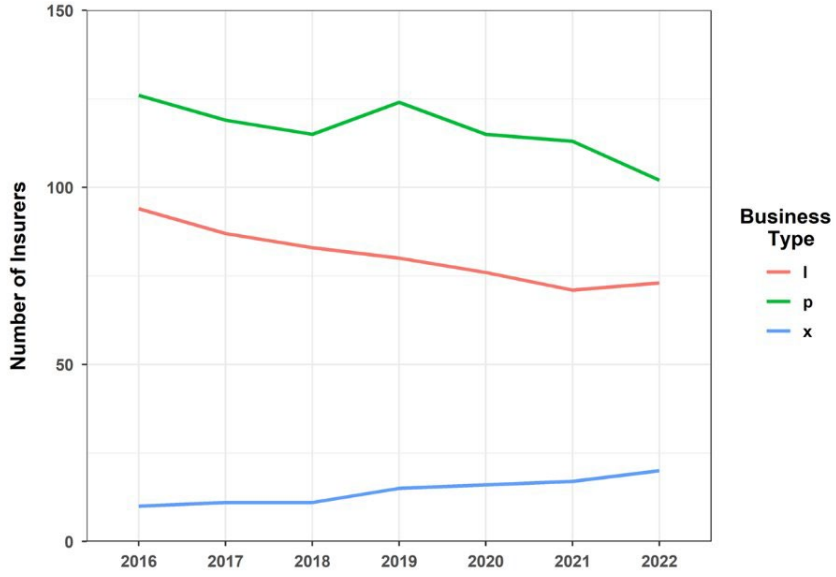
Source: CIPR
Data Source: NAIC, Annual Financial Statements, Schedule BA

Figure 21. Aggregate LIHTC Equity Holdings by LOB



Source: CIPR
Data Source: NAIC, Annual Financial Statements, Schedule BA
Note: "l" is Life, "p" is P&C, and "x" is Health.

Figure 22. Number of Insurers Holding LIHTC Equity by LOB



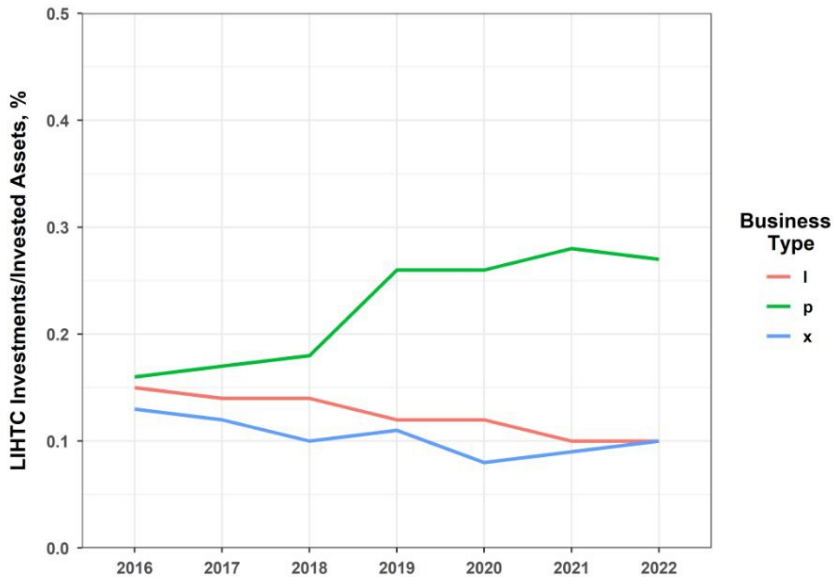
Source: CIPR
Data Source: NAIC, Annual Financial Statements, Schedule BA
Note: "l" is Life, "p" is P&C, and "x" is Health.

While the P&C insurers have invested increased amounts in LIHTC equity, it has leveled off as a share of total cash and invested assets since 2019 (**Figure 23**). Thus, much of the increase in LIHTC equity is commensurate with the increase in total cash and invested assets.

4. Community Development Financial Institutions / Community Development Investments

As shown in **Table 5**, which outlines the asset holdings of insurance companies in 2020, insurers support community development projects mainly by either creating a portfolio of projects (highlighted in light green) or by investing in Community Development Financial Institutions (highlighted in light blue), which are dedicated to managing portfolios of initiatives focused on benefiting communities.[84]

Figure 23. LIHTC Equity as a Share of Total Cash and Invested Assets



Source: CIPR
Data Source: NAIC, Annual Financial Statements, various schedules
Note: "l" is Life, "p" is P&C, and "x" is Health.

[84] CDFIs usually invest most heavily in LMI housing. Here we highlight non-housing community development activities.

Table 5. Social Impact Asset Holdings

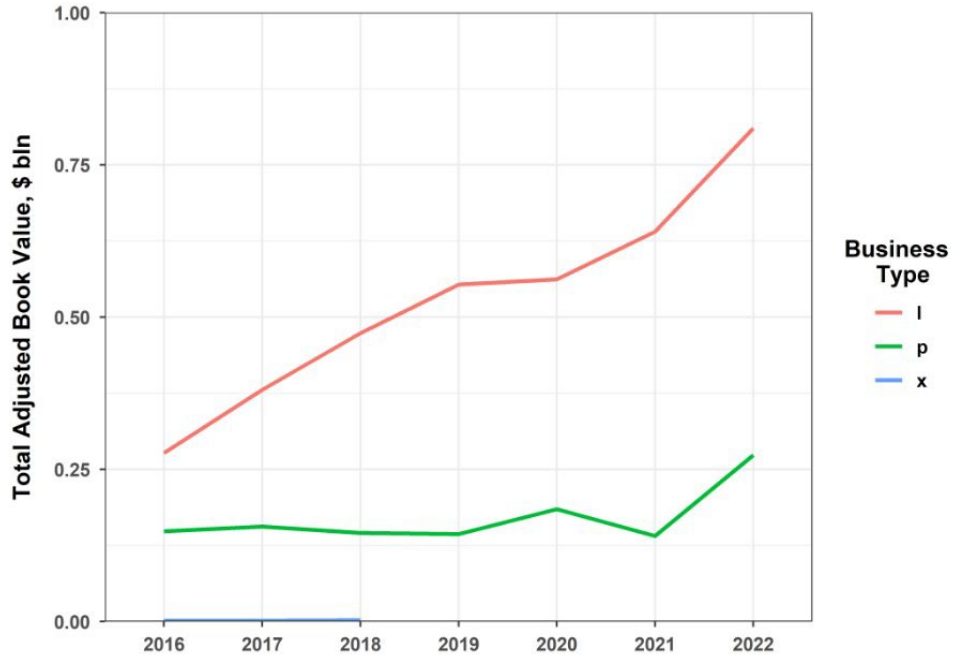
Type of Benefit	P&C	Life	Health
Affordable LMI Own. Housing	6,898.35	21,628.24	1,913.95
Affordable LMI Rental Housing	13,039.61	10,049.11	2,004.52
Care Services	1,508.34	4,816.36	312.46
CDFI Investments	51.16	52.91	6.71
Community Development	2,535.40	18,336.44	227.30
Educational Facilities	5,204.25	9,823.48	214.71
Financial Services	43.62	1,422.43	6.65
Green Financing	6,582.03	21,438.86	713.43
Healthy Foods		36.58	
LIHTC/LIHTC Equity	3,575.38	4,970.26	150.98
Small Business Loans	1,619.89	1,221.72	67.64
Social Infrastructure PE	184.65	562.12	
Transit-Oriented Development	1,393.73	4,976.99	119.94
Water Treatment	1,913.53	8,211.69	103.25
Total	**44,612**	**107,807**	**5,869**

Property and Casualty (P&C) insurers account for about $2.5 billion of these investments, while life insurers contribute around $18.3 billion. Thus, community development investments represent approximately 5.8 percent of total social impact investments made by P&C insurers and about 17.1 percent of those made by life insurers.

5. Private Equity Funds

Aggregate investment in social infrastructure private equity (PE) funds by the insurance industry increased from $427 million in 2016 to $1.2 billion in 2022 (**Figure 26**). Specifically, investments in social infrastructure PE funds of life insurers increased from $227 million to $881 million over the period, while these PE investments by P&C insurers increased from $149 million to $336 million. Health insurer investments in social infrastructure PE funds are negligible or zero.

Figure 26. Aggregate Holdings of Social Infrastructure PE Funds by LOB



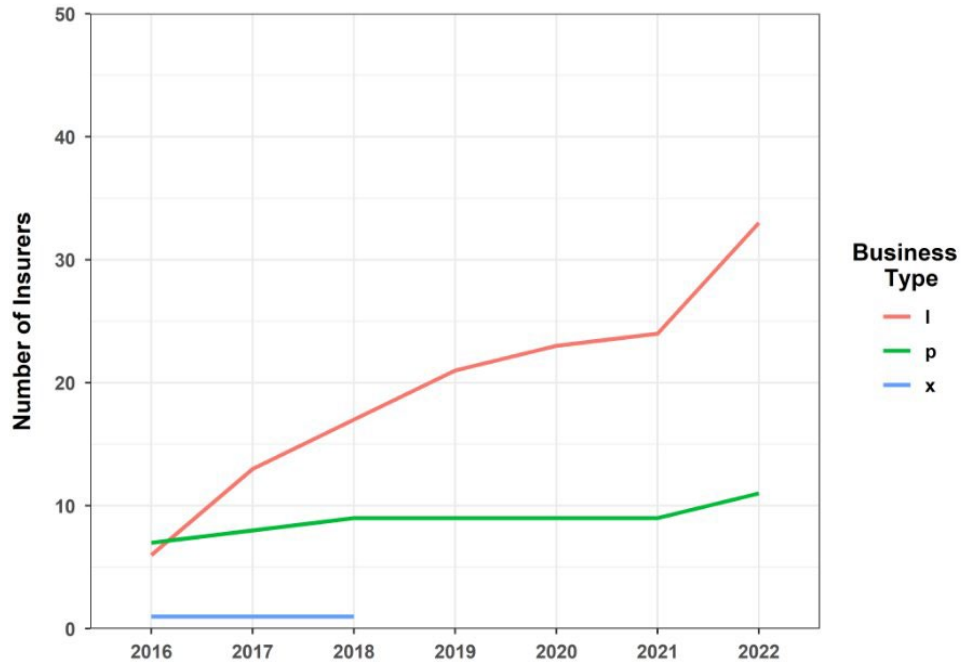
Source: CIPR | Data Source: Preqin
Note: "l" is Life, "p" is P&C, and "x" is Health.

The *number* of insurers that invest in social infrastructure PE funds is increasing, most notably in the life insurance sector (**Figure 27**). In the aggregate, the number of insurers invested in social infrastructure PE funds increased from 13 in 2016 to 68 in 2022.[85]

Although PE investments in social infrastructure increased significantly in recent years, the rate of increase was slower than growth in total cash and invested assets (**Figure 28**, page 51).

[85] The latest available data we have from Preqin is 2022.

Figure 27. Insurers Invested in Social Infrastructure PE Funds by LOB



Source: CIPR | Data Source: Preqin
Note: "l" is Life, "p" is P&C, and "x" is Health.

IV. Financial Performance of Social Impact Investments[86]

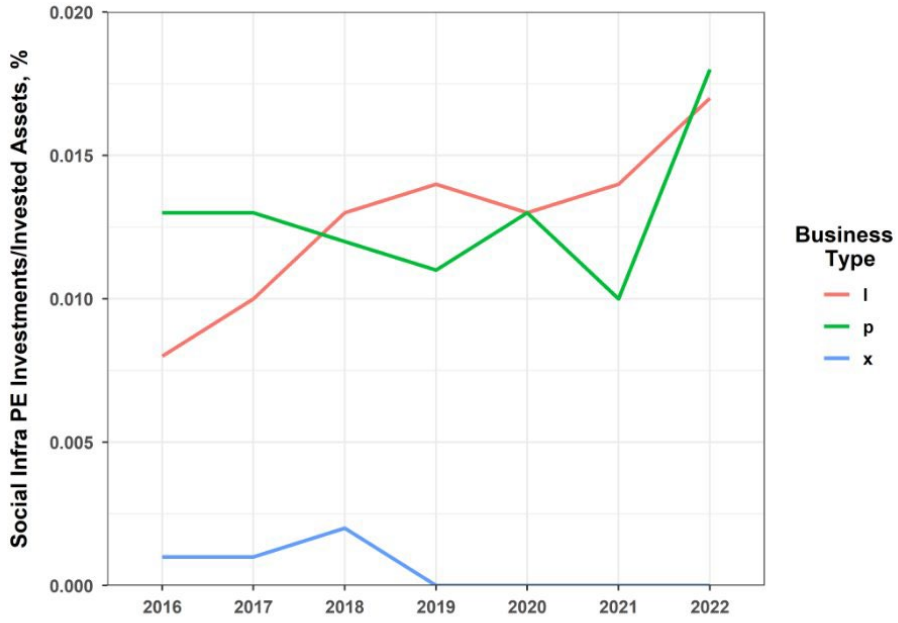
A. Municipal Bonds

Municipal bonds, which are issued by state and local or state governments in the United States, offer yields that, while they may initially appear modest, are enhanced by the bonds' exemption from federal income tax, making them particularly attractive on an after-tax basis.[87] The safety and predictability of returns from municipal bonds are underpinned by their backing by government entities, ensuring reliability and reducing investment risk. Moreover, the intrinsic value of municipal bonds extends beyond financial gains; they support vital public projects such as schools, hospitals, and transportation infrastructure, aligning investors' financial objectives with community development and societal well-being. This combination of fiscal benefits

[86]Slide Deck
[87] Some states allow residents to deduct municipal bond interest from their state income taxes if the bonds are issues by that state or local governments within the state.

and social impact makes municipal bonds an appealing asset class for those looking to diversify their portfolio while supporting sustainable community growth.

Figure 28. Social Infrastructure PE Fund Asset Holdings as a Share of Total Cash and Invested Assets



Source: CIPR | Data Source: Preqin
Note: "l" is Life, "p" is P&C, and "x" is Health.

1. Market, Returns, and Risk

Investing in municipal bonds, which can be general obligation (GO) bonds and revenue bonds, offers investors distinct advantages for channeling their funds into public infrastructure projects, including social infrastructure, each with unique benefits and considerations.

Investors can engage in direct purchases of municipal bonds through the primary market at initial offering (issuance) or through the secondary market by purchasing an existing bond from a bondholder. Buying directly from issuers at par value (face value) during initial offerings aligns well with long-term investment strategies focused on stability and regulatory compliance by providing predictable returns, reducing market risk, and minimizing transaction costs. Alternatively, the secondary market offers flexibility to adjust portfolios in response to changing market conditions and interest rates, essential for maintaining balance and duration matching and meeting regulatory requirements.

For diversified investment exposure without extensive individual bond analysis, insurer-investors can purchase municipal bond mutual funds or exchange-traded funds (ETFs) that invest in multiple municipal bond issues.[88] These funds are managed by professionals who continuously monitor market conditions and adjust holdings accordingly, crucial for managing risks associated with single issuance and ensuring compliance with conservative investment mandates.

The main characteristics of the municipal bond market include tax implications, liquidity concerns, and credit risk. Each of these factors influences the attractiveness, returns, and risks associated with municipal bond investments.

One of the most appealing features of municipal bonds is their favorable tax treatment. The interest income earned from most municipal bonds is exempt from federal income taxes, and often from state and local taxes if the investor resides in the state where the bond was issued.[89] This tax exemption can significantly enhance the effective yield of municipal bonds, especially for investors in higher tax brackets. Although interest earnings are typically tax-exempt, capital gains from the sale of these bonds are generally subject to tax. If t_f is the federal tax rate, t_s is the state tax rate, and the municipal bond yield is R, then the effective yield on the bond is $R_E = R/(1-t_f-t_s) > R$, where $t_s = 0$ if the bond is from a state other than the state of domicile/residence.[90]

Municipal bonds are less liquid than Treasury securities and corporate bonds. Lower liquidity is due to a large number of issuers but infrequent trading of many municipal issues, which can make it more difficult to buy or sell large amounts of these bonds quickly without affecting the price (**Table 6**). To compensate for reduced liquidity, municipal bonds often carry a liquidity premium, which means they offer higher yields than other, similarly rated bonds to attract buyers, all else equal. For investors, the relative illiquidity of municipal bonds requires careful consideration of the holding period and the likelihood of a need to sell the bonds before maturity.

[88] ETFs are securities that combine the flexibility of stocks with the benefits of diversification offered by mutual funds. The securities are sold on market exchanges, like stocks.

[89] Earnings on private activity bonds, which are municipal bonds, generally are taxable.

[90] Not all states exempt interest from municipal bonds issued by the resident state from taxation.

Table 6: Municipal Market by the Numbers, in 2023

	Municipal Bonds	Corporate Bonds
Market Size*	$4.0 trillion	$10.6 Trillion
No. of Securities	~ 1 million	~ 47,000
Daily Trading Volume	$13.0 billion	$1.4 trillion
New Issuance Volume	$389 billion	$2.0 trillion
Cum. 10-Yr. Default Rate	0.09%	2.23%

Source: Munis vs. Corporates: A Side-By-Side Comparison, Municipal Securities Rulemaking Board (MSRB), Muni Facts.

While municipal bonds are perceived as safe investments, they are not devoid of credit risk—the risk that the issuer will fail to meet its financial obligations. As noted in Section II of the report, general obligation (GO) bonds are backed by the full faith and credit of the issuer, whereas revenue bonds are supported only by the revenue from specific projects, such as toll roads or water treatment facilities. Still, default risk is much lower for municipal bonds relative to corporate bonds. The cumulative 10-year default rate is 0.09% for municipal bonds, compared with 2.23 percent for corporate bonds (**Table 6**).

Credit risk assessment is guided by bond ratings provided by agencies such as Moody's Investors Service, Standard & Poor's, and Fitch. These ratings reflect the creditworthiness of bond issues and can help investors make informed decisions. Moreover, the financial health of the issuer, the stability of the revenue-generating project for revenue bonds, and broader economic conditions all impact the credit risk associated with municipal bonds.

The municipal bond market offers significant benefits through tax advantages, which may lead to higher after-tax yields for tax-conscious investors.[91] However, the market's characteristics of lower liquidity and inherent credit risk require investors to conduct thorough due diligence and consider their investment horizon and risk tolerance carefully. By understanding these key features—tax implications, liquidity premiums, and credit risks—investors can better navigate the complexities of the municipal bonds market and align their investment strategies with their financial goals and risk preferences.

[91] Because of the tax advantages and market forces, the before-tax yield generally is lower for municipal bonds relative to corporate bonds with similar ratings and other characteristics, all else equal.

2. Data Used to Estimate Net Benefits (Return)

We collect secondary market trading data from the Municipal Securities Rule Making Board's (MSRB) Electronic Municipal Market Access (EMMA) database, which records all municipal bond trades, detailing prices, dollar volumes, trade times, and transaction types, which are categorized as "customer purchase," "customer sale," or "inter-dealer trade."[92] The database does not differentiate between retail and institutional customers. For transactions identified as involving a "customer," the EMMA database also provides the reported yield, which is the lower of the yield-to-call and yield-to-maturity.[93] Participants in these trades usually are municipal bond dealers, which include brokerages, municipal advisors, and investment banks.

a) Social Impact Municipal Bonds

To identify social impact investment bonds, we scoured social impact investing (SII) disclosures from COIN. The disclosures reference 6,023 CUSIPs associated with California COIN investments.[94] We then extract corresponding data from the MSRB/EMMA. Our data span January 1, 2008, to December 31, 2022, and comprise 3.2 million individual transactions. Using data filters like those described in Ang, Bhansali, and Xing (2014) and Ang, Bhansali, and Xing (2010), which are detailed in **Appendix C**, we refine our sample to 2.2 million trades representing 3,580 unique bonds.

b) Municipal Bonds for Comparison (non-SII)

Our comparison set of "non-SII" municipal bonds are California (state or local) municipal bonds that are not COIN. A limitation is that some municipal bonds in the non-SII comparison data could be SIIs but could not be identified as such. We expect

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[92] We accessed EMMA, in turn, from Wharton Research Data Services (WRDS).

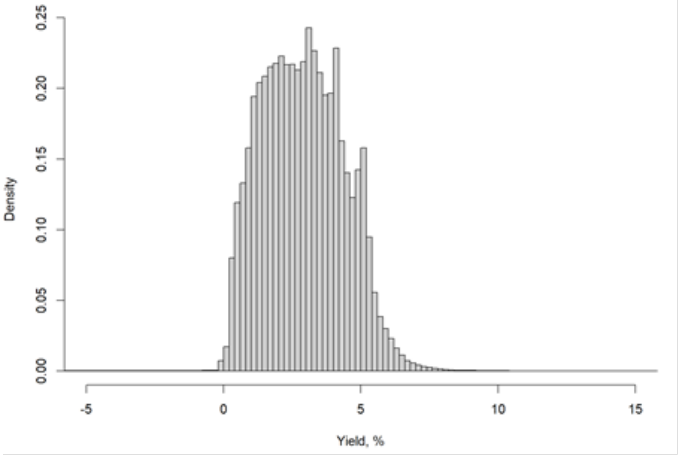
[93] Callable bonds (or "redeemable bonds) grant the issuer the right to redeem the bonds before maturity (see Tamplin, 2023). This redemption feature allows the issuer to manage their debt obligations based on changing interest rates and financial conditions. In particular, issuers opt for callable bonds to benefit from decreasing interest rates or to have the flexibility to refinance their debt at a lower cost. "Calling" a bond means to redeem it for cash. Callable bonds typically have higher coupon rates, compared with non-callable bonds, making them attractive for investors seeking higher yields. Callable bonds tend to offer higher coupon rates to compensate for the call risk, whereas non-callable bonds usually have lower coupon rates.

[94] A CUSIP number is a unique nine-digit identification number assigned to financial securities in the United States and Canada. "CUSIP" is an acronym for the Committee on Uniform Security Identification Procedures, which oversees the entire CUSIP system.

that this potential issue has a negligible effect on our results, if any, and no meaningful effect.

To compare returns of SII and non-SII municipal bonds, we take CUSIPs from NAIC financial reports and extract corresponding data from the MSRB/EMMA.[95] The sample includes 266,028 unique CUSIPs and 51.7 million transactions over the same period. After Ang, Bhansali, and Xing (2014) filtering, the sample is refined to 177,840 unique CUSIPs and 37.3 million transactions. The distribution of returns on municipal bonds in the sample is provided in **Figure 29**.

Figure 29. Distribution of Municipal Bond Yields in the Sample



Source: CIPR
Primary Data Source: MSRB/EMMA

Because our analysis focuses on the insurance industry, which tends to hold municipal bonds with longer maturities,[96] we exclude transactions involving municipal bonds with reported yields that might be associated with callable bonds (additional details on callable bonds can be found in **Appendix B**). We do not have information on the callability of the bonds, so we filter out transactions with reported negative yields and transitions with reported yields above 15 percent.

This step decreases the filtered sample of SII municipal bonds to 3,392 unique CUSIPs and 2 million transactions, and non-SII municipal bonds to 170,632 CUSIPs and 33.1 million transactions.

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[95] Herein, we refer to COIN municipal bonds as "SII bonds" and non-COIN California municipal bonds as "non-SII bonds" to simplify the exposition. The reader should keep in mind that the non-COIN municipal bonds may include some social impact municipal bonds.

[96] Michele Wong and Jean-Baptiste Carelus, 2022, "U.S. Insurance Industry's Cash and Invested Assets Surpass $8 Trillion at Year-End 2021," Capital Markets Special Report. Capital Markets Bureau. NAIC.

The MSRB/EMMA data highlights limitations in our identification of SII bonds. We rely on California non-SII CUSIPs from 2016 to 2020 reports to identify social impact investments. The MSRB/EMMA data indicate that many municipal bonds from our COIN sample mature(d) after 2020. As a result, declining SII investments by insurance companies, as seen in Section III.B.2 of the report, were driven in no small part by municipal bonds identified as SII during 2016-2020 but maturing after 2020.

3. Calculating Net Benefits (Return and Risk)

When analyzing municipal bonds, price-based returns offer a more flexible measure than the Internal Rate of Return (IRR) and can address a broad spectrum of analytical questions. Consequently, we use transaction prices to estimate price-based yields for municipal bonds. **Appendix C** provides a numerical example of the calculations outlined below.

The price P_T of a municipal bond with maturity T is calculated using the standard definition

$$P_T = \sum_{t=1}^{T} \frac{C/2}{\left(1+\frac{R_T}{2}\right)^t} + \frac{1{,}000}{\left(1+\frac{R_T}{2}\right)^t} \tag{2}$$

where C represents the semi-annual coupon payment for T remaining payment periods, the bond's face value is $1,000, and R_T indicates the yield, or average annual return, of the bond with maturity T and price P_T. These yields (R_T) embody the inherent risk characteristics of municipal bonds, including systematic default risk, liquidity risk, and the fluctuating value of tax benefits associated with holding them (Feenberg and Poterba, 1991; Sialm, 2009; and Longstaff, 2011). We use the reported yields (R_T) calculated by brokers and submitted to the MSRB for every transaction. The (R_T) is the lower of yield-to-call and yield-to-maturity (T can be a date of a call or a date of maturity).

An important measure of the risk of holding an asset is the standard deviation, which gets at the uncertainty of earning a specific yield or minimum yield because it measures volatility or dispersion around the mean yield. The standard deviation for a sample is the square root of the variance and is given by

$$s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}\left(x_i - \overline{x}\right)^2}, \tag{3}$$

where x_i is the value for observation i, $\overline{x}$ is the mean of the sample, and N is the number of observations (in this case, municipal bonds) in the sample.

4. Comparative Risk and Return of SII and non-SII Municipal Bonds

A summary of our samples of SII, California non-SII, and non-California, non-SII tax-exempt municipal bonds, segmented by maturity, reveals several salient patterns in trading activities and yields (**Table 7**).

Table 7. Summary Statistics for SII and non-SII Municipal Bond Samples

Maturity	Transact. (million)	Transact. (%)	CUSIPs	CUSIPs (%)	Mean (%)	Median (%)	SD (%)	Min (%)	Max (%)	25th perc.	75th perc.
Tax-Exempt California COIN Municipal Bonds											
1 to 5	0.06	3.03	249	7.34	1.21	1.10	0.76	0	14.95	0.65	1.63
6 to 10	0.37	18.77	622	18.34	1.73	1.67	0.87	0	14.58	1.12	2.24
11 to 20	0.74	37.66	1,768	52.12	2.40	2.31	1.26	0	14.71	1.41	3.18
21 to 30	0.67	33.99	660	19.46	3.20	3.18	1.46	0	14.38	2.07	4.41
> 30	0.13	6.56	93	2.74	3.32	3.38	1.56	0	14.77	2.18	4.71
Total	**1.97**	**100**	**3,392**	**100**	**2.57**	**2.38**	**1.42**	**0**	**14.95**	**1.45**	**3.5**
Tax-Exempt California non-COIN Municipal Bonds											
1 to 5	0.05	2.96	466	5.7	1.29	1.17	0.84	0	14.72	0.73	1.67
6 to 10	0.27	15.67	1,284	15.7	1.81	1.65	1.10	0	14.44	1.05	2.36
11 to 20	0.69	40.88	4,730	57.85	2.56	2.43	1.43	0	14.95	1.42	3.50
21 to 30	0.61	36.24	1,565	19.14	3.44	3.53	1.59	0	14.92	2.15	4.84
> 30	0.07	4.25	132	1.61	3.62	3.70	1.70	0	13.38	2.27	5.10
Total	**1.70**	**100**	**8,176**	**100**	**2.77**	**2.57**	**1.58**	**0**	**14.95**	**1.48**	**4.00**
Tax-Exempt non-COIN Municipal Bonds											
1 to 5	1.27	3.83	17,156	10.05	1.50	1.34	1.03	0	15.00	0.84	1.91
6 to 10	6.61	19.97	44,559	26.11	1.92	1.80	1.08	0	15.00	1.17	2.47
11 to 20	13.46	40.66	87,347	51.19	2.66	2.58	1.38	0	15.00	1.60	3.52
21 to 30	10.02	30.28	19,398	11.37	3.55	3.64	1.47	0	14.99	2.48	4.73
> 30	1.74	5.27	2,204	1.29	3.97	4.14	1.57	0	14.84	2.95	5.09
Total	**33.10**	**100**	**170,632**	**100**	**2.81**	**2.64**	**1.52**	**0**	**15.00**	**1.60**	**3.88**

Source: CIPR

Primary Data Source: EMMA/MSRB

Note: The table presents descriptive statistics of the filtered reported MRSB yields. The yields are from the filtered samples. The filters truncate the sample of returns to the range [0, 0.15]. The truncation of the yields allows for the exclusion of potentially callable bonds with nearby call dates or rolling call dates.

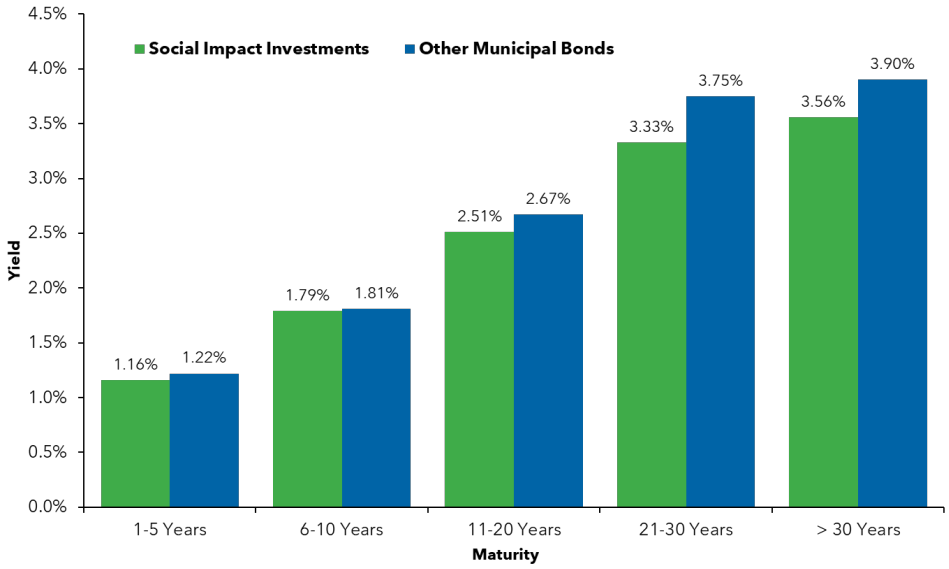
SII municipal bonds have more trades than non-SII California municipal bonds over substantially fewer securities. There are roughly 2 million transactions of California SII municipal bonds in the sample, covering 3,392 unique CUSIPs (securities), which is about 590 trades per CUSIP. On the other hand, there are 1.7 million transactions of non-SII California municipal bonds across 8,176 CUSIPs, which compute to about 208 trades per CUSIP. The higher trading volume per security for SII bonds indicates

potentially higher investor interest (at least in the secondary market) and significantly greater liquidity. Still, non-SII California municipal bonds have a broader range of securities, implying a more diversified investment pool.

The distribution of transactions by maturity is quite similar between California COIN and non-COIN municipal bonds. For both categories, most transactions are concentrated in the 11 to 20-year maturity range, accounting for 37.7 percent of transactions for COIN SII bonds and 40.9 percent for non-COIN California bonds. Additionally, more than 90 percent of California non-COIN and COIN municipal bond transactions occur in the 6 to 10-year, 11 to 20-year, and 21 to 30-year maturity ranges.

When analyzing yield distributions across maturity ranges, it becomes clear that *SII municipal bonds consistently offer moderately lower average yields than their non-SII counterparts*. This trend is especially pronounced with longer maturities (**Figure 30**). For example, in the 21 to 30-year maturity range, SII bonds have a median yield of 3.18 percent, whereas non-SII California bonds exhibit a median yield of 3.53 percent.

Figure 30. Relative Mean Return of California SII and non-SII Municipal Bonds



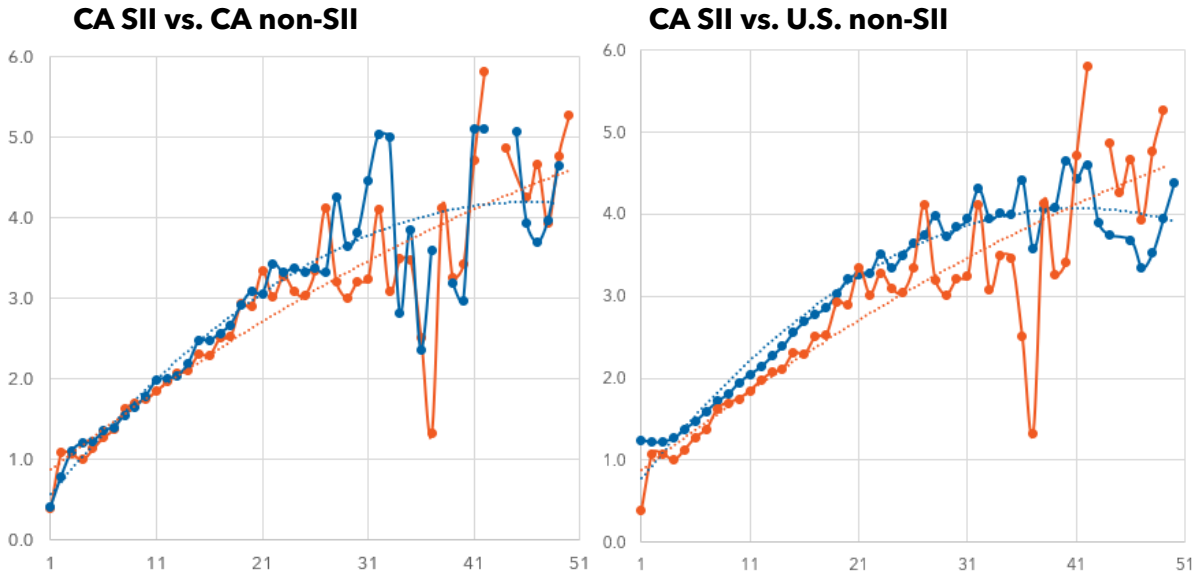
Generally, there is a trade-off between risk and return, and the trade-off is evident in the municipal bond data.[97] Although the yield of non-SII municipal bonds is higher, on average, than for SII municipal bonds, *SII municipal bonds have consistently lower risk*, as measured by the standard deviation of the yield. For example, in the 21 to 30-year maturity range, the standard deviation for SII municipal bonds is 1.46, compared

[97] The trade-off assumes that diversifiable risk has been addressed.

to 1.59 for non-SII municipal bonds. Indeed, SII municipal bond yields are more stable and less volatile across different maturities, making them a more predictable and attractive option for risk-averse investors. **Figure 31** further illustrates this phenomenon, showing that the dispersion of yields significantly increases from maturity year 21 onwards, highlighting the growing uncertainty associated with longer maturities. The figure also presents more detail on average returns.

The plot shows the average yields of municipal bonds traded between January 1, 2008, and December 31, 2022, categorized by their maturity in years. The horizontal axis represents bond maturity in years, ranging from 1 to 51 years. The vertical axis indicates the yield percentage. The plot on the left compares the term structures of COIN and non-COIN municipal bonds issued in California. Meanwhile, the plot on the right compares the yields of COIN municipal bonds issued in California to the yields of non-COIN municipal bonds issued across the United States.

Figure 31. Term Structure of Average Yields of Tax-Exempt California SII (Orange) and non-SII (Blue) Municipal Bonds



Source: CIPR
Primary Data Source: MSRB/EMMA
Note: Larger swings of yield from year to year indicate increased volatility and risk.

In summary, the analysis highlights key differences in transaction volumes, yield characteristics, and the diversity of CUSIPs between California SII and non-SII municipal bonds. The lower yields and variability of SII bonds indicate a market preference for stability (and possibly social impact), while non-SII bonds offer moderately higher returns, possibly due to their broader risk exposure and investor

base. The analysis sets the stage for a deeper exploration of the factors driving these yield differences, particularly in terms of credit risk and liquidity components, which will be explored in the subsequent yield decomposition analysis.

5. Decomposition of Return (Yields)

To assess the components of yields, we follow the methodology of Ang, Bhansali, and Xing (2014) and decompose the (total) yield R_T into three components:

$$R_T = R_T^T + \left(R_T - R_T^F\right) + \left(R_T^F - R_T^T\right) \tag{4}$$

where R_T^T is the (credit) risk-free yield on Treasuries of similar maturity and R_T^F is the yield of pre-refunded municipal bonds.[98] We name $R_T - R_T^F$ the credit risk premium and $R_T^F - R_T^T$ the liquidity and tax premium.

The credit risk component, $R_T - R_T^F$ is the portion of the total yield associated with the credit quality of the municipal bond. The value $R_T^F - R_T^T$ is the yield (return) associated with other factors unique to municipal bonds, such as benefits of tax-exempt status and costs of illiquidity. As we look at municipal bonds from one state, California, we expect the tax-exempt benefits of these bonds to be similar, and $R_T^F - R_T^T$ to be driven by the difference in liquidity of the bonds.

To assess the credit risk premium, $R_T - R_T^F$, and liquidity and tax premium, $R_T^F - R_T^T$, we use the yield of pre-refunded municipal bonds, R_T^F. Pre-refunded municipal bonds are securities issued by municipalities that have been subsequently refinanced to secure their debt obligations at lower interest rates, ensuring the safety and reliability of principal and interest payments. The original issuer allocates funds from the new issuance into an escrow account, typically holding U.S. Treasury securities, to cover the remaining payments of the original bonds. This escrow arrangement effectively removes the default risk associated with the original issuer, transforming the bonds into highly secure investments, essentially making them risk-free municipal bonds. Unlike highly liquid U.S. Treasuries, pre-refunded bonds carry a liquidity premium inherent to municipal bonds. Therefore, to infer the market-priced credit risk of municipal bonds, we compare them with pre-refunded municipal bonds rather than with Treasuries.

[98] A prefunded bond is a bond that the issuer decided to redeem from the bondholder before its maturity date.

We filter pre-refunded municipal bonds from the MSRB/EMMA database using the security description field.

Table 8 and **Figure 32** provide a detailed breakdown of the yield components for California SII, California non-SII, and general non-SII municipal bonds across different maturities. It reveals how investors perceive and price the various risks and benefits associated with these bonds.

Table 8. Summary Statistics for Premiums of California SII and non-SII Municipal Bonds (January 2008 to December 2022)

Maturity (years)	Yield $[r_T]$ (%)	Treasury Yield $[r_T^T]$ (%)	Credit Risk Premium $[r_T - r_T^F]$ (%)	Liquidity and Tax Premium $[r_T^F - r_T^T]$ (%)
California SII Municipal Bonds				
1 to 5	1.10	1.38	0.22	-0.70
6 to 10	1.67	2.30	0.38	-0.96
11 to 20	2.31	2.98	0.92	-1.26
21 to 30	3.18	3.13	1.33	-1.41
> 30	3.38	3.16	1.05	-1.16
Total	**2.38**	**2.98**	**0.86**	**-1.18**
California non-SII Municipal Bonds				
1 to 5	1.17	1.38	0.23	-0.69
6 to 10	1.65	2.30	0.40	-0.98
11 to 20	2.43	2.98	0.91	-1.27
21 to 30	3.53	3.13	1.42	-1.36
> 30	3.70	3.16	1.34	-1.00
Total	**2.57**	**2.98**	**0.89**	**-1.17**
Non-SII Municipal Bonds				
1 to 5	1.34	1.38	0.24	-0.63
6 to 10	1.8	2.30	0.40	-0.89
11 to 20	2.58	2.98	0.94	-1.18
21 to 30	3.64	3.13	1.41	-1.21
> 30	4.14	3.16	1.33	-0.99
Total	**2.64**	**2.98**	**0.93**	**-1.06**

Source: CIPR Calculations
Primary Data Source: MSRB.

Notes: The table presents the term structure of filtered reported MSRB/EMMA yields and premiums. The value of r_T is the median California SII and non-SII yields from **Table 7**. The value of r_T^T is the market yield on U.S. Treasury securities at constant maturity, quoted on an investment basis, retrieved from the Federal Reserve Economic Data (FRED) database (Federal Reserve Bank of St. Louis). The credit risk premium, $r_T - r_T^F$ and liquidity and tax premium, $r_T^F - r_T^T$ are derived from MSRB/EMMA transactions, as in Ang, Bhansali, and Xing (2014). The variables are related as shown in **Equation 4**, which corresponds to the following equation for empirical results: $r_T = r_T^T + (r_T - r_T^F) + (r_T^F - r_T^T) + \varepsilon_T$, where the ε_T represent factors affecting total yield that are not in equation 5 or idiosyncratic differences.

Looking at the credit risk premium, $r_T - r_T^F$, California SII bonds carry a slightly lower average premium of 0.86 percent compared with 0.89 percent for California non-SII bonds and 0.93 percent for all non-SII bonds. This marginal difference indicates that investors perceive SII bonds as having marginally lower credit risk. The relatively lower credit risk premium could be reflected in the safer investment profiles or more robust underlying guarantees associated with these bonds, which attract investors seeking stability.

The liquidity and tax premium are given by $r_T^F - r_T^T$, which provides insights into the relative liquidity of these bonds. For SII bonds, the premium ranges from -0.70 percent to -1.41 percent across maturities, while for California non-SII bonds, the value ranges from -0.69 percent to -1.36 percent, and for all non-SII bonds, the value spans -0.63 percent to -1.21 percent. Considering the tax-exempt benefit premium is estimated by Ang, Bhansali, and Xing (2014) to be -1.84 percent for all bonds,[99] the implied illiquidity premium is approximately 0.43 percent to 1.14 percent for SII bonds, 0.48 percent to 1.15 percent for California non-SII bonds, and 0.63 percent to 1.21 percent for all non-SII bonds. Because investors accept lower compensation for liquidity risk when bonds are more liquid, these figures indicate that SII bonds are perceived as the most liquid, followed by California non-SII bonds, with all non-SII bonds being the least liquid.

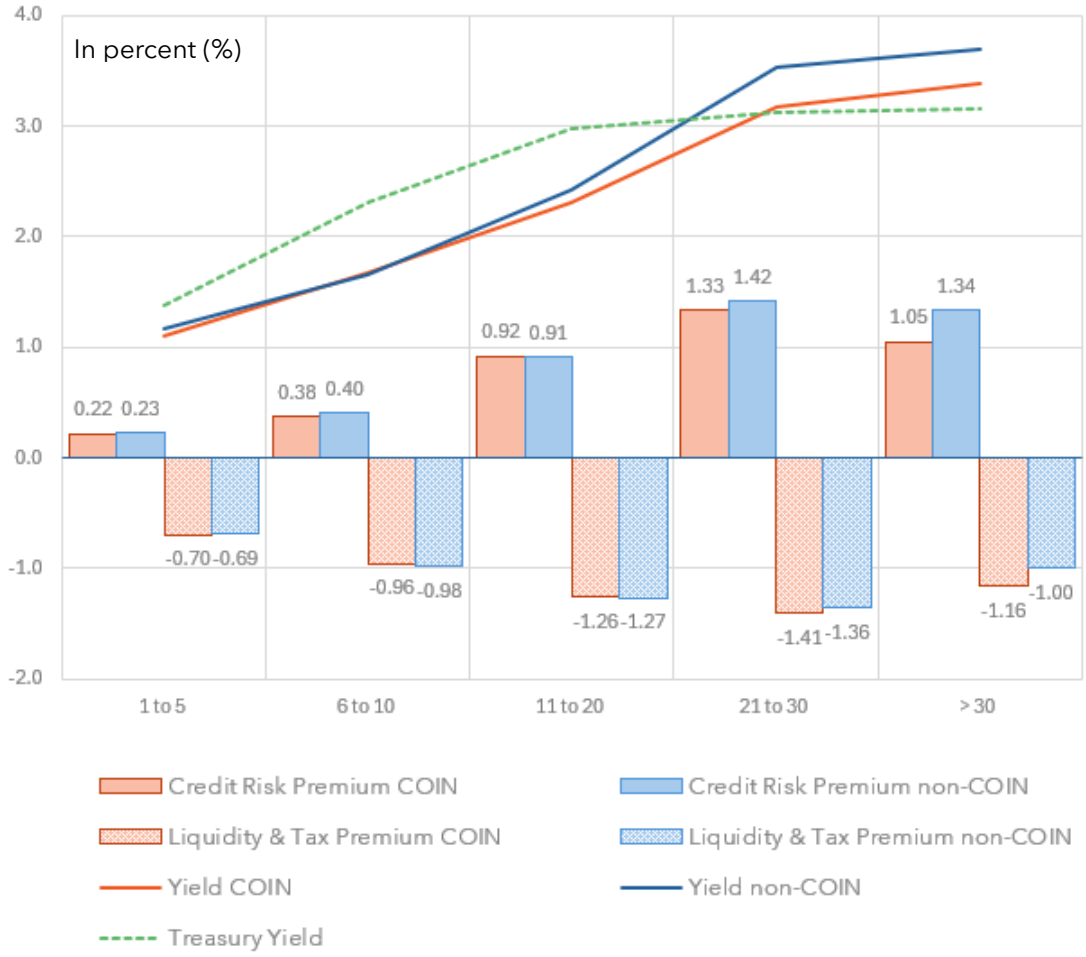
To sum up, SII municipal bonds are attractive to investors not only for their social impact but also for their lower credit risk and higher liquidity. However, these financial benefits are countered by relatively lower yields. Non-SII bonds require higher yields to compensate for their comparatively higher credit risk and lower liquidity.

In conclusion, our analysis of Social Impact Investing (SII) in municipal bonds within the insurance industry reveals several critical insights that underscore the strategic value of these investments. Firstly, the lower total yields observed for SII municipal

[99] Table 3, p. 30 in Ang, Bhansali, and Xing (2014).

bonds compared to non-SII municipal bonds suggest that investors perceive SII bonds as less risky and more stable. These perceptions are supported by the relatively modest credit risk premiums associated with SII bonds, particularly as maturity extends. Investors appear to require less additional compensation for default risk in these socially impactful projects, as well, indicating a higher level of trust in their viability and financial stability. Additionally, our analysis demonstrates that SII municipal bonds are more liquid than non-SII bonds, as evidenced by the lower illiquidity premiums required by investors. This enhanced liquidity makes SII bonds particularly attractive for insurance companies that value stability in their investment portfolios.

Figure 32. Term Structure of Credit and Liquidity and Tax Premiums of California SII and Non-SII Municipal Bonds (January 2008 to December 2022)



Source: CIPR Calculations
Primary Data Source: MSRB

Notes: The plot shows the yields and yield components of COIN and non-COIN municipal bonds across different maturity ranges. The horizontal axis represents the maturity in years, segmented into five categories: 1 to 5 years, 6 to 10 years, 11 to 20 years, 21 to 30 years, and over 30 years. The vertical axis measures the yield in percentage points. Each maturity segment includes stacked bars showing the breakdown of yields into their components: Treasury Yield (represented by a green dashed line), Credit Risk Premium (in solid orange for COIN and blue for non-COIN), and Liquidity & Tax Premium (shown with hatched bars). The lines overlaid on the bars—solid orange for COIN and solid blue for non-COIN—represent the total yield for COIN and non-COIN bonds, respectively.

Given these findings, social impact investing in municipal bonds emerges as a strategic investment opportunity for insurance companies. SII bonds offer competitive yields, although moderately lower, with potentially lower risk profiles, aligning well with the industry's objectives of long-term liability matching and socially responsible investment. The favorable tax-exempt benefits further enhance the appeal of SII municipal bonds as a means for social impact investing. Moreover, SII municipal bonds allow insurers to diversify their portfolios while supporting projects that deliver significant social impact. This analysis highlights the importance of integrating SII considerations into the broader investment strategy of insurance companies, as these investments not only provide reasonable economic returns but also contribute to social and community development goals.

B. Tax Credits

As with other investments, investors are attracted to LIHTCs by their risk-adjusted returns.[100] CohnReznick (2023, 30) notes that "in today's market" tax credit equity funds generate after-tax returns around 4%-7%." They point out that these returns "might not sound that attractive at first glance," but note that LIHTC funds offer features that can make these returns "favorable on a risk-adjusted basis." These features include overall safety, predictable returns, and long-term asset performance. A significant share of features works to ensure investors are made whole if properties do not meet the requirements of the LIHTC program.[101] Further, LIHTC equity investments may be attractive for long-term tax management.

[100]A very attractive feature of LIHTCs to depository institutions governed by the Community Reinvestment Act (CRA) is the "CRA credit" they receive when they invest in LIHTCs. The CRA was enacted in 1977 to ensure that depository institutions meet the credit needs of the communities in which they take deposits; specifically, low- and moderate-income communities. See Community Reinvestment Act (Board of Governors of the Federal Reserve System).

[101] Personal communication, CohnReznick.

1. How Returns Are Received

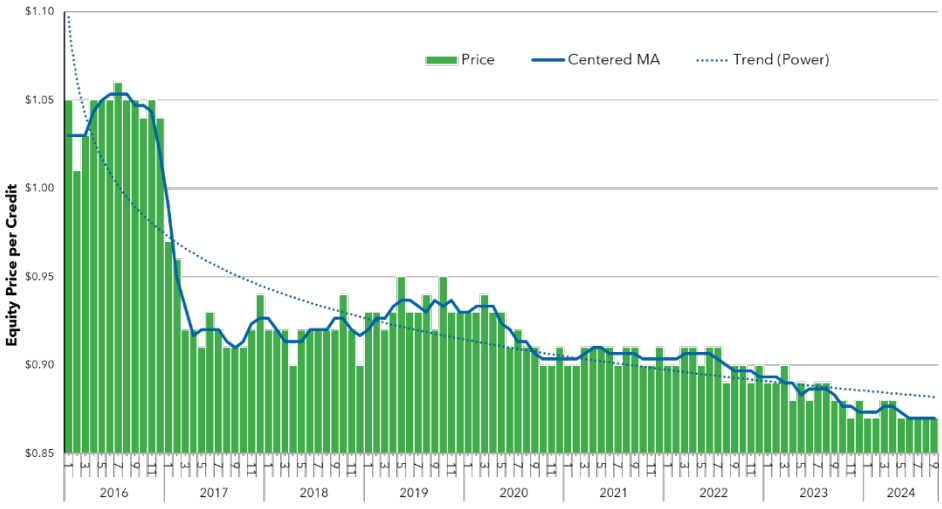
As noted in section II.C of this document, investors generally do not purchase housing tax credits. Rather, they are limited partners (LPs) in a LIHTC equity fund, and as such, owners of real estate. Their return on investment comes in the form of associated tax benefits; specifically, tax credits and deductible passive losses (such as depreciation) (Schedule K-1, Form 1065 [IRS Partnership Return]).

2. Price of the Tax Credits

The price of a credit is not always, and rarely is, equal to $1. Like other industries, return expectations on LIHTC investments reflect the mechanics of demand and supply. If demand for tax credits is high, tax credit prices will be higher, resulting in lower returns on investment. Tax credits trade in a competitive market and the prices of credits therefore vary and change over time. The return on tax credit investments depends, in significant part, on the price paid for the credits.

Since 2016, LIHTCs have ranged between $0.87 and $1.06 per credit, falling slowly but consistently over time (**Figure 33**). The price of a tax credit exceeded $1 per credit in all of 2016. The sudden drop in tax credit prices in January 2017 reflects the commencement of the Trump Administration, which promised cuts in corporate income tax rates. The further drop in December 2017 reflects the 2017 Tax Cuts and Jobs Act, which legislated this intention, significantly lowering the corporate income tax rate to 21 percent.

Figure 33. Tax Credit Prices



Data Source: Novogradac

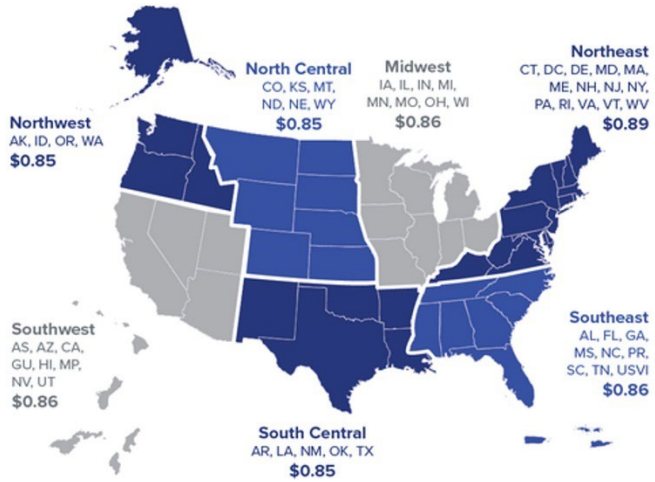
The LIHTC is a tax *credit*, as opposed to a tax *deduction*, which means it is applied to the tax liability. Therefore, the value of the tax credit does not change with the tax rate. However, tax *liabilities* are reduced with a lower tax rate, and some insurers or other investors may have lower tax liabilities on which to apply the credits as a result of the lower tax rate. Moreover, the deductibility of passive losses *is* a deduction, and the value of the deductions declines with the tax rate. Investors may also have found alternative assets to be more attractive following a decline in the corporate income tax rate.

Superficially, it is surprising that an investor would pay more than $1 for a dollar-for-dollar tax credit. There are a couple of reasons why purchasing tax credits at a price modestly above $1 may be sensible. First, the passive loss deductions (such as depreciation) can be significant and are additional tax benefits beyond the application of the tax credit itself. Second, commercial banks make up a disproportionate share of the market relative to other financial institutions because they get CRA credit by investing in LIHTCs.[102] A "need" for CRA credit could induce them to purchase tax credits at prices above $1, even if the purchase entailed a *loss*.

Importantly, the markets for tax credits are regional, and prices for tax credits can and do vary substantially from state to state and fund (syndicator) to fund (syndicator), as shown below by region (median) for the third quarter of 2024 **(Figure 34)** and entire ranges for the pre-2016 period (**Figure 35)**.

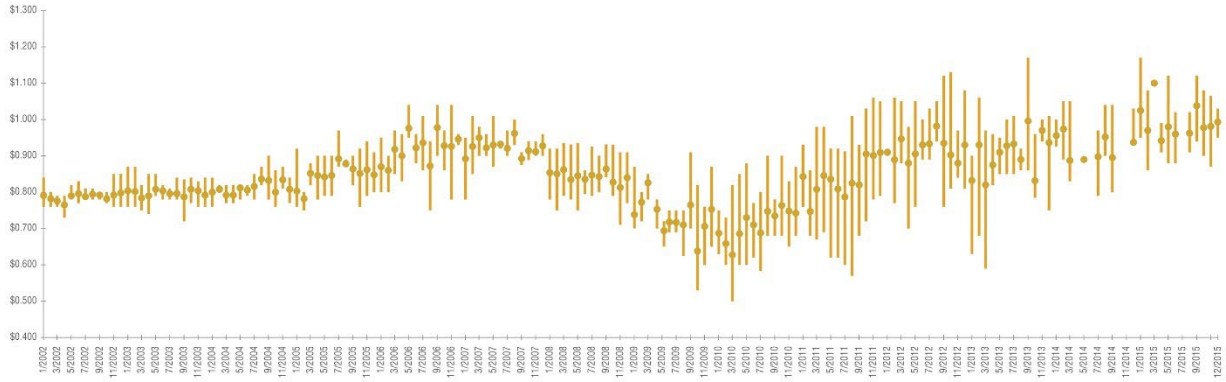
[102] "CRA" is the Community Reinvestment Act of 1977, which has been amended and changed several times. The CRA was passed to encourage commercial banks to lend in areas where they take deposits. The CRA intended to increase lending in low- and moderate-income areas, particularly for homes and small businesses. As regulated, the CRA has little teeth because commercial banks are not legally required to comply with the CRA. However, a lack of sufficient CRA credit can burden banks significantly in other ways, especially when they want to expand, particularly into other areas. See Federal Reserve Board of Governors, "Community Reinvestment Act (CRA)."

Figure 34. Median LIHTC Equity Prices by Region (2024, Q3)



Source: Novogradac

Figure 35. Range of LIHTC Equity Prices, 2002 – 2015



Source: Novogradac
Note: We were unable to locate range data for post-2015.

3. Calculating Net Benefits (Return)

Each LIHTC equity fund is unique in its timing and amounts of investments and the amount and timing of its benefits. Indeed, LIHTC consultant CohnReznick states that how investors set their return expectations is "more art than science" (2023, 31).

a) Calculating Internal Rate of Return (IRR)

To calculate the IRR for an equity fund investment, one first calculates net cash flow (CF_N) for each year t ($CF_{N,t}$), where t indicates time ($t = 0,1,2,\ldots,T$) and T is the project end date or time of disposition of the property. One then calculates net present value

(NPV) of these cash flows, subtracts off the unit price (p_0) of the tax credits, and sets the value equal to zero before discounting by return (r) = IRR and solving for IRR:[103]

$$\text{(5)} \qquad \begin{aligned} \text{NPV} &= \frac{CF_{N,1}}{(1+\text{IRR})} + \frac{CF_{N,2}}{(1+\text{IRR})^2} + \cdots \frac{CF_{N,T}}{(1+\text{IRR})^T} - p_0 = 0 \\ &= \left[\sum_{t=1}^{T} \frac{CF_{N,t}}{(1+\text{IRR})^t} \right] - p_0 = 0 \end{aligned} ,$$

The formula for calculating the IRR is very straightforward. What is difficult is projecting the cash flows, and particularly, the timing of those cash flows.

b) Calculating Cash Flows

The credit calculation begins with the first full month in which the building is placed in service or January 1 of the following year if the owner elects to defer the credit period (Woo, 2021). Any delays in the construction *and lease-up* of housing credit properties typically result in delayed delivery of housing credits (CohnReznick, 2018). Thus, the timing of the credits received depends in part on the average occupancy of the tax-credit-financed property.

Appendix C shows simulated cash flows (Benefit Schedule) for a LIHTC investment of approximately $34.3 million for a hypothetical fund (ABC Fund I) and syndicator (XYZ).[104]

The beginning point is Gross Capital Contributed ($K_{G,t}$), which is the total amount called for each year to be invested in the fund.[105] Net Capital invested in year t ($K_{N,t}$) is $K_{G,t}$ less reserves (R_t) and fees (F_t):

$$\text{(X)} \qquad K_{N,t} = K_{G,t} - R_t - F_t ,$$

where reserves are capital called for fund-held reserves.

For the hypothetical fund in **Appendix A**, ABC Fund I, $K_{G,t} = K_{G,1} = \$1,304,232$ of gross capital invested in the multi-investor LIHTC equity fund (MIF) in the first period (2017).

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[103] There is no mathematical solution for calculating the IRR. But most software programs like Excel can calculate the IRR from cashflows quite quickly. The process involves an iterative method to find the optimum IRR value, starting with a guess and then adjusting the IRR value cyclically until the solution meets an accuracy threshold (such as a 0.00001% difference from the previous solution).

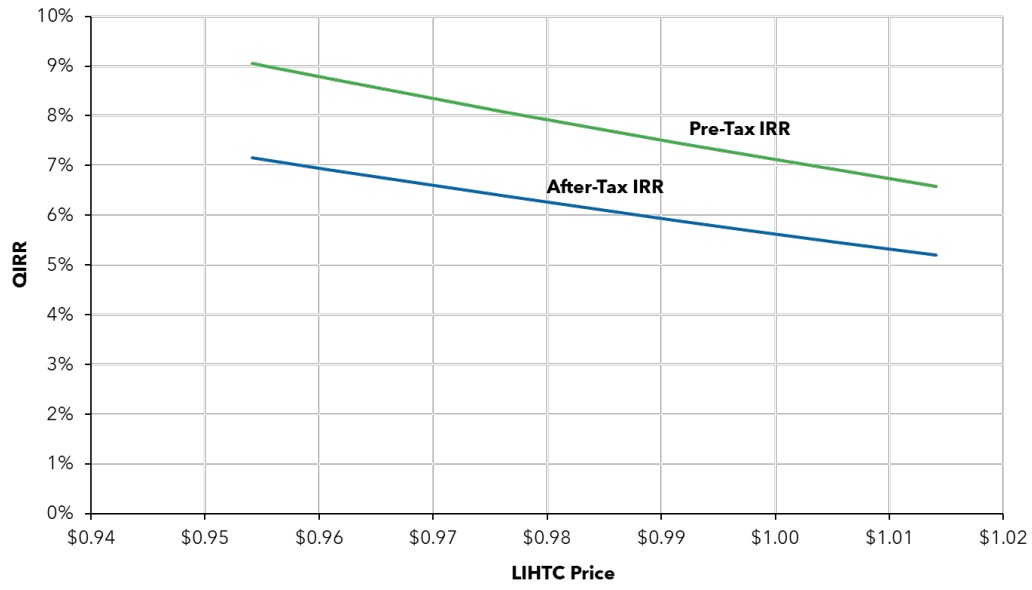
[104] The hypothetical benefits schedule was downloaded as AHIC MIF Benefits Schedule, Affordable Housing Investors Council (AHIC).

[105] The information in this section is drawn largely from explanations in the AHIC MIF Benefits Schedule.

Fees are $F_t = F_1 = \$1{,}000{,}000$ and reserves are $R_t = R_1 = \$0$, yielding net capital invested $K_{N,1} = \$304{,}232$. Net benefits are $CF_t = \tau_F(I_{T,t})$, which is total taxable income (loss) ($I_{T,t}$), multiplied by the corporate tax rate (τ_t), which is expressed as a negative. In the first period $(I_{T,1})$ = –$300,000, which, when multiplied by the federal corporate tax rate ($\tau = -0.21$), yields net benefits = $CF_1 = (-\$300{,}000)(-0.21) = \$63{,}000$.

In the following period, $K_{G,2} = \$2{,}794{,}702$, $F_2 = \$0$, $R_1 = 0$, $K_{N,2} = \$2{,}794{,}702$. Federal LIHTCs (used) are $615,634. In addition, the investor(s) use historic tax credits of $355,556, which sums to $971,190 in federal tax credits. Some states have their own LIHTCs, and in this simulated case, there are state LIHTCs of $925,128 in period 2. The net benefits are the amounts of the state LIHTCs, reduced by the increase in federal tax liability arising from the use of those credits, is $925,128(1 – 0.21) ≈ $730,851. The tax benefits from passive losses are CF_2 = (–$1,241,631)(–0.21) ≈ $260,742. Total tax benefits are therefore $971,190 + $730,851 + $260,743 = $1,962,783. **Figure 36** shows the return on the hypothetical Fund XYZ with different LIHTC equity prices.

Figure 36. Alternative Quarterly IRR at Varying LIHTC Equity Prices



Source: CIPR Calculations
Primary Data Source: Meridian Simulated Benefits Schedule

With changes in the volume of tax credits available, tax credit prices, corporate profits, passive losses, and other factors, the returns on tax credit equity may vary substantially from period to period. **Figure 37** (next page) shows the average annual return on multi-investor funds, weighted by fund size, from 2000 to 2023. Yields are consistently above 10-year (constant maturity) treasury bond yields (yellow line).

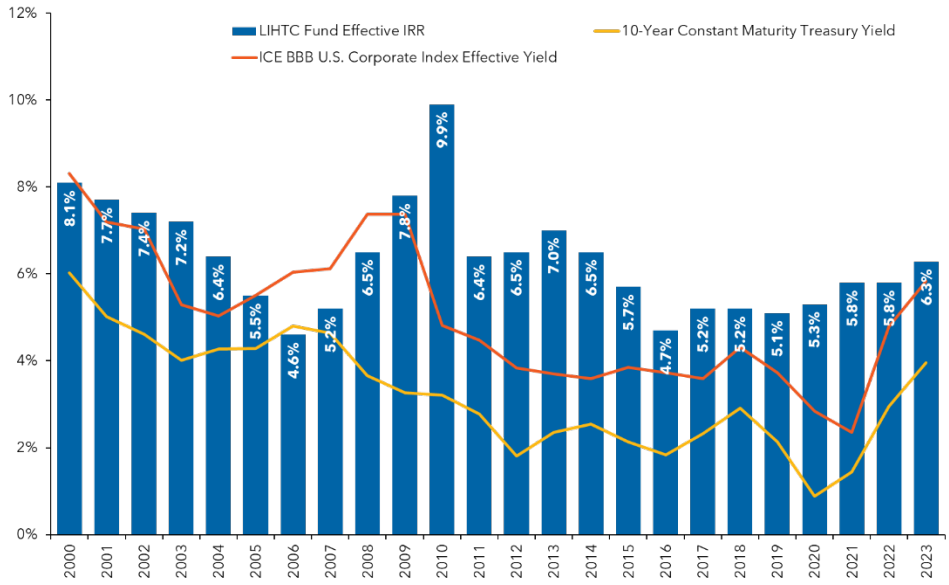
Moreover, yields usually exceed the average effective yield on BBB corporate bonds (orange line).

Figure 38 (next page) shows median quarterly multi-investor fund yields from the first quarter of 2021 through the first quarter of 2024. Median yields (blended IRR) are consistently well above the yield of the 10-year constant-maturity Treasury bond.

C. Community Development Financial Institutions

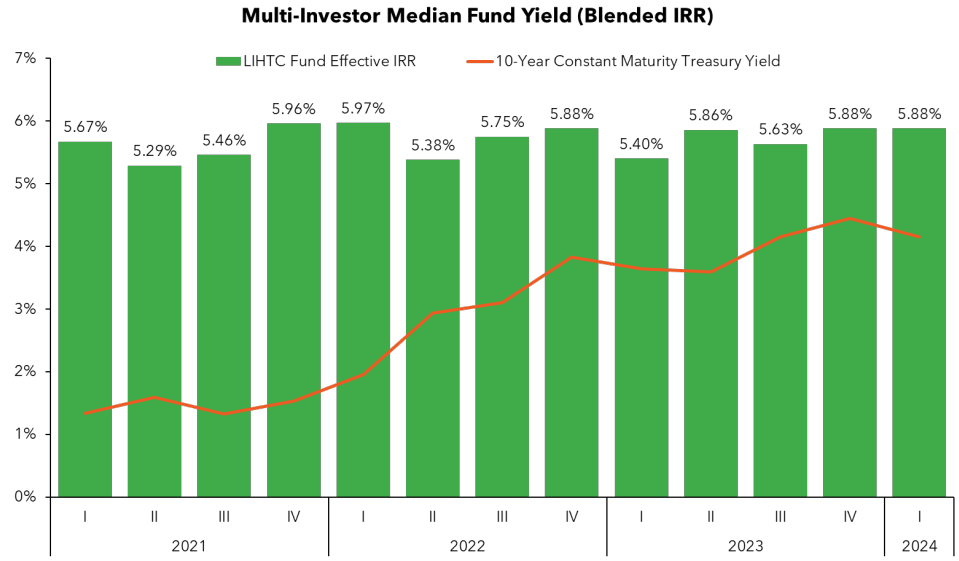
As noted in Section II.D of this report, community development financial institutions (CDFIs) channel capital, usually in the form of loans, into underserved areas to aid the development of essential services, such as affordable housing, healthcare, and economic development. CDFIs are generally characterized by safe and predictable returns and robust long-term asset performance. Investment stability comes from a consistent demand for their resources and impact on community resilience and development, which can effectively reduce investment risks.

Figure 37. Weighted Average Multi-Investor Fund Yield (LIHTC)



Source: CohnReznick

Figure 38. Multi-Investor Fund Median Yield (LIHTC)



Source: NOVOGRADAC

As shown in the table of asset holdings of insurance companies (**Table 5**), insurance companies invest in community development projects either by creating their own portfolio of projects or by investing in CDFIs, which manage portfolios of such projects. The financial performance of CDFI-managed portfolios is discussed below.

1. Financial and Non-Pecuniary Benefits

Investing in CDFIs can be a meaningful way to generate financial returns while supporting underserved communities. Each type of CDFI—banks and thrifts, credit unions, loan funds, and venture capital funds—offers unique opportunities and mechanisms for investment.

Investing in CDFI banks or thrifts typically involves purchasing equity or debt securities. These institutions are often structured like traditional commercial banks but focus on serving low- and moderate-income communities. Investors can buy shares if the bank is publicly traded or participate in private equity rounds for private institutions. Additionally, CDFIs may offer bonds or other fixed-income products that finance their lending activities.

Investing in credit unions is more restrictive due to their cooperative structure, where the members are the owners. Non-member investors can sometimes invest in secondary capital, a form of subordinated debt exclusive to credit unions, available primarily to low-income designated institutions. This investment supports the credit union's growth and service expansion but typically does not confer voting rights or ownership, as shares would.

Investment opportunities in loan funds are often available through notes or bonds issued by the loan funds. These debt instruments finance the loan fund's lending activities and are accessible to individual and institutional investors alike. Loan funds offer an array of terms and rates, providing options for investors seeking different risk-return profiles.

CDFI venture capital (VC) funds are designed to provide equity capital to businesses in disadvantaged areas that traditional VC firms might overlook. Investors can contribute capital to these funds directly and become limited partners. Returns on investment depend on the success of the businesses in the fund's portfolio, typically realizing gains through future exits, such as through public offerings or sales.

By choosing the type of CDFI that aligns with their financial and social goals, investors can participate in the growth of underserved markets while gaining competitive financial returns.

Because our data sample contains the financial statements of loan funds only, we analyze only investments in CDFI loan funds. The main characteristics of a CDFI loan fund are community engagement, flexibility in funding, diversified risk and return profiles, and strong regulatory and incentive support. These elements make CDFI loan funds particularly appealing to investors in the insurance industry because the features align with most insurers' strategic goals of risk management and long-term stability, in addition to social responsibility. Insurance companies can use investments in CDFIs for diversification and duration matching, both of which are essential risk management tools.

Investors benefit from the CDFI loan funds' integration within the communities they serve. This engagement may not only foster sustainable development projects that improve community resilience but also can reduce operational risks by building strong local support and trust. Such initiatives are particularly valued by investors who prioritize long-term social impact alongside financial returns.

CDFI loan funds are noted for their adaptability, offering terms that can be more accommodating than those of conventional loans, such as longer maturities and more favorable interest rates. This flexibility makes these funds suitable for investors with long-term horizons, matching their liquidity needs and investment strategies while fulfilling broader social impact goals. Investments typically focus on critical areas such as affordable housing, healthcare, and small business support, driving substantial community upliftment.

Investing in CDFI loan funds allows investors to diversify their portfolios across a variety of sectors and projects, effectively spreading and mitigating risks. While these

funds often operate in markets perceived as higher risk, the diversity of the investments and the strategic risk mitigation approaches employed—such as credit enhancements and loss reserves—help balance the risk-return equation, offering potentially stable returns.

Investors may find additional value in CDFI loan funds through various government incentives and programs designed to stimulate community investments. These benefits, including tax advantages, grants, or direct subsidies, enhance the financial attractiveness of these investments and support compliance with regulatory frameworks that encourage socially responsible investing.

2. Data on Net Benefits

We use financial data from the Aeris Insight Platform to evaluate the financial performance of CDFIs. Aeris is best known as a rating agency that specializes in rating CDFIs, although they also provide other financial and advisory services. Currently, Aeris covers more than 150 CDFIs that manage over $19 billion in loan capital in the aggregate.[106] Aeris also collects data from numerous CDFIs they do not rate.

The specific data we use are extracted from Aeris' "Performance Maps," which include data from synthetic balance sheets and income statements, numerous financial ratios, asset composition (largely loans), and measures of asset quality. The performance maps enable stakeholders, particularly current or potential investors, to evaluate a CDFI's operational efficiency and financial stability.

We obtained 188 Performance Map files, which account for all CDFIs with Performance Maps stored on the Aeris Insight platform. We omit seven files that contain consolidated financial statements. This approach aligns with the practice adopted by the CDFI Fund, which excludes reports from holding companies to prevent double counting in its analyses.[107] Out of the remaining 181 CFDIs, 174 had audited financial statements for 2022. Of these, 151 are certified CDFIs. Finally, 150 of these certified CDFIs are loan funds, while the other is a venture capital fund.

Aeris is a key provider of data and analytics for CDFIs, offering detailed insights to help investors and policymakers assess the financial health and social impact of these organizations. Through its Aeris Insight platform, Aeris delivers data and performance metrics through due diligence, which helps to inform investment decisions and sustainable community development efforts. The Aeris Performance Maps are a

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[106] Aeris website.

[107] See Footnote 3 on Page 11 of 2023 Annual Report.

critical tool in this suite, providing a picture of the financial health of CDFIs along dozens of dimensions.

Aeris provides financial performance data for 150/510 ≈ 29 percent of certified loan funds as of 2022. There are no commercial banks or credit unions in the Aeris sample. The sample from Aeris includes larger loan funds, with an average asset size of $118.4 million and a median size of $49.9 million (**Table 9**). In contrast, the average asset size for all certified loan funds is approximately $72.7 million. Thus, our sample covers a disproportionately large number of large CDFIs and is therefore not completely representative of the industry. The sample covers $17.8 billion / $38.3 billion ≈ 46 percent of assets of certified CDFI loan funds in the United States. Data are not available for the remaining, smaller CDFI loan funds.

Table 9. Asset Size of Reporting Certified CDFIs by Institution Type in Fiscal Year 2022

CDFI Institution Type	Number of Institutions by Type	Sum of Total Assets ($B)	Share of Total Assets (%)	Average of Total Assets ($M)	Median of Total Assets ($M)
All Certified CDFIs					
Bank/Thrift	151	83.8	27.9	555.2	322.9
Credit Union	322	176.1	58.7	547.0	154.3
Loan Fund	527	38.3	12.8	72.7	14.9
Venture Capital Fund	13	1.9	0.6	145.3	11.4
Total	1,013	300.2	100.0	296.3	55.3
Certified CDFIs in Aeris Sample					
Loan Fund	150	17.76	99	118.4	49.9
Venture Capital Fund	1	0.13	1	127.3	127.3
Total	151	17.5	100	118.5	50.2
Uncertified CDFIs in Aeris Sample					
Total	23	2.65	100	115.3	37.9

Note: The table presents descriptive statistics on total assets of CDFIs by institution type for fiscal year 2022 from two data sources. The first panel includes data from the 2023 Annual Report of the CDFI Fund. The second and third panels are based on the 2022 financial statements data of CDFIs from Aeris Insight.

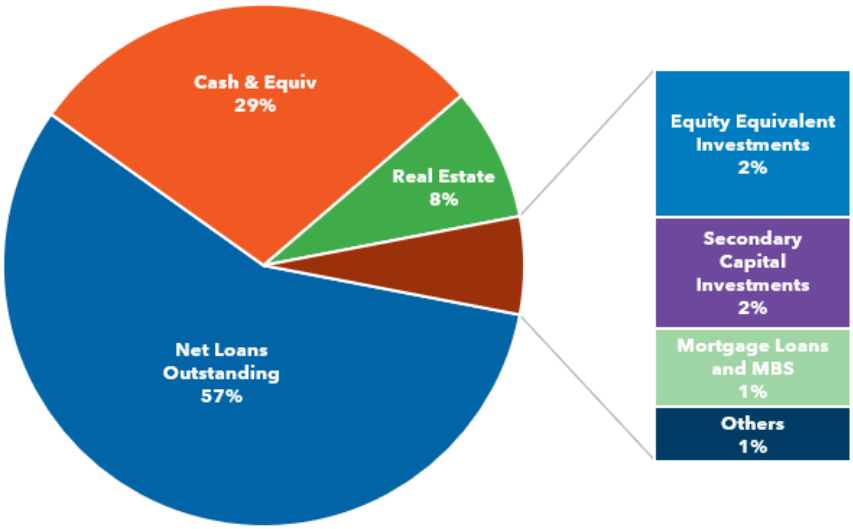
Net Loans Outstanding form the largest portion of total assets at $9,875 million or 56.8 percent of total assets (**Table 10**, **Figure 39**). The next largest category is Cash and Cash Equivalents at $5,019 million (28.9 percent), then Real Estate and Net Fixed Assets at $1,436 million (8.3 percent). Cumulatively, these three asset types comprise about 94 percent of all CDFI assets in the sample.

Table10. Aeris: Assets of Certified CDFI Loan Funds in 2022

Assets	Amount ($M)	Total Assets (%)	Cumulative % of Total Assets (%)
Net Loans Outstanding	9,874.70	56.81	56.81
Cash & Cash Equivalents	5,018.81	28.88	85.69
Real Estate and Net Fixed Assets	1,436.20	8.26	93.95
Equity Equivalent Investments	396.79	2.28	96.23
Secondary Capital Investments	296.10	1.70	97.93
Mortgage Loans and MBS	212.13	1.22	99.15
Others	145.74	0.84	100.00
Total	**17,380**	**100**	

The table presents the broad categories of assets on the balance sheets of certified CDFI loan funds, as reported by Aeris Insight. The data is from "Asset Composition" section of "Additional" Tab of Performance Maps of CDFI loan funds.

Figure 39. Assets of Certified CDFI Loan Funds in 2022 (as reported by Aeris)



Source: CIPR
Primary Data Source: Aeris Insight
Notes: The figure presents the broad categories of assets on the balance sheets of certified CDFI loan funds, as reported by Aeris Insight. The data is from "Asset Composition" section of "Additional" Tab of Performance Maps of CDFI loan funds.

3. Net Margin

Each CDFI load fund is a portfolio of loans with different maturity and credit quality. There is no loan-level data on the Aeris Insight platform. We estimate the return of the portfolio of loans for each CFDI loan fund.

We use one of Aeris's earnings measures, Net Margin, to estimate the return. Net margin measures how much surplus (similar to profit) a CDFI generates as a percentage of its revenue. The CDFI net margin formula is modified slightly from its more traditional formulation so that it does not include the receipt and disposition of grants. Net margin is calculated as the ratio of surplus from operations to total revenue for the CDFI:

$$\text{Net Margin} = \frac{\text{Surplus (Deficit) from Operations}}{\text{Unrestricted Revenue}} \times 100 . \tag{6}$$

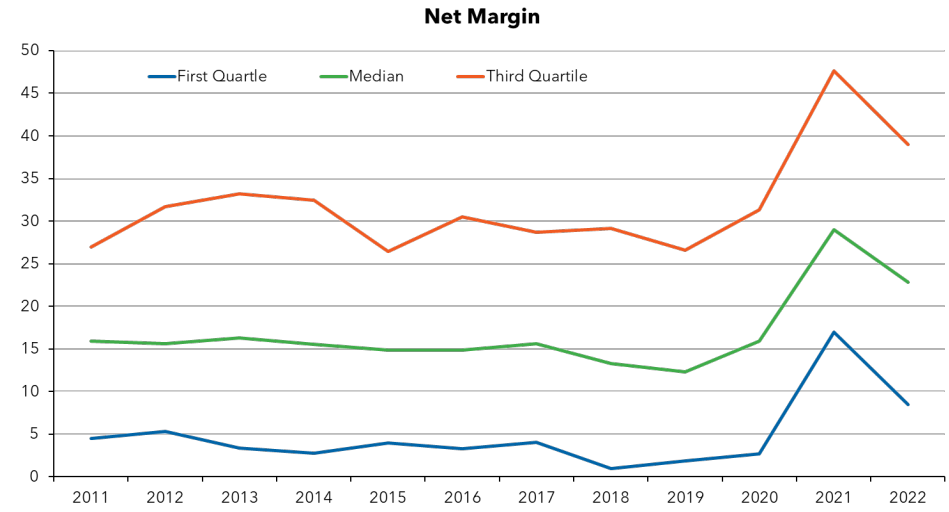
Unrestricted revenue may be used for any purpose for which the CDFI needs financial resources, while restricted revenue is reserved for specific purposes. Unrestricted Revenue is a sum of Grants and Contributions, In-Kind Donations, Net Assets Released from Restrictions, Loan Closing and Origination Fee Income, Contract Revenue and Fee Income,[108] and Surplus (or Deficit) from Operations minus Operating Expenses.[109]

Across the 12 years for which we have data, median net margin remained fairly stable, suggesting a baseline level of profitability for most funds (**Figure 40**). Net margins grew sharply in 2021 before falling in 2022, but 2022 net margin tended to exceed the baseline.

[108] Unrestricted Revenue is a sum of the following Aeris input data with Aeris input codes for 2022 audited statements: 201010 (Grants and Contributions), 201012 (In-Kind Donations), 201014 (Net Assets Released from Restrictions), 202010 (Interest Income – Loans), 202011 (Interest Income – Investments), 202042, (Loan Closing and Origination Fee Income), 203012 (Contract Revenue), and 203028 (Fee Income).

[109] Operating Expenses (net of unrealized and grants made) is a sum of the following Aeris input data with Aeris input codes for 2022 audited statements: 204010 (Personnel), 204011 (Professional Services), 204012 (In-Kind Services), 204013 (Depreciation and Amortization), 204014 (Other Operating Expenses), and 205010 (Interest Expense).

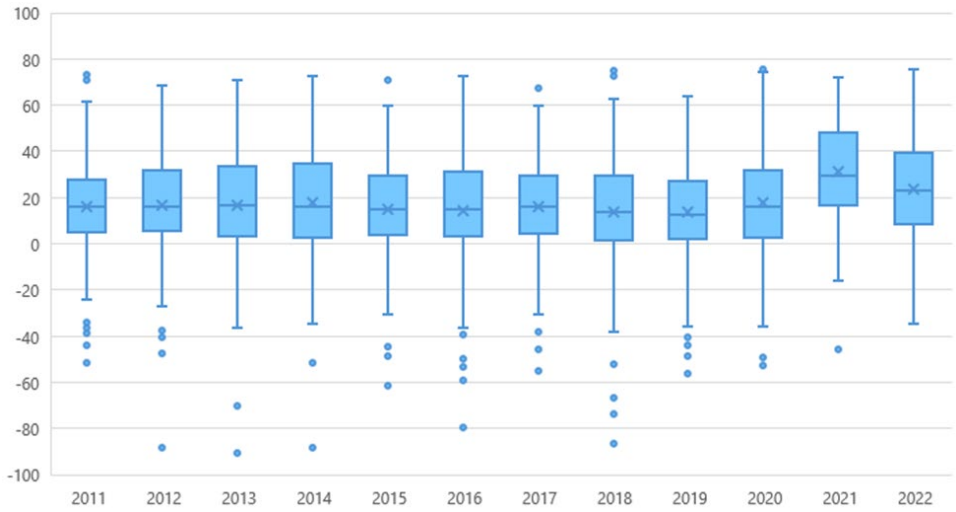
Figure 40. Net Margin for CDFIs



Source: CIPR
Primary Data Source: Aeris Insight

A boxplot provides a more granular view of net margin (**Figure 41**). The range of the data, as indicated by the interquartile ranges (IQR, between the bottom and top quartiles) and the whiskers (minimum to maximum values), reveals significant variability between CDFIs' net margins from year to year. This variability underscores uneven financial performance across funds. Further analysis (not shown in the chart) suggests that some funds are consistently profitable while others experience substantial fluctuations.

Figure 41. Distribution of Net Margin for Sample of CDFI Loan Funds



Source: CIPR
Primary Data Source: Aeris Insight

Notably, the box plot shows numerous positive and negative outliers (values well outside the IQR) each year, indicating that some CDFI loan funds manage to achieve exceptional returns while others face substantial financial difficulties.

Some years reveal exceptionally large negative outliers, reflecting significant challenges for specific funds during this period. But in more recent years (2021 and 2022) the data reveal a larger number of positive outliers, suggesting that CDFIs may have benefitted from favorable economic conditions and/or more effective risk management practices. The upward trend is visible in **Figure 41** as well.

Overall funds over all years, the mean net margin was 17.7 percent, the standard deviation was 24.4 percent, and the median was 17.3 percent. The comparatively high standard deviation underscores the wide dispersion of net margins across CDFIs and across years. According to the Corporate Finance Institute, a 20 percent margin is "high" (or "good"), a 10 percent margin is "average," and a 5 percent margin is "low." The median net margin for the CDFIs in our sample has hovered around 15 percent, excluding its steep increase after 2019.

4. Alternative Measures of Profitability

In addition to Net Margin, which serves as a key indicator of the profitability of CDFI loan funds, we present Return on Equity (ROE) and Return on Assets (ROA). ROE and ROA offer alternative measures that provide complementary insights into financial performance. Analyzing these measures alongside Net Margin allows for a more nuanced understanding of how effectively these funds utilize their resources to generate returns.

Typically, ROE measures profit relative to shareholders' equity. Because (almost all) CDFIs are non-profit enterprises, they do not have shareholders. On a balance sheet, assets = liabilities + owners' equity. We can therefore calculate a shareholders' equity equivalent as *net assets* = assets – liabilities. Our ROE measure is:

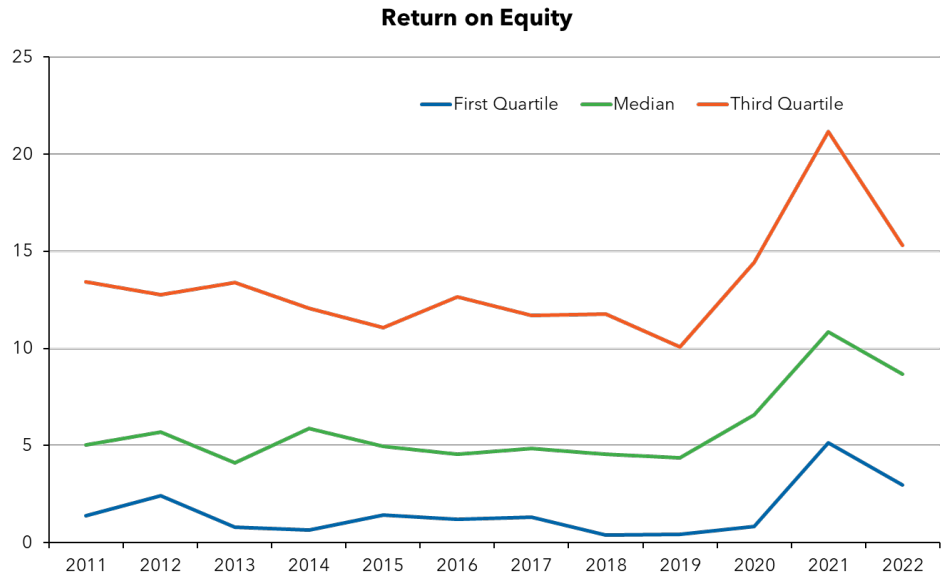
$$\text{ROE} = \frac{\text{Surplus (Deficit)}}{\text{Net Assets}} \tag{7}$$

ROA, measured as shown below, is always smaller than ROE because assets must exceed shareholder equity, or in the case of non-profits, net assets. If shareholder equity or net assets < 0, meaning that assets < liabilities, then the firm or non-profit is in a technical bankruptcy

$$\text{ROA} = \frac{\text{Surplus (Deficit)}}{\text{Assets}} \tag{8}$$

Below we present the ROE for our sample of CDFIs over the sample period (**Figure 42**).

Figure 42. CDFI Return on Equity (ROE)



Source: CIPR
Primary Data Source: Aeris Insight

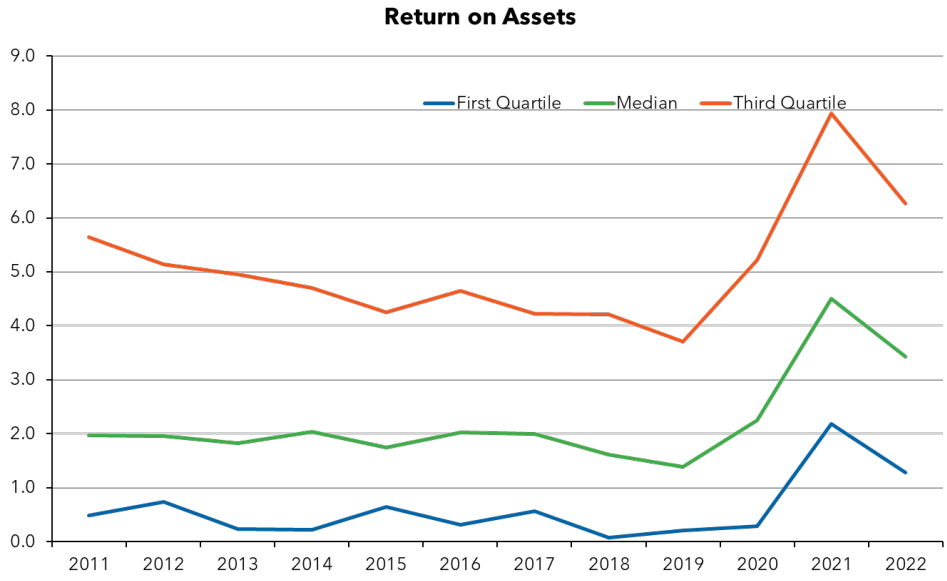
Similar to net margin, ROE was fairly stable through 2019 but picked up significantly in 2021. From 2011 to 2019, ROE averaged 8.2 percent across the CDFI sample across years and had a standard deviation of 12.2 percent. Assuming that ROE for this sample is normally distributed, the interpretation is that two-thirds of our sample CDFIs had ROEs during this period in the range 8.2 percent ± 12.2 percent, or -4.0 percent to 20.4 percent. The large range emphasizes the substantial variance in ROE across even this small sample of CDFIs.

Evaluating ROE is difficult other than noting that the higher it is, the better, *all else equal*. One could compare ROE across CDFIs, but even that analysis is problematic and could be quite misleading, depending, for example, on the structure of the CDFIs and their missions. Better is to evaluate the ROE over time, as we have done here, or possibly to evaluate the ROE relative to some benchmark. We note that the ROE for the S&P 500 was about 10.3 percent at the end of third quarter 2024, which provides some perspective (Macrotrends). But while benchmarks can be useful metrics for evaluating financial performance, in this case, non-profits have very different objectives than for-profit corporations, the latter for which the primary objective generally is to maximize shareholder value. Further, the S&P 500 is composed of very

large U.S. firms, so comparables should also be very large entities. Even restricting comparisons to non-profits is problematic. Non-profits are very diverse. For example, CDFIs are relatively capital-intensive, whereas many non-profits are intensive in operations. In general, comparisons of ROE are not particularly informative. Appropriate benchmarking would require a benchmark relevant for CDFIs specifically.

We also present the return on assets (ROA) which is similar in many respects to the ROE, and they tend to move together (although not necessarily) (**Figure 43**). ROA will always be lower than ROE because the denominator for ROE is net assets = assets – liabilities, the denominator for ROA is assets, and liabilities ≥ 0.[110]

Figure 43. CDFI Return on Assets (ROA)



Source: CIPR
Primary Data Source: Aeris Insight

Unsurprisingly, perhaps, the patterns in ROE and ROA look very similar to the pattern in net margin. The exception is the pattern for the top quartile in ROA. We see a steady decline from 2011 – 2019, followed by a surge upward through 2021. The likely reason for the difference in what we see in ROE and ROA is a more rapid accumulation of assets after 2019, which would lift ROA comparatively more. While analysts prefer to see a higher and increasing ROA, *all else equal*, an acceleration in the accumulation of assets means that these top-performing CDFIs are becoming

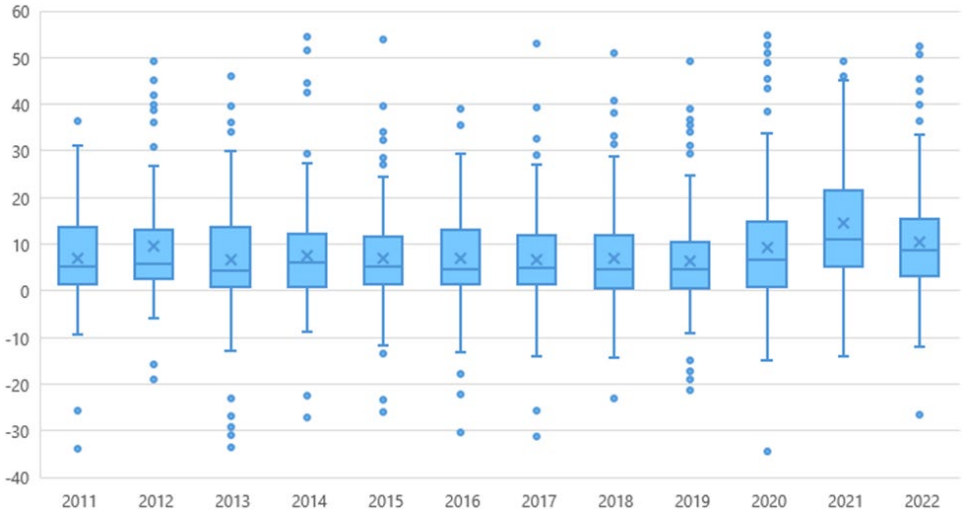
[110] Of course, if the entity has no liabilities, ROA = ROE.

better capitalized, or alternatively, are making significantly more loans. Moreover, the top-quartile ROA was a reasonably healthy 3.7 percent at its 2019 trough.

As we note for ROE, for perspective, the ROA for the S&P 500 was 5.9 percent at the end of the third quarter of 2024 (Macrotrends). The top 25 percent of CDFIs in our sample are in that range, but again, better gauges, especially when considering non-profits, are the time trend or a benchmark for the industry or a very similar industry. As for the trend, the post-2019 period appears to have been comparatively lucrative for our sample of CDFIs, as measured by both ROE and ROA. Interestingly, by comparing the standard deviations, we can find strong numerical evidence that the variance in ROAs across CDFIs over time is much larger than the variance in ROEs.

To enhance the analysis, we also present box-and-whisker plots for ROE (**Figure 44**) and ROA (**Figure 45**). We note that, as with net margin, several outliers are considerable in magnitude.

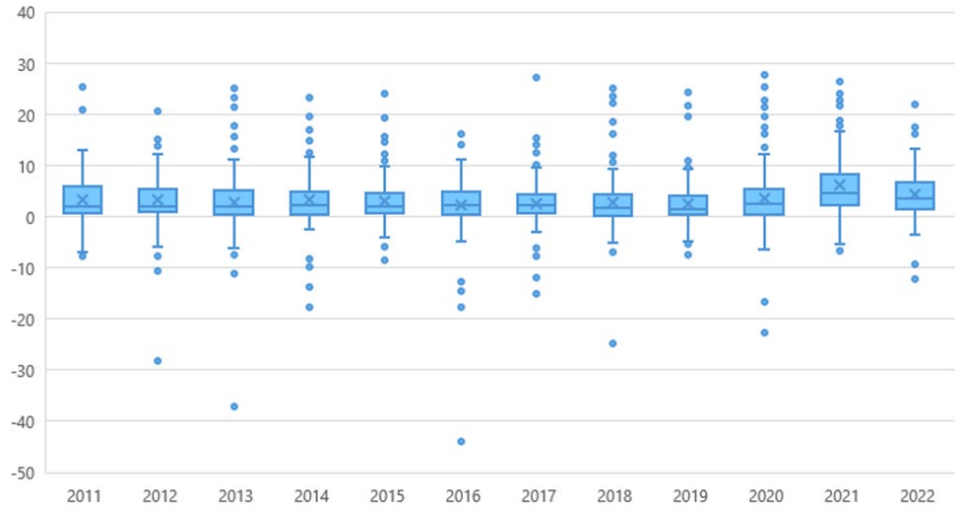
Figure 44. Distribution of ROE for Sample of CDFI Loan Funds



Source: CIPR
Primary Data Source: Aeris Insight

The interquartile range (IQR) (25th percentile to 75th percentile, given by the box) for ROE is fairly tight, but there are rather dramatic departures from the median. Across all years one CDFI had a ROE of about – 34.6 percent (2020) (table is truncated for exposition). On the other hand, one CDFI had a ROE of 54.7 percent (also in 2020). Interestingly, the lowest ROE for a CDFI occurred in the same year as the highest ROE for a CDFI, which suggests that specific periods account for little of the differences in ROE, if at all.

Figure 45. Distribution of ROA for a Sample of CDFI Loan Funds



Source: CIPR
Primary Data Source: Aeris Insight

With ROA, the IQR is even tighter about the median. But as with ROE, some CDFIs saw massive departures from the median in some years. Specifically, one CDFI saw an ROA of – 44 percent in 2016, while another enjoyed an ROA of 54.7 percent in 2020.

Compared to Net Margin, which directly reflects operational profitability, ROE provides insight into how well the funds are leveraging their net assets ("equity base") to enhance profitability. However, the higher volatility in ROE suggests that "equity-based" returns are more sensitive to broader financial and operational factors, which can lead to more pronounced swings in performance.

Similarly, ROA, which measures profitability relative to the total assets of CDFI loan funds, offers another lens through which to assess financial performance. The data shows that the mean ROA has generally been lower than both Net Margin and ROE, with an average of around 3.2 percent over the observed period. This difference is expected, as ROA reflects the efficiency with which the funds are using all their assets, not just "equity," to generate returns. The standard deviation of ROA is also relatively high, though lower than that of ROE, indicating less variability in asset-based returns compared to equity-based ones.

The reader should keep in mind that we have evaluated only 150 of about 1,400 CDFIs in the United States. Moreover, the CDFIs that are rated by Aeris or that are not rated by Aeris but provide them with data, generally are the largest of the CDFIs. To the extent any of these metrics are strongly correlated with size (for example, total assets), our analysis would speak only to larger CDFIs.

5. Credit Risk Measures and Asset Quality

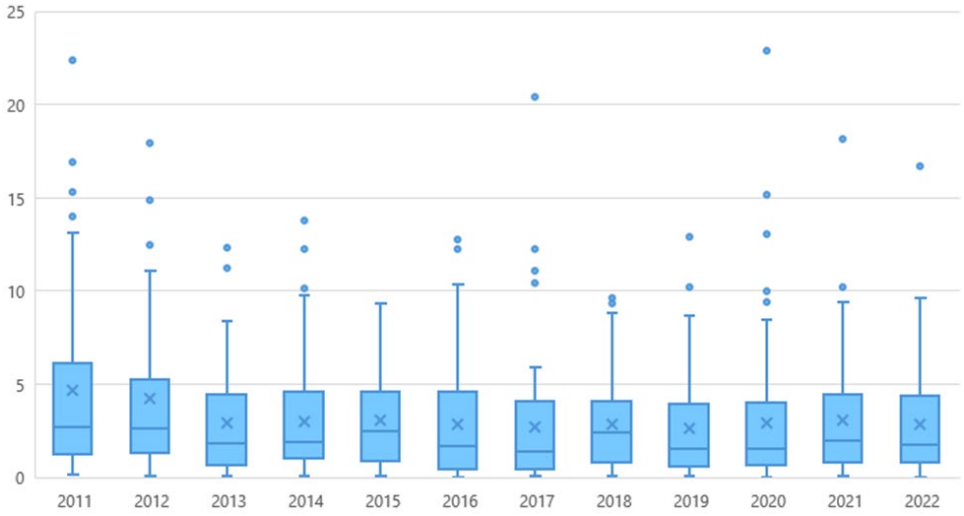
We evaluate the credit risk associated with CDFI loan funds by analyzing loan delinquency rates, measured as the ratio of loan balances delinquent 90 or more days to total outstanding loan balances. The delinquency rates also are a metric for evaluating the asset quality of the CDFIs.

We specify the delinquency rate as

$$\text{Delinguency Rate} = \frac{\text{Loan Value 90+ Days Past Due}}{\text{Value of Total Loans Outstanding}} \quad (9)$$

The boxplot below offers a visual representation of the delinquency rates of CDFI loan funds from 2011 to 2022 (**Figure 46**). The boxplot highlights the central tendency (i.e., the median) and the variability of delinquency rates over time.

Figure 46. Distribution of Loan Delinquency Rates for CDFI Loan Funds



Source CIPR

Primary Data Source: Aeris Insight

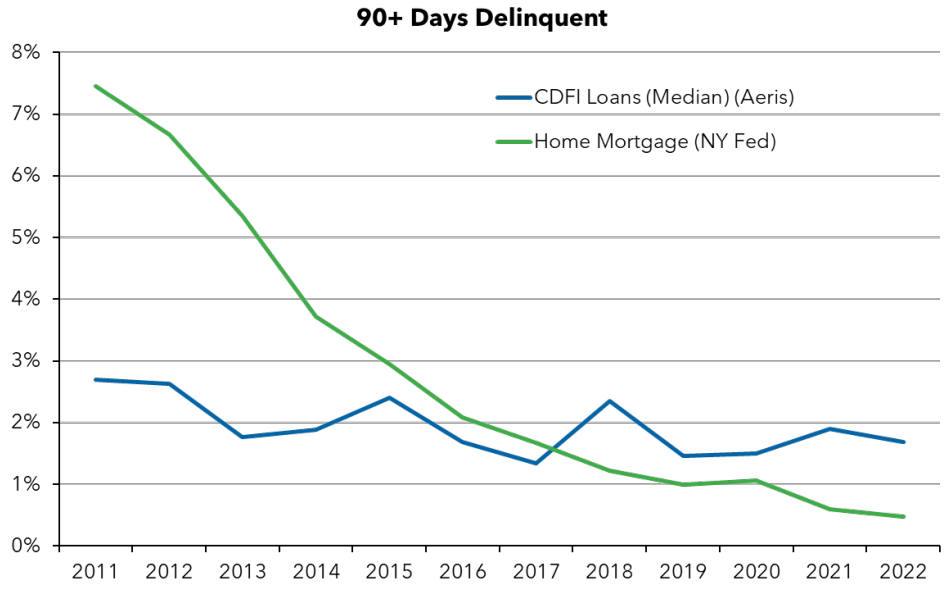
Notes: The boxplot shows the distributions of 90 days delinquency rates in percent of individual CDFI loan funds. The 90-day delinquency rates were calculated by Aeris based on annual financial statements using equation (9).

Across CDFIs over time, the mean delinquency rate was 3.0 percent, with a standard deviation of 3.26 percent, which implies that two-thirds of CDFI delinquency rates were under 6.3 percent across all years (assuming a normal distribution). The minimum median 90+ day delinquency rate was 1.34 percent in 2016, while the high was 2.69 percent in 2011. The 25th percentile delinquency rate was 0.68 percent over all years, meaning that 25 percent of CDFI loan funds had delinquency rates at or below 0.68 percent, on average, for 2011 – 2022. The lowest delinquency rate was 0%

for several CDFIs in several years. The highest for any CDFI loan fund in any given year was 22.8 percent (2020). Overall, the variation in delinquency rates across CDFIs over time highlights diversity in loan performance across CDFI loan funds, with some funds maintaining excellent asset quality while others face significant challenges.

Many, perhaps the majority of CDFI loans are used to finance affordable multifamily housing, although some support affordable homeownership and some support other community development activities. To put CDFI loan fund delinquency rates in perspective, we compare them with the percentage of home mortgage loan balances 90 or more days past due (**Figure 47**).

Figure 47. CDFI Loan Fund and Single-Family Home Mortgage Balances 90 or More Days Past Due



Source: CIPR
Primary Data Sources: Aeris Insight; Federal Reserve Bank of New York

A likely better comparison would be the delinquency rate on multifamily properties, but we are unable to locate a time series of multifamily delinquencies because most of these loans are packaged in commercial mortgage-backed securities (CMBS) (see Section II.B.2.b). In 2022, when the median CDFI loan fund had a 90+ day delinquency rate of roughly 1.7 percent, the multifamily CMBS delinquency rate hovered mostly between 1.5 percent and just under 2.0 percent but climbed above 2 percent by the end of the year (Multi-Housing News). In recent months, multifamily CMBS 90+ day delinquency rates have climbed above 3.5 percent (Multi-Family News), which may reflect the general depression in commercial real estate, although

multifamily residential is comparatively strong relative to other commercial property classes.

Overall, delinquency rates for CDFI loan funds, although they can vary widely, generally are on par or better with comparison loans. In particular, the performance tends to exceed the performance of multifamily CMBS. Just as important, and perhaps more so, is that CDFI loan fund delinquency rates are remarkably stable relative to other residential mortgages, including commercial multifamily.

6. Other Performance Measures

In addition to delinquency rates, which directly measure credit risk, several other financial ratios provide a broader perspective on the financial health and operational stability of CDFI loan funds. Among the most critical are the Current Ratio, Debt Ratio, Self-Sufficiency Ratio, and Solvency Ratio.

a) Current Ratio

The Current Ratio (**Figure 48**) is a measure of liquidity. Technically, liquidity refers to how quickly an investment can be sold (for cash) without negatively impacting its price. In the context of an entity like a CDFI, the current ratio is an assessment of the entity's ability to pay short-term obligations (due within one year). The formula for current ratio is given by:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}, \tag{10}$$

where current assets are all of an entity's assets that can be converted to cash within one year, and include, for most entities, cash and cash equivalents, marketable securities, inventories, and accounts receivable that can be reasonably turned over in a year (CDFIs are, of course, unlikely to carry inventories). Current liabilities are financial obligations that are due within one year or within a normal operating cycle.

Some argue that a "good" current ratio is between 1.5 and 3.[111] Others argue that a ratio of more than 1 suggests financial well-being for the company (Corporate Finance Institute).[112] In some sense there is no upper bound over which the current ratio is too high. However, a very high current ratio may indicate that an entity is leaving excess cash unused rather than investing in growing its business, or in the

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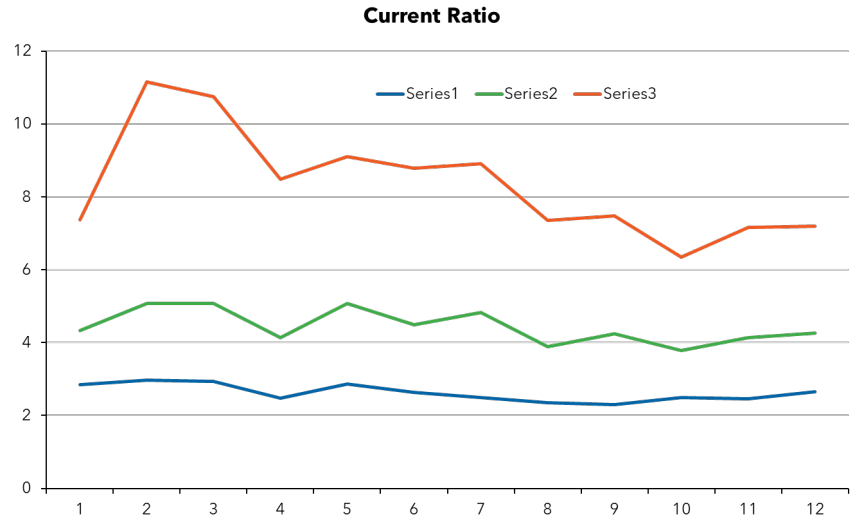
[111] Lydia Kibet, 2024, "Understanding the Current Ratio," *Business Insider*. July 18.

[112] We would argue that the current ratio should be meaningfully above 1, by how much determined by industry averages. A ratio of 1 indicates that the entity is just able to meet its financial obligations over the next year.

case of CDFIs, serving community needs. Finally, a current ratio that is in line with the industry average or slightly higher is also generally considered acceptable. Again, a current ratio that is significantly lower than the industry average may indicate a higher risk of distress or default by the company, while a current ratio significantly above the average may indicate that management is not using its assets efficiently.

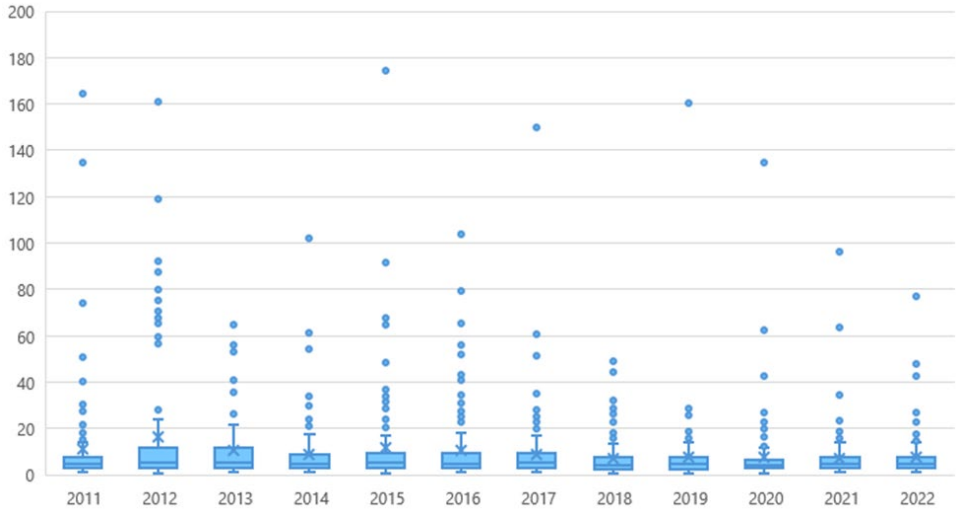
Figure 48. Quartile Current Ratios for CDFI Loan Funds



Source: CIPR
Primary Data Source: Aeris Insight

Figure 49 shows a more granular view of current ratios in our CDFI loan fund sample.

Figure 49. Distribution of CDFI Loan Fund Current Ratios



Source: CIPR
Primary Data Source: Aeris Insight

The box-and-whisker plot shows very substantial variation in current ratios in our sample of CDFI loan funds over time. Indeed, outliers are rather extreme, with several CDFIs revealing current ratios more than 100 in some years. But as shown in the plot, the IQR is very tight in the range of 2.5 to 10. Even the average and median current ratios are exceptionally high by most industry standards; however, the CDFI industry is very unique, and "high" current ratios seem to be the norm. The mean current ratio across CDFIs over time is 8.9 with a relatively large standard deviation of 15.7, indicating wide dispersion across CDFIs and years in the current ratio. The median is 15.7.

The large spread within a single year highlights the disparate financial strategies employed by different CDFI loan funds and suggests that liquidity management is inconsistent across the sector. Funds with lower current ratios would be expected to be more vulnerable during economic downturns, potentially struggling to cover short-term liabilities, which can exacerbate financial instability during periods of rising delinquency rates.

b) Debt Ratio

The Debt Ratio (**Figure 50**) is a leverage ratio that measures the relative amount of an entity's assets that are financed by debt. The ratio is given by

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Debt}} \tag{11}$$

In terms of risk, ratios of 0.4 or lower are better.[113] As the interest on debt must be paid regardless of business profitability, too much debt may compromise the entire operation if cash flow dries up. Companies unable to service their own debt may be forced to sell off assets or declare bankruptcy. But there is a limit to how low the debt ratio should be. A debt ratio of 0, for example, despite how attractive being debt free might sound, suggests the entity never borrows to finance increased operations. In the context of CDFIs, borrowing at reasonable levels could allow them to expand their services to the community by making additional loans.

A debt ratio of 0.6 or higher makes it more difficult for an entity to borrow money. Lenders often have debt ratio limits and will not extend further credit to firms that are overleveraged. Still, other factors come into play in determining creditworthiness, such as payment history and professional relationships.

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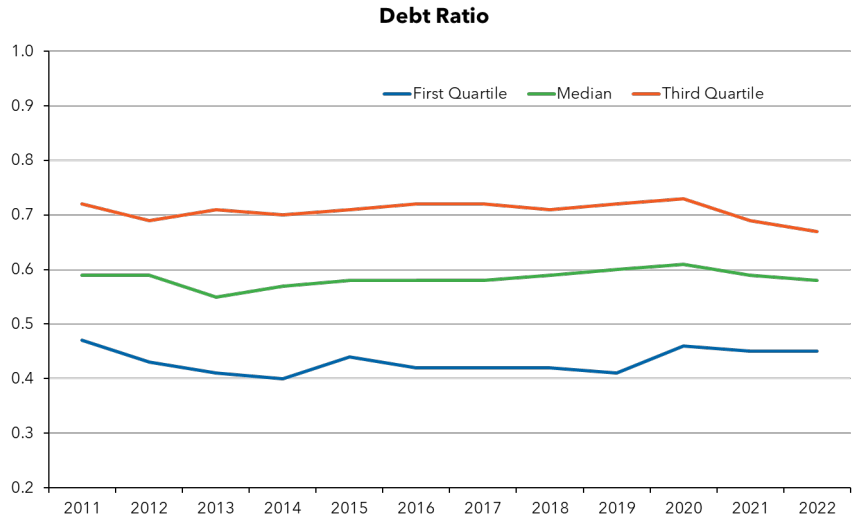
[113] Sean Ross, 2024, "What Is a Good Debt Ratio (and What's a Bad One)? Investopedia. September 3.

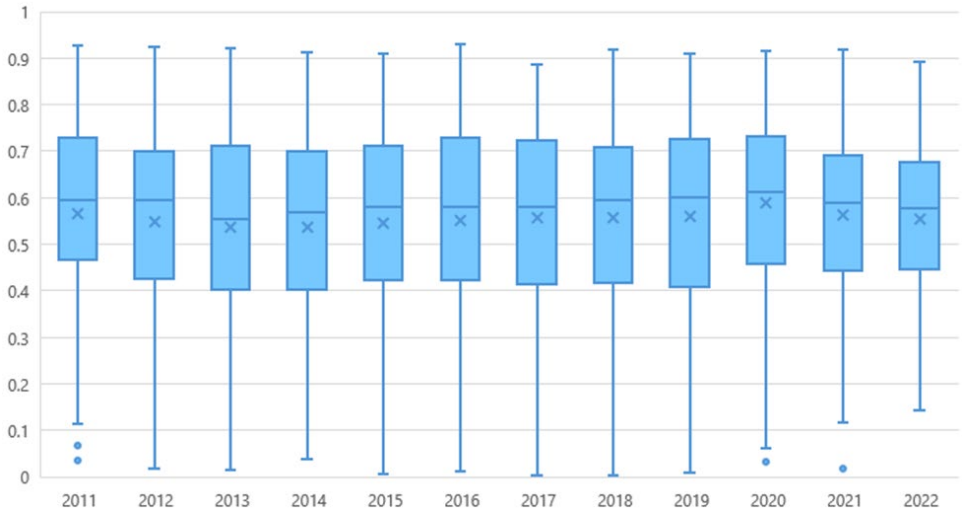
Figure 50. Quartile Debt Ratios for CDFI Loan Funds



Source: CIPR
Primary Data Source: Aeris Insight

As with other financial metrics discussed in the report, we present a box-and-whisker plot to show a more granular picture of debt ratios across the sector (**Figure 51**).

Figure 51. Distribution of CDFI Loan Fund Debt Ratios



Source: CIPR
Primary Data Source: Aeris Insight

The mean debt ratio across CDFI loan funds over time is 0.55, which is comparatively high by industry-wise standards. However, loan funds typically operate by borrowing capital, which they then lend back out to worthy causes. That being the case, we should expect the debt ratio of CDFI loan funds to be meaningfully higher than that of most other sectors. We believe most of the CDFI loan fund debt ratios are

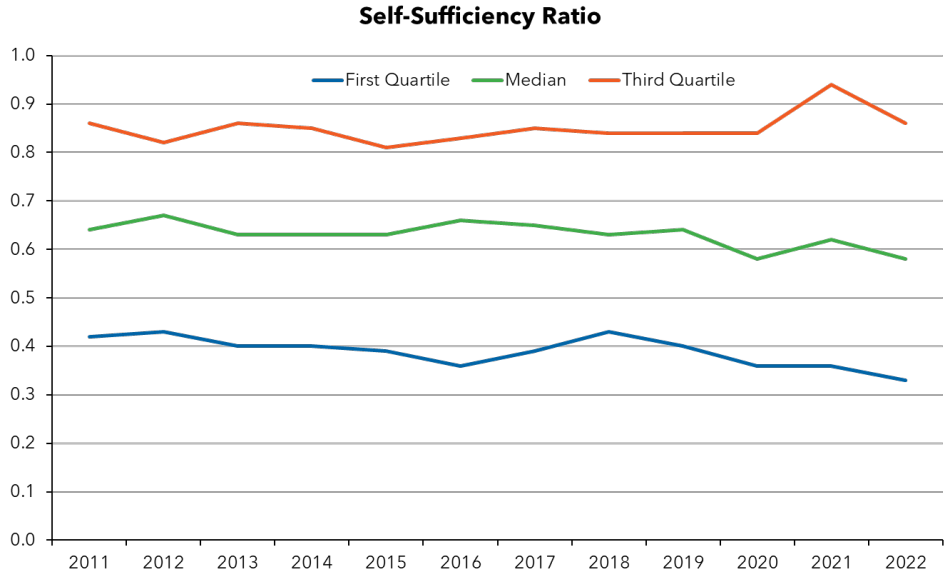
reasonable given how they operate. However, there are CDFIs with debt ratios near 1, which probably is a problem. The standard deviation is 0.2, meaning that about two-thirds of our sample of CDFI loan funds have debt ratios between 0.35 and 0.75 (assuming anormal distribution of debt ratios). Similarly, about 95 percent have debt ratios between 0.15 and 0.95. The median debt ratio is 0.59, meaning that half of the CDFIs have debt ratios below 0.59 and half have debt ratios above 0.59.

c) Self-Sufficiency Ratio

The Self-Sufficiency Ratio (**Figure 52**) is a critical metric for evaluating the financial performance of CDFIs. CDFIs, though non-profit entities, are in some ways an amalgamation of a traditional business (like a consumer finance company) and a philanthropic organization. They collect their own revenue in the form of financing revenue (interest income [from loans primarily], realized gains [losses] on portfolio investments, and loan closing and origination income) and various fees. But they also receive funds in the form of grants and other contributions. The self-sufficiency ratio is used to determine whether a CDFI is able to generate enough revenue through earned income (as opposed to contributed revenue) to cover its costs without draining net assets (equity equivalent). The formula for the self-sufficiency ratio is:

$$\text{Self Sufficiency Ratio} = \frac{\text{Earned Income}}{\text{Total Expenses}} \tag{12}$$

Figure 52. Quartile Self-Sufficiency Ratios for CDFI Loan Funds

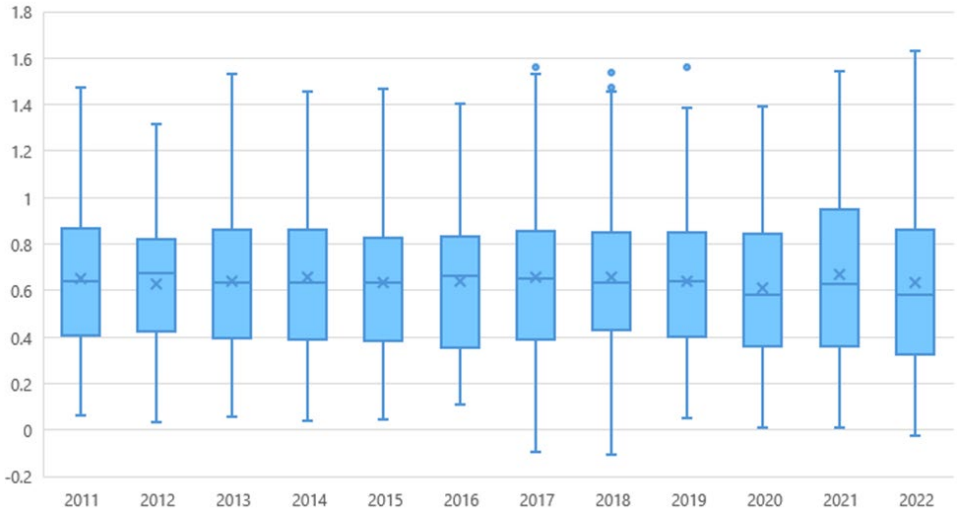


Source: CIPR
Primary Data Source: Aeris Insight

We might think ideally the self-sufficiency ratio would be 1 or higher, meaning the CDFIs are totally self-supporting. However, capital grants and operating grants can be substantial, in some cases greater in magnitude than earned revenue. We should expect that, at least in the case of unrestricted donor funds, the unearned revenue would be put to operational use as part of fulfilling the CDFIs' missions.

A box-and-whisker plot (**Figure 53**) reveals significant variation in self-sufficiency ratios across CDFI loan funds and time, and in some cases, CDFIs are completely self-supporting.

Figure 53. Distribution of CDFI Loan Fund Self-Sufficiency Ratios



Source: CIPR
Primary Data Source: Aeris Insight

The average self-sufficiency ratio across our sample of CDFIs over the period of our analysis is 0.64, a number that, along with the median, has been remarkably steady from year to year. The standard deviation is 0.34, indicating that two-thirds of the sample CDFI loan funds have self-sufficiency ratios between 0.3 and 0.98 (assuming a normal distribution). The median self-sufficiency rate across CDFI loan funds over time is 0.63, which is about equal to the mean, suggesting that the self-sufficiency ratio is fairly symmetric (higher vs. lower) around the mean. By rough approximation, about 15 – 20 percent of the CDFI loan funds are self-sufficient (ratio $\geq$ 1).

7. Summary of CDFI Metrics

The financial ratios presented for our sample of CDFIs, when analyzed in conjunction with delinquency rates, provide a fairly clear picture of the financial health of CDFI loan funds, at least the ones that report to Aeris. The inverse relationship observed

between net margin and delinquency rates, particularly in the early years, highlights the challenges that funds face in maintaining profitability during periods of increased credit risk, although there is no perfect correlation. As would be expected, financial health declines when delinquency rates rise. The persistent variability in these ratios across funds indicates that some CDFI loan funds have adapted well to changing economic conditions, while others continue to face significant financial challenges.

The analysis of social impact investing (SII) in CDFI loan funds by the insurance industry underscores the significant risk and return potential of these investments. Delinquency rates, which measure the percentage of loans delinquent by more than 90 days, have shown a marked decline from a mean of 4.6 percent in 2011 to 2.8 percent in 2022. This reduction indicates improved credit conditions and borrower performance, which is not surprising given that the economy was still recovering from a severe recession in 2011. The data suggest that while credit risk has decreased, it remains a crucial factor in the financial health of CDFIs.

Additionally, net margin has exhibited substantial variability, with notably high performance in 2021 (mean Net Margin of 30.8 percent) but also significant challenges, as reflected in the volatility associated with this metric.

For insurance companies, CDFI loan funds represent a double-edged sword: they offer potential for attractive returns but come with meaningful risks and require significant due diligence. The variability in net margins and the historical context of high delinquency rates underscore the need for robust risk management strategies.[114] These funds operate in higher-risk markets, which can lead to substantial financial instability during economic downturns, as evidenced by the high delinquency rates in the early 2010s and periods of low Net Margins. Thus, while CDFI loan funds can align with insurers' goals of long-term stability and diversification, the associated risks necessitate careful analysis and strategic planning.

Moreover, government incentives and programs designed to support community investments add an extra layer of complexity and appeal. These benefits, including tax advantages, grants, and direct subsidies, can enhance financial returns but also introduce regulatory and compliance risks. As the demand for socially responsible investing continues to grow, insurance companies must balance the financial opportunities presented by CDFI loan funds with the inherent risks, ensuring that

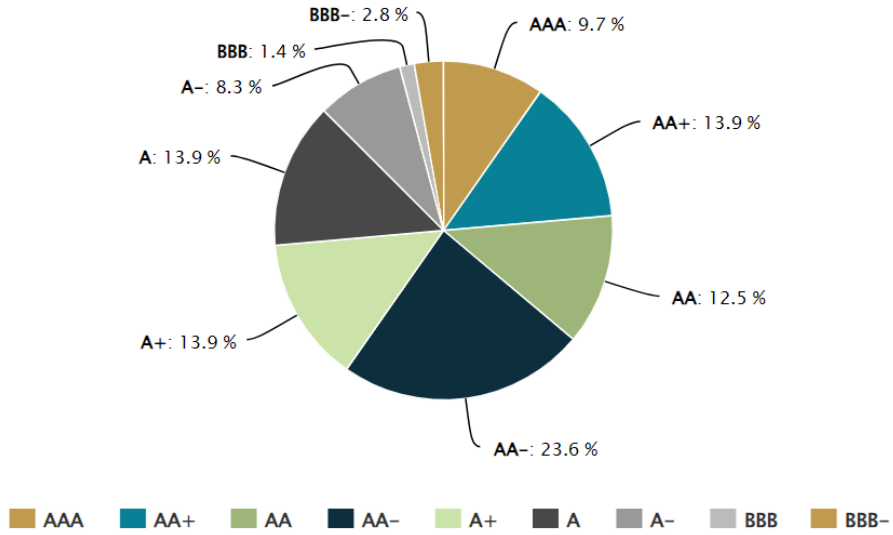
[114] As noted in the earlier in the text, all residential mortgages were suffering high delinquency rates at this time, not only CDFIs.

these investments contribute to both economic and social progress in underserved communities while safeguarding their own financial stability.

8. Aeris CDFI Ratings

Over 97 percent of Aeris CDFI ratings are BBB or better, with the remainder rated BBB- (**Figure 54**). Just under 60 percent of rated CDFIs earned an AA- or better.

Figure 54. Distribution of Aeris Financial Strength Ratios



Source: Aeris, Impact Investing Insights, Distribution of Current Financial Strength Ratings (accessed October 13, 2024).

E. Private Credit

Private credit involves lending capital to private entities. Unlike traditional *public* (or primary) *market* debt instruments (i.e., bonds), *private debt*; that is private credit, typically includes loans and credit facilities provided directly to businesses. Private credit has a variety of strategies. Direct lending is the largest segment and accounts for about 40 percent of the U.S. private credit market. To compensate for illiquidity and the lack of a secondary market, private credit generally offers higher yields than more traditional public securities, such as corporate bonds.

1. Data

We acquired a sample of rating filings of securities and loans with social impact from the NAIC's Securities Valuation Office (SVO). The SVO is the professional staff assigned to support the Valuation of Securities (E) Task Force of the NAIC in

conducting credit quality assessments of insurer-owned securities, including private credit.

The securities analyzed across the filings demonstrate a wide range of financial structures, each tailored to meet specific funding needs while addressing the inherent risks of the issuer's operations. A significant portion of the securities is comprised of various types of bonds, including municipal bonds (general obligation and revenue bonds), and refunding bonds. These securities often are issued by public authorities or development corporations to raise capital for public projects like educational facilities and healthcare facilities, or to support other community development initiatives.

Several filings detail term loans and revolving credit facilities, particularly for smaller entities or specialized projects that require flexible funding solutions. These loans are typically structured with detailed covenants and conditions to ensure compliance and mitigate default risks. Innovative financial instruments like Career Impact Bonds (CIBs) and other income-share agreements are noted, where repayment is contingent upon the economic success of the beneficiaries—in the case of CIBs, students achieving a certain income threshold post-graduation.

2. Risks

The filings highlight several risk factors that could potentially impact the performance and stability of the investments. Most of the securities are issued by entities for which income is highly dependent on operational success, such as schools and hospitals. The ability to meet financial obligations therefore relies heavily on maintaining minimal levels of operational efficiency, such as student enrollments or patient volumes. Many projects funded through these securities operate in markets especially susceptible to economic fluctuations, which can affect asset values or the creditworthiness of the obligors. Moreover, unsecured loans and high-risk credit environments in sectors like microfinance introduce heightened levels of credit risk. Particularly for securities tied to public funding or government grants, there is political risk, which is a meaningful risk of changes in policy or legislation that could alter funding levels or operational guidelines.

The filings show a range of strategies employed to mitigate these risks to ensure the stability and attractiveness of these securities.

Collateral in the form of real estate or other valuable assets provides one layer of security for investors, ensuring that there are tangible assets backing the issued securities. Collateral is particularly prevalent in healthcare and educational facility bonds. Many issuers establish reserve funds or maintain specific liquidity ratios to

manage potential shortfalls in revenue or unexpected financial strains. These provisions are crucial for maintaining creditworthiness and meeting payment obligations on time.

Strict financial covenants are often incorporated into loan agreements and bond indentures, requiring issuers to adhere to certain operational and financial benchmarks. These covenants serve as both risk mitigators and indicators for potential issues, allowing investors to monitor and react to changes in the issuer's financial health.

3. Review of the Securities

The review of these securities highlighted a framework where risk management strategies are effectively integrated to safeguard investor interests. Each security's structure is tailored to balance risk with potential returns, supported by stringent risk mitigators.

In the analysis of the individual filings, it becomes clear that the securities commonly viewed as "riskless" are, in fact, composed of inherently risky bonds coupled with protective guarantees, which can be viewed as put options.

$$\text{Riskless Security} = \text{Risky Security} + \text{(implicit) Guarantee Against Default} \tag{13}$$

where “Risky Security” is the present value (PV) of expected cash flows from the of risk security and “Guarantee Against Default” is the value of the put option.

The primary step in the valuation process involves assessing the inherent risk of the bond, which is linked directly to the issuer’s operational and financial stability. This involves a detailed review of the issuer's financial health, market position, and sensitivity to external economic factors.

The yield on these risky bonds is determined based on the expected risk without external protection. This yield is typically higher, reflecting the pure credit and operational risk of the issuer.

Alongside the risky bond, each security includes what is effectively a put option. This option represents the financial guarantee or other risk mitigation measures that protect the bondholder from the downside risk associated with the issuer’s potential failure to meet its obligations.

The value of the put option, P, is derived from the probability of the issuer defaulting and the guarantee's effectiveness in covering these losses. The valuation of the put can be approached using option-pricing models like the Black-Scholes (1973) model or binomial options pricing models, which factor in the strike price (equivalent to the

bond's face value), the risk-free rate (the yield on risk-free security), the volatility of the issuer's earnings, and the time to maturity of the bond.

Assuming debt is sold/bought at issuance, using the Black-Scholes pricing model, we calculate *P* as

$$P = Xe^{-rt}N(-d_2) - S_0N(-d_1) \tag{14}$$

where S_0 is the current market price of the debt instrument (assumed to be value of its principal or face value of the debt at debt issuance), X is the strike price, which is equivalent to the debt's face value times its recovery rate (assumed to be 99%), *r* is the risk-free interest rate (assumed to be 1.5%), *T* is the time to maturity in years, and *N*() is the standard normal cumulative distribution function (cdf).

The variables d_1 and d_2 are defined as:

$$d_1 = \frac{\left(\ln\left[\frac{S_0}{T}\right] + \left[a + \frac{\sigma^2}{2}\right]T\right)}{\sigma\sqrt{T}} \tag{15}$$

and

$$d_2 = d_1 - \sigma\sqrt{T} \tag{16}$$

where σ is the annualized volatility of the underlying asset's returns or volatility of the issuer's earnings. We use the standard normal cumulative distribution function *N*() to find $N(-d1)$ and $N(-d2)$.

The total value of the security is calculated by combining the present value of expected cash flows from the risky bond (discounted at a higher yield reflecting inherent risks) and the value of the put option (which lowers the effective risk).

$$\text{Riskless Security} = \text{Risky Security} + \text{Value of Put Option (the guarantee)} \tag{17}$$

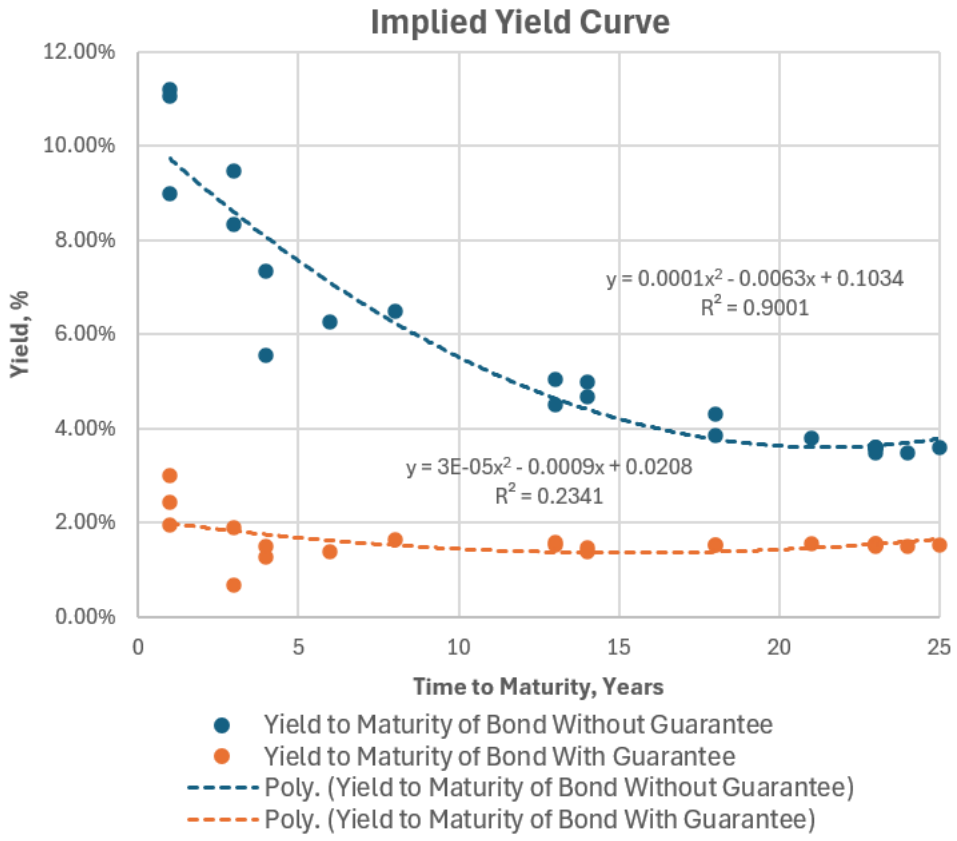
where "Risky Security" is the PV of expected cash flows of the risky security and "Guarantee Against Default" is the value of the put option.

We provide step-by-step calculations in **Appendix B**.

This approach allows us to quantify the riskiness and implied guarantees of the private debt using public information. By treating the (implied) put option as a financial guarantee against the issuer's default, we can estimate the cost of this protection based on the volatility of similar assets from the stock market, the risk-free rate, and the known time to maturity. The value of the put option reflects the market's perception of the likelihood and potential impact of the issuer's default. By

combining the PV of the riskless debt with the value of the put option, we can derive the total value of the security. This combined approach provides insights into the pure risk of the bond (without guarantees) and the effectiveness and cost of the guarantees in mitigating this risk. Thus, it helps in assessing both the intrinsic riskiness of the debt and the value of the implied guarantees provided to debtholders.

Figure 55. Implied Yield Curve of NAIC SVO Debt Securities Considering



Source: CIPR

Note: The figure shows the implied yield curve of NAIC SVO debt instruments with and without guarantees. The value of guarantees is calculated as the value of a put option using the Black and Scholes formula and the volatility of assets based on a coarse classification of industries from the Fama-French website.

Figure 55 shows the implied yield curve of the NAIC SVO debt securities and loans. Yields to maturity for bonds without guarantees exhibit a higher and steeper downward trend, starting at approximately 10 percent for short-term maturities and converging toward 4 percent at longer maturities (20+ years). This reflects the higher credit risk associated with unguaranteed private debt instruments and the corresponding premium investors demand. Yields to maturity for bonds with

guarantees remain relatively stable, averaging around 2 percent across all maturities. The lower yields reflect the enhanced creditworthiness provided by guarantees, which reduces perceived risk and stabilize investor returns.[115]

The analysis of rating filings of social impact securities and loans selected by the NAIC SVO highlights the complex financial structures and risk management strategies employed to ensure the stability and attractiveness of these investments. The securities, which include various types of bonds, term loans, and innovative instruments like Career Impact Bonds, demonstrate a wide range of financial structures tailored to specific funding needs. The filings reveal that these securities are issued by entities whose income is highly dependent on operational success, making them susceptible to economic fluctuations and policy changes, thereby introducing significant credit risk.

To mitigate these risks, various strategies are employed, such as collateral in the form of real estate, reserve funds, and strict financial covenants. These measures provide a layer of security for investors and ensure compliance with operational benchmarks. The analysis shows that securities that are often considered "riskless" are composed of inherently risky bonds coupled with protective guarantees like put options. This dual structure helps balance the risk-return equation, making these investments more stable and appealing to investors. The integration of guarantees against default, assessed using models like Black-Scholes, provides a comprehensive view of the securities' total value, balancing the inherent risks with protective measures to safeguard investor interests.

In conclusion, NAIC SVO debt instruments offer significant opportunities for insurance companies seeking to balance financial returns with social impact. However, the inherent risks associated with these investments necessitate careful analysis and robust risk management strategies to ensure long-term stability and profitability. As the demand for socially responsible investing continues to grow, the role of these instruments in driving economic and social progress in underserved communities will likely become increasingly significant.

F. Private Equity Funds

We leverage the Preqin database to identify social infrastructure private equity (PE) funds. No funds are listed specifically as "social impact" funds. "Social infrastructure

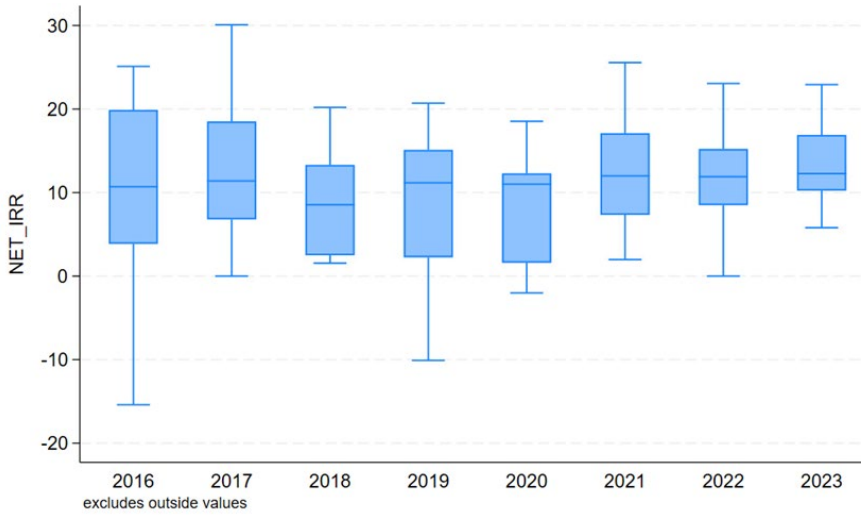
[115] There are no liquidity risk adjustments, or any tax-exempt benefits included. We estimate that liquidity premium close to one of illiquid municipal bonds (about 1.5%). Refer to Ang, Bhansali & Xing (2014), Table 3, page 30 for liquidity premium distribution moments.

includes what we have determined as social impact investments but also some investments for the public good that may not be targeted specifically to low- and moderate-income communities. We also retrieve financial performance data from Preqin; specifically Net Internal Rate of Return (Net IRR). To locate social infrastructure funds in the Preqin database search the term, "social infrastructure" and identify 61 social infrastructure PE funds.

We use Preqin's NET IRR (%) measure to examine social infrastructure PE funds. We reduced our sample of social infrastructure funds to funds that reported Net IRR from 2016 to 2023. After removing observations with missing Net IRR, we retained 42 funds in our sample.

We first examine the annual financial performance of the funds by calculating descriptive statistics on Net IRR. **Figure 56** shows box plots of Net IRR for our sample of funds from 2016 to 2023. Net IRR largely decreases throughout the sample period. The box and whickers became much tighter over the sample period, indicating that Net IRR became more similar among the funds in more recent years. Specifically, according to the summary statistics in **Table 11**, the Net IRR became fairly similar among funds at about 12.1 percent after 2020.

Figure 56. Distribution of Net IRR Over Time for Social Infrastructure PE Funds



Source: CIPR
Primary Data Source: Preqin

Table 12: Descriptive Statistics, Net IRR, Social Infrastructure PE Funds

Year	Count	Mean (%)	Median (%)	Std. dev.	Min (%)	Max (%)	25th Percentile (%)	75th Percentile (%)
2016	15	18.94	10.70	30.52	-15.40	112.07	3.86	19.90
2017	16	7.43	11.39	23.65	-76.37	30.09	6.79	18.52
2018	15	0.16	8.54	29.88	-99.95	20.20	2.50	13.32
2019	20	1.52	11.17	27.92	-79.45	20.70	2.25	15.11
2020	17	5.29	11.00	16.32	-52.95	18.53	1.60	12.30
2021	22	11.41	12.00	8.57	-13.45	25.56	7.33	17.10
2022	29	11.55	11.90	5.50	0.00	23.05	8.50	15.22
2023	18	13.37	12.28	4.49	5.80	22.93	10.24	16.90
Total		**8.90**	**11.80**	**20.0**	**-99.95**	**112.07**	**5.89**	**15.60**

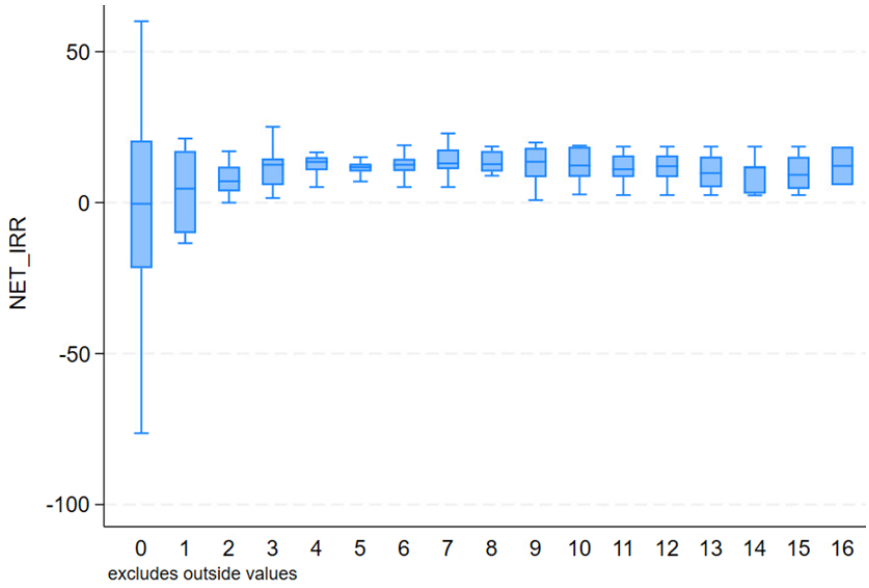
We then examine Net IRR by fund age. Age is calculated as the difference between the Net IRR reporting year and the fund's vintage year.[116] The box plot (**Figure 57**) and summary statistic table (**Table 12**) below show that the Net IRR of these PE funds varied less after 3 years and that, on average, Net IRR increased with age. Moreover, after three years, no funds in our sample have negative Net IRRs. Overall, the summary statistics show that social infrastructure PE funds' financial performance, as measured by Net IRR, tends to struggle in the early stage and begins to perform relatively well and consistently after age 3. This pattern is not unusual for PE funds generally. After age 3, the social infrastructure funds' Net IRR was about 12 percent, on average.

Finally, we examined Net IRR by primary region of focus (**Figure 58**, **Table 14**). Of the 42 social infrastructure PE funds, most focused on Europe (24 funds) and North America (16 funds). There were only 2 funds that focused on the Americas generally, however, and these two funds outperformed the other funds on average.

Another salient fact from these summary statistics tables is that the difference between mean and median is greater in years before 2021. Especially in the years 2018, 2019, and 2020, the mean is much less than the median. This pattern of mean < median indicates that there are a few poorly performing funds that skew the distribution of aggregate Net IRR to the left. The skew seems to be most pronounced for funds with age ≤ 4, and for funds that focus on North America.

[116] The vintage year is the year in which the fund begins to make significant investments.

Figure 57. Distribution of Net IRR by Fund Age

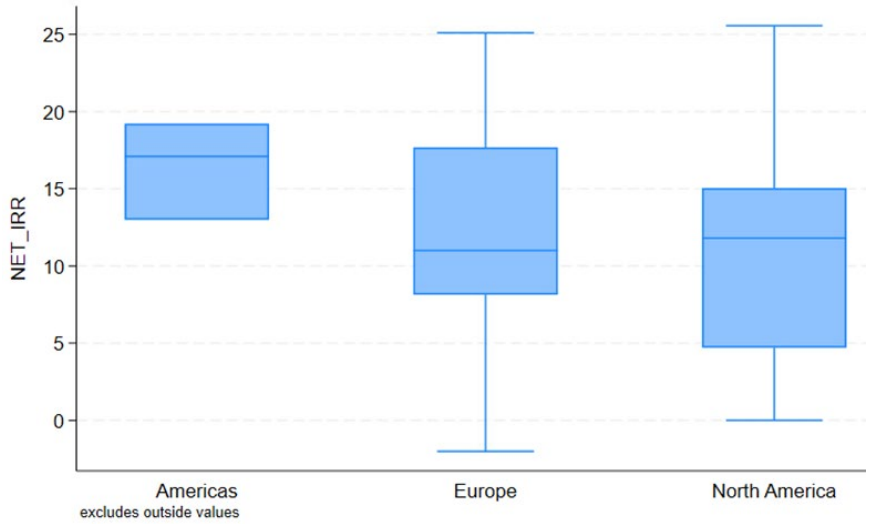


Source: CIPR
Primary Data Source: Preqin

Table 13. Descriptive Statistics for PE Social Infrastructure Funds by Fund Age

Age	Count	Mean (%)	Median (%)	Std. dev.	Min (%)	Max (%)	25th percentile (%)	75th percentile (%)
0	12	1.52	-0.40	51.91	-76.37	112.07	-21.68	20.55
1	10	-4.41	4.62	35.73	-99.95	21.21	-10.10	17.10
2	14	1.70	7.06	23.89	-79.45	17.00	3.73	11.91
3	15	7.44	12.55	17.79	-52.95	25.10	5.80	14.60
4	13	12.61	13.50	7.23	0.00	25.56	10.69	15.07
5	14	12.30	11.74	5.08	5.19	24.60	10.30	12.90
6	12	12.93	12.55	4.68	5.19	23.05	10.47	14.50
7	9	14.13	13.00	5.32	5.19	22.93	11.10	17.60
8	6	13.40	12.75	3.94	8.90	18.60	10.29	17.10
9	8	12.61	13.52	6.69	0.80	19.90	8.45	18.14
10	11	12.93	12.30	5.33	2.70	18.87	8.54	18.50
11	6	11.20	11.05	5.61	2.50	18.53	8.49	15.60
12	7	11.62	12.10	5.13	2.50	18.53	8.44	15.60
13	4	10.15	9.78	6.78	2.50	18.53	5.08	15.22
14	5	9.53	11.80	6.81	2.40	18.53	3.00	11.90
15	4	9.86	9.20	6.92	2.50	18.53	4.55	15.17
16	2	12.17	12.17	9.00	5.80	18.53	5.80	18.53
Total		**8.90**	**11.80**	**20.01**	**-99.95**	**112.07**	**5.89**	**15.60**

Figure 58. Distribution of Fund Net IRR by Region of Focus



Source: CIPR
Primary Data Source: Preqin

Table 14. Descriptive Statistics, Social Infra. PE Funds, by Region of Focus

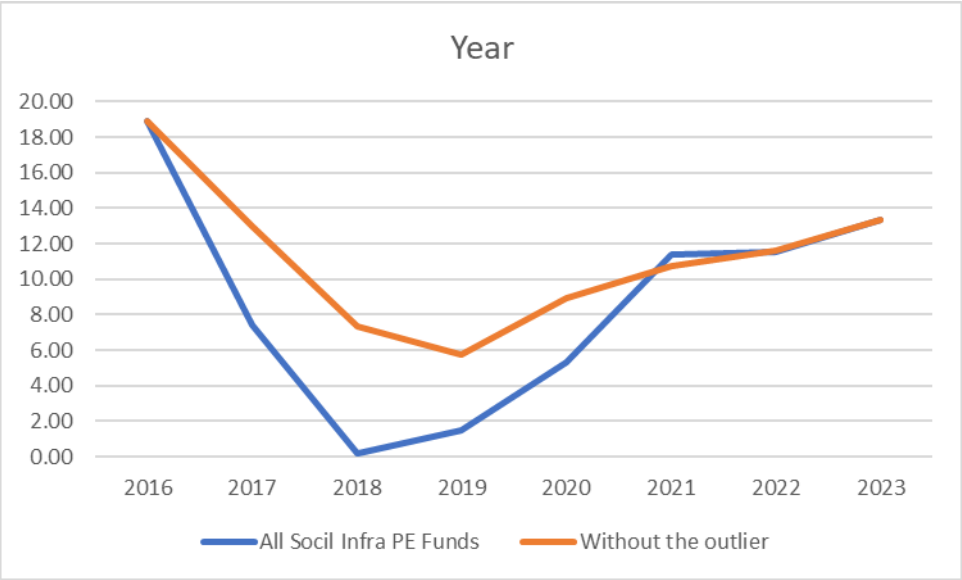
Primary Region Focus	Count	Mean (%)	Median (%)	Std. dev.	Min (%)	Max (%)	25th percentile (%)	75th percentile (%)
Americas	2	15.67	17.10	11.28	-1.03	30.09	13.00	19.21
Europe	24	10.95	11.00	17.82	-74.93	112.07	8.14	17.68
North America	16	6.41	11.80	22.23	-99.95	60.07	4.71	15.04
Total		**8.90**	**11.80**	**20.01**	**-99.95**	**112.07**	**5.89**	**15.60**

To examine which poorly performing fund or funds skew the distribution, we examine more closely the funds with a negative Net IRR. We subsequently identified a fund that performed especially poorly. Upon further evaluation, we discovered that the mean Net IRR increased from 8.9 percent to 11.1 percent when this fund was excluded from the analysis. Furthermore, the difference between the mean and median decreased, indicating a less skewed distribution. Further, the standard deviation decreased from 20 percent to 11.9 percent, suggesting less variation in Net IRR across funds. The especially poorly performing fund was a significant outlier.

Figure 59 highlights the effects that one especially poorly performing fund can have on aggregate results. Specifically, the chart shows that social infrastructure private equity funds start to provide a consistent Net IRR of around 11.9 percent after 2 years,

indicating that these funds provide longer-term returns. Also, fund-picking skills are essential, as emphasized by the outlier discussed before.

Figure 59. IRR by Year with and without the Outlier



Source: CIPR
Primary Data Source: Preqin

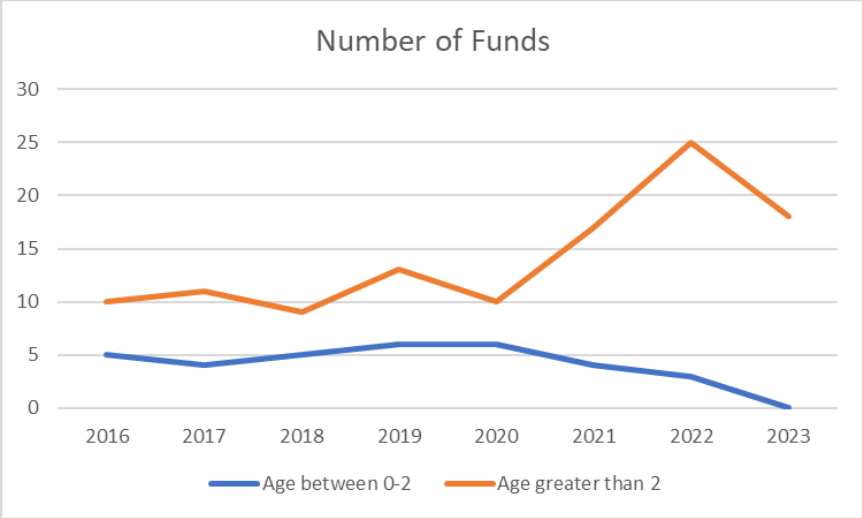
Even without the especially poorly performing PE fund, the drop in average Net IRR in 2018 and 2019 remains (**Figure 59**). We further explore the drop in those years by investigating the number of funds by age in each year.

Figure 60 shows that the number of funds with an age greater than 2 years increases and the number of funds between 0 and 2 years decreases after 2020. Since funds with an age greater than 2 outperform funds with an age between 0 and 2, this pattern could at least partially explain the below-average social infrastructure PE fund performance in 2018 and 2019.

Next, we compare the performance of social infrastructure PE funds to the performance of total PE funds (**Figure 61**). The graph below shows the median IRR of total PE funds by vintage year. The chart is drawn directly from Ginolhac (2024).

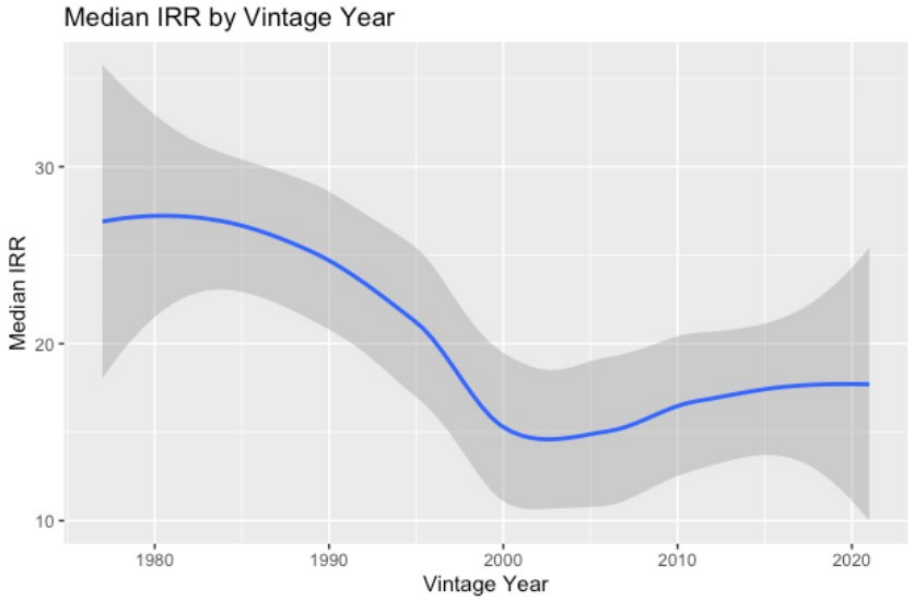
Since the chart (**Figure 61**) provides PE funds' median IRR by vintage year, and we show the historical trend of social infrastructure PE funds' IRR, the trends are not directly comparable. However, by comparing the median IRR of the funds, we get a sense that social infrastructure PE funds slightly underperform.

Figure 60. Number of Social Infrastructure PE Funds by Age of Fund



Source: CIPR
Primary Data Source: Preqin

Figure 61. Mean IRR by Vintage Year, All PE Funds

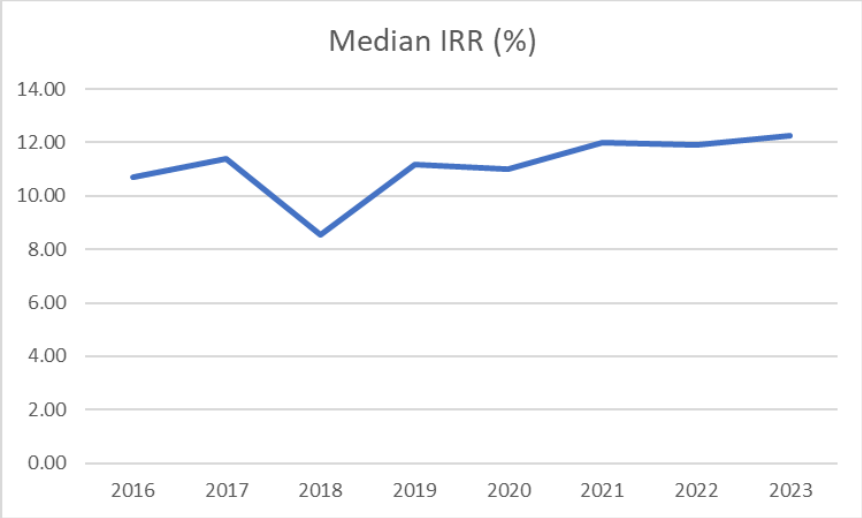


Source: Ginolhac (2024)

Figure 62 shows the median IRR of social infrastructure PE funds. The median of social infrastructure PE funds' IRRs is around 11 percent, while the median IRRs of total PE funds are around 16 percent. Therefore, we can conclude that all else equal, PE funds in the aggregate outperform social infrastructure funds. Of course, this conclusion holds only in the aggregate. Some infrastructure funds perform especially

well, while some other PE funds perform very poorly. Careful due diligence is a must.

Figure 61. Median IRR for Social Infrastructure Funds by Year



Source: CIPR
Primary Data Source: Preqin

G. Mortgages

As stated in Section III.C.2 of the document, mortgages are a substantial part of insurers' portfolios, exceeding in dollars the aggregate holdings of municipal bonds. Earnings from mortgages come from the spread between what the borrowers pay in interest and what the lender receives in interest.

Figure 62 shows the interest rate spread between the average 30-year mortgage rate in the United States and the market yield on a ten-year constant maturity Treasury security.[117] The spread for commercial multifamily would be expected to be larger, but these spreads are determined on a case-by-case basis, and there is no average commercial multifamily interest rate to report. Over the last 10 years, the spread has ranged between 1.3 percent (May 2021) and 3.1 percent (June 2023).

An important measure of the quality of social impact mortgages is their delinquency rates vis-à-vis delinquencies on insurer-held mortgages overall. These data are presented in **Table 15**. Delinquencies are modestly *lower* on social-impact mortgages. The values are sufficiently close that we can reasonably say there is little

[117] In many cases mortgage rates are determined as a spread over the ten-year constant maturity Treasury.

difference in mortgage delinquencies between standard mortgages in which insurers may invest and mortgages in which they may invest as a social impact investment.

Figure 62. Spread Between Average 30-Year Mortgage Rate and Market Yield on a 10-Year Constant Maturity Treasury Security

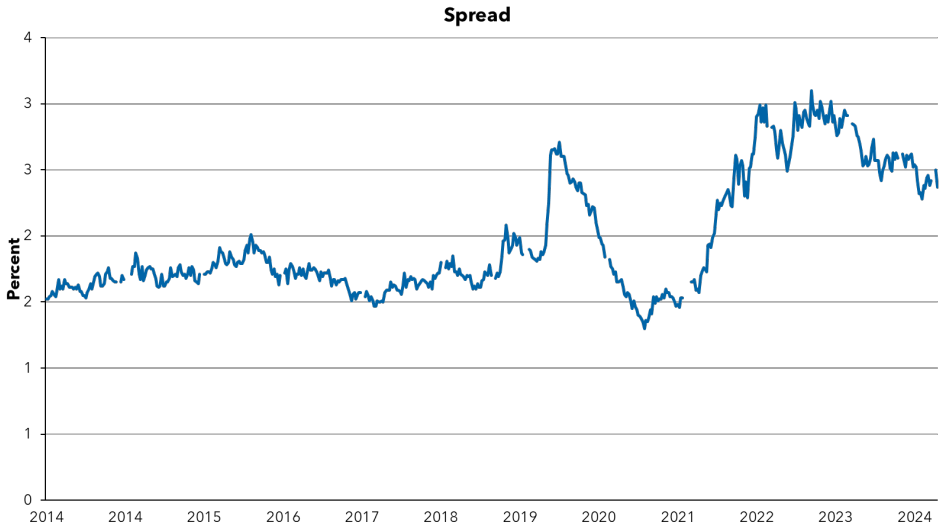


Table 15. Credit Standing of Mortgage Loans

	Social Impact		Not Social Impact	
	BACV ($M)	Percent	BACV ($M)	Percent
Good Standing	162.70	99.66	6,405.39	99.42
Overdue Interest > 90 Days	0.23	0.14	12.12	0.19
Restructured	0.26	0.16	18.26	0.28
In Foreclosure	0.06	0.04	7.22	0.11
TOTAL	163.24	100.00	6,442.97	100.00

Summary and Conclusions

There are myriad factors for insurers to consider in making general fund and balance sheet investments. Among these are risk-adjusted return, liquidity, diversification, and duration matching. Increasingly, insurer-investors are also seeking social impact. Additional investment considerations in making social impact investments are flexibility around the intentionality of the investments, capacity to scale investments, and any trade-offs with traditional investment objectives.

We show that the U.S. insurance industry's exposure to social impact investments (SII) was valued at $158.3 billion in 2020, accounting for 2.8 percent of total cash and

invested assets. This exposure highlights a growing interest among insurers to align investment portfolios with social impact while achieving financial objectives.

Social impact investments are heavily concentrated in sectors addressing affordable housing, small business development, and community assets, reflecting the industry's focus on initiatives that create long-term value for underserved communities. Investments in municipal bonds accounted for the largest share across all insurance lines.

The financial performance of social impact investments within the insurance industry varies, with each asset class offering a different balance of risk and return. Municipal bonds, CDFI loan funds, and private debt instruments each contribute uniquely to the broader goals of social impact investing. By aligning financial returns with social outcomes, the insurance industry can play a pivotal role in driving economic and social progress in underserved communities, while also meeting its own financial objectives.

The financial performance of social impact investments within the insurance industry demonstrates that meaningful social outcomes can be achieved without compromising financial returns. Each asset class—municipal bonds, Low-Income Housing Tax Credit (LIHTCs) equity funds, CDFI loan funds, mortgages, and private debt instruments—offers a distinct balance of stability, risk, and return. These investments collectively enable insurers to meet their fiduciary responsibilities while advancing societal goals such as affordable housing, economic revitalization, and community development.

Government-backed credit enhancements, tax incentives, and innovative financial tools are essential for mitigating risks and encouraging broader participation. By leveraging these mechanisms, the insurance industry can expand its role as a driver of community and economic development in underserved and marginalized communities.

By aligning financial objectives with social priorities, the U.S. insurance industry is well-positioned to foster systemic change, ensuring long-term portfolio stability while addressing critical social challenges.

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Appendices

Appendix A. List of Filters Applied to MSRB Municipal Bonds Transaction Data (Ang, Bhansali, and Xing [2010])

There are multiple limitations of the MSRB data. Using only MSRB data, we don't have information about the bond type (callable, putable, sinkable, etc.); the coupon type (floating, fixed, or original issue discount [OID]); the issue price and yield; the tax status (federal and/or state tax-exempt, or subject to the Alternative Minimum Tax [AMT]); the issue size; the rating; whether the bond is insured. In the MSRB filed "Description," we can extract some information related to advanced refunded municipal bonds. It contains an indicator of whether the bond is pre-refunded and the price of a transaction.

We provide a list of filters described in Appendix B of Ang, Bhansali, and Xing (2010). For each filter, we identify its applicability given our access to the data and discuss the rationale for its use.

1. Tax Status and State of Issuance
   We apply this filter. Ang, Bhansali, and Xing (2010) obtain tax status of state of issuance information from Bloomberg. The MSRB has a "Security Description" field with a "TAXABLE" marker. Following Ang, Bhansali, and Xing (2010), we exclude municipal bonds with the marker to consider only tax-exempt municipal bonds. The "Security Description" file contains information about the issuer and the state as well.

   Ang, Bhansali, and Xing (2010) consider only bonds that are exempt from federal and state income taxes. Some tax-exempt municipal bonds issued by state and local governments to finance capital projects are classified as private activity bonds and are subject to the AMT. Ang, Bhansali, and Xing (2010) report that these bonds comprise 3.33 percent of all CUSIPS and they exclude them from their analysis. They also limit their bond universe to bonds issued in the 50 states, and thus, they exclude bonds issued in Puerto Rico, the Virgin Islands, and other territories of the U.S. such as American Samoa, the Canal Zone, and Guam. Ang, Bhansali, and Xing (2010) report that bonds issued in these territories constitute less than 0.37 percent of all bonds.

2. High Credit Ratings
   We don't apply this filter.

To focus only on the tax implications of municipal bond trades, Ang, Bhansali, and Xing (2010) focus on bonds of the highest credit classes. They take only bonds rated by S&P in the AAA, AA+, AA, AA-, A+, A, and A- categories. As Ang, Bhansali, and Xing (2010) report many A Grade bonds obtain their credit rating because they are insured by a AAA- rated insurer. They show that slightly over 60 percent of all bonds are insured in the full MSRB sample that they use (from January 1995 to April 2007). The S&P rating is relevant at the time of maturity for bonds that have expired, or for current outstanding bonds at those two dates.

3. Straight Bonds

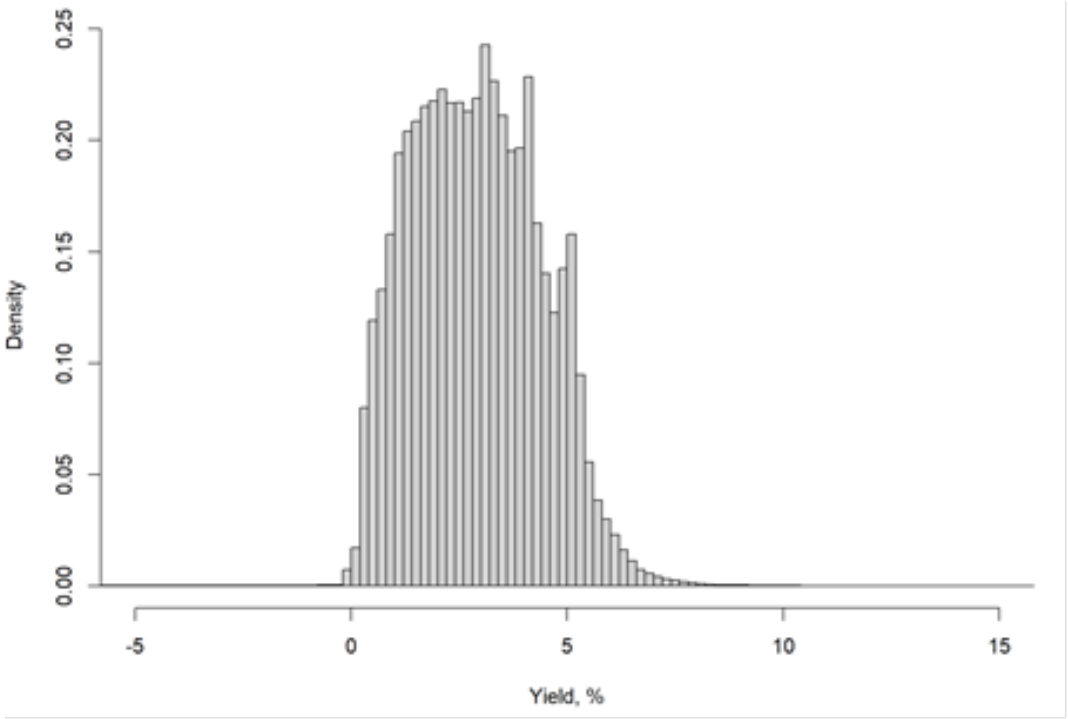
We partially apply this filter. Ang, Bhansali, and Xing (2010) obtain information about the characteristics of bonds from Bloomberg. We don't have access to the Bloomberg dataset.

Ang, Bhansali, and Xing (2010) limit their sample to include only bonds paying fixed coupon rates (94.1 percent of all bonds in their MSRB sample). The MSRB field "Coupon" contains NA values. We assume that they are associated with floating coupon rates and exclude these transactions from our analysis.

They also take only straight bonds with no embedded option features, so all our bonds are fixed maturity paying fixed semi-annual coupons. Ang, Bhansali, and Xing (2010) report that straight municipal bonds constitute 50.35 percent of the bond universe and they generally have shorter maturities than bonds with embedded options. They also report that the average maturity at issue of straight bonds is 6.25 years while the average maturity at issue of option-embedded bonds is 15.75 years. The exclusion of option-embedded bonds is to facilitate their computation of yield-to-maturity and market discounts. Ang, Bhansali, and Xing (2010) note that including bonds with callable or sinking bond features would entail numerically intensive option-adjusted spread computations involving binomial trees to correctly price the embedded options.

As we don't have information about the callability of a bond, we assume that transactions with negative yields and high positive yields are associated with callable bonds and exclude transactions with reported negative yields and transitions with reported yields above 15 percent. Figure A1 below shows the effect of this truncation on the set of transactions that are formed after applying Ang, Bhansali, and Xing (2010) filters.

FigureA1. Distribution of Yields of Transactions Left After Applying Ang, Bhansali, and Xing (2010) Filters, from January 1, 2008 to December 31, 2022



Source: CIPR

Notes: The plot shows the distribution of reported yields of transactions left after applying the Ang, Bhansali, and Xing (2010) filters.

4. Avoiding Newly Issued Bonds
   We apply this filter.

   Green, Hollifield, and Schürhoff (2007b) document significant underpricing in new municipal bond issues and interesting patterns in the aftermarket trading of these bonds between informed and uninformed customers. To avoid the effect of newly issued bonds, Ang, Bhansali, and Xing (2010) exclude all the transactions that happened within 30 days of issuance. Ang, Bhansali, and Xing (2010) note that transactions of newly issued bonds constitute about 25.9 percent of the 15.8 million transactions, reflecting the fact that municipal bond transactions are concentrated during the period right after issuance. However, almost all these transactions are not trades near *de minimis* because there is

little movement in the yield curve over 30 days. Ang, Bhansali, and Xing (2010) obtain nearly identical results when these trades are included in their sample.

5. Maturities Between One and Ten Years
   We exclude bonds with a maturity of less than one year. Since municipal bonds with maturities over 10 years make up about 75 percent of our sample, we do not filter out bonds with maturities exceeding 10 years.

   Ang, Bhansali, and Xing (2010) report that transactions involving straight bonds with maturities longer than 10 years are scarce because most bonds with long maturities are issued with callable or sinking fund provisions. Ang, Bhansali, and Xing (2010) use only transactions with a maturity shorter than 10 years in their analysis. Ang, Bhansali, and Xing (2010) also take bonds only with maturities greater than one year because long-term capital gains rates apply only to securities held longer than one year and there is no market discount for bonds with a maturity less than one year.

6. Removing Very Small Trades and Outliers
   We apply these filters.

   To avoid the effect of extremely small trades, Ang, Bhansali, and Xing (2010) exclude all transactions with par amounts traded less than $10,000. Finally, they take only transactions with prices between $80 and $130, and bonds with coupon rates from 1 percent to 20 percent.

Appendix B. Negative Yields and Callability of a Bond

Understanding Negative Yields in Municipal Bonds

In the world of municipal bonds, negative yields are a phenomenon that can initially seem counterintuitive. A yield represents the return an investor can expect to earn if the bond is held to maturity. Typically, investors expect to earn a positive yield, meaning they will receive more money over time than they initially invested. However, under certain conditions, yields can turn negative, indicating that an investor will receive less money over the bond's life than they initially paid.

What Causes Negative Yields?

Negative yields often occur in the context of callable bonds. Callable bonds allow the issuer to redeem the bond before its maturity date, usually at a predetermined call price. This feature introduces additional complexities and risks for investors, primarily because the issuer is likely to call the bond when it is advantageous for them, such as when interest rates fall.

Here's how negative yields can arise:

- High Purchase Price Relative to Call Price: If an investor purchases a bond at a price significantly above its call price, and the bond is called early, the investor will face a loss. For example, if a bond is bought for $115 and can be called at $100, the investor loses $15 if the bond is called.
- Short Time to Call: The shorter the period between the purchase and the call date, the greater the annualized impact of this loss. This is because the loss is spread over a shorter time, making the annualized yield more negative.
- Falling Interest Rates: When market interest rates drop, issuers are more likely to call bonds to reissue them at lower rates. This increases the probability of bonds being called, which can push their yields into negative territory as investors factor in the higher likelihood of early redemption at a lower price.

Example of Negative Yield Calculation

To make this more tangible, consider the following example:

Imagine you purchase a municipal bond for $115, which pays an annual interest (coupon) of $2 (or 2 percent). The bond has a special feature allowing the issuer to call it at any time by paying you $100. If the issuer decides to call the bond after 30 days, you receive $100 instead of the $115 you paid.

Here's the breakdown:

- Purchase Price: $115
- Call Price: $100
- Interest Earned in 30 Days: Approximately $0.16 (since $2 per year translates to about $0.16 in 30 days)
- Total Received after 30 Days: $100 (call price) + $0.16 (interest) = $100.16
- Loss: $115 - $100.16 = $14.84

When this loss is annualized, it translates into a significant negative yield because you lose $14.84 over a very short period. The annualized yield calculation takes this short-term loss and projects it over a full year, resulting in a large negative number.

The figure below (**Figure B1**) (next page) (shows how yields change as the call date approaches for a bond with the following characteristics:

- Coupon Rate: 2 percent
- Current Price: $115
- Call Price: $100
- Maturity Date: January 1, 2030

Implications for Investors

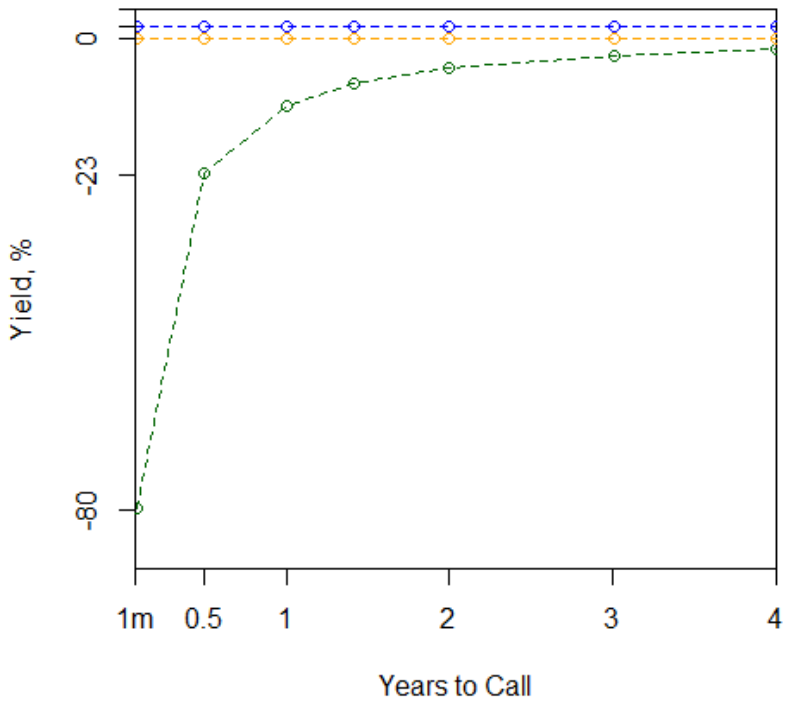
The occurrence of negative yields in callable bonds, particularly in the municipal bond market, is a critical consideration for investors. These yields reflect the added risks and potential disadvantages of early redemption. For investors, it is essential to factor in the callability feature when evaluating bond investments, as it can significantly impact the overall return profile.

Investors need to carefully analyze the terms of callable bonds and consider the likelihood of the bond being called, especially in a declining interest rate environment. Understanding these dynamics helps investors make more informed decisions and better manage the risks associated with callable bonds.

For further details and a more technical discussion on negative yields in municipal bonds, please refer to the MSRB Negative Yield Bonds Factsheet.[1]

[1] https://www.msrb.org/sites/default/files/2023-03/MSRB-Negative-Yield-Bonds-Factsheet.pdf

Figure B1. Years to Call vs. Yield-to-Call (Green Line), Yield-to-Maturity (Orange Line) and Yield-to-Trade (Blue Line) of a Bond



Source: CIPR

Notes: The plot shows simulation results that illustrate the change in yield-to-call (green line), yield-to-maturity (orange line), and yield-at-trade (blue line) with the change in "years to call" of the same bond. We took a 5% coupon bond that matures on Jan 1, 2030, with the current price of $115. We calculate its annualized yields as if they are callable at par ($100) in 1 month, 6 months, 1, 2, 3, and 4 years from today.

The plot highlights that as the call date nears, the Yield to Call (green line) can become increasingly negative due to the high likelihood of the bond being called at a lower price than its current market value. Conversely, the Yield to Maturity (orange line) remains relatively stable as it reflects the yield if the bond is held until its maturity date without being called. The Yield-at-Trade (blue line) shows the initial yield based on the coupon rate and current price.

Appendix C. Numerical Example of Calculating Yield to Maturity of Debt with Guarantee and Yield to Maturity of Debt Without Guarantee

Assume the following data about a private debt:

- Face Value or Principal: $5,000,000
- Issued today: 07/23/2024
- Maturity date: 07/23/2025
- Coupon rate: 6.5 percent, paid annually for simplicity
- Industry SIC code of an issuer: 8399 – Social Services

We assume that:

- Recovery rate in the case of default: 99 percent
- Annual risk-free rate: 1.5 percent

We use public data on the annualized volatility of underlying assets of the issuer of the debt. We take:

- Annualized volatility of underlying assets from the Fama-French website.[2]
- for our industry SIC code: 0.23

Step-by-Step Calculation

1. Calculate Maturity in years:

$$\text{Maturity in years} = \frac{07/23/2025 - 07/23/2024}{365} = 1\ year$$

2. Strike Price or Exercise price of a put option:

$$\text{Strike Price} = \text{Principal} \times \text{Recovery Rate} = 5{,}000{,}000 \times 99\% = 4{,}950{,}0000$$

3. Annual interest payments:

$$\text{Annual interest payments} = 5{,}000{,}000 \times 6.5\% = 325{,}000$$

[2] Our industry, SIC 8399 – Social Services, corresponds to the volatility of a group 48 Fin on the Fama-French website. Annualized volatility of the issuer's underlying assets in the 48 Fin group (Standard Deviation of value-weighted monthly stock returns from 1970 to 2023 * Square Root of 12) is 0.23

4. Calculate present values of implicitly risk-free (with guarantee) coupon payments, principal, and the value of the guarantee itself:

- PV of Risk-free Coupon Payment:

$$\text{PV(coupons)} = \frac{\text{Annual Interest Payments}}{1+\text{risk-free rate}} = \frac{325{,}000}{1+0.015} = 320{,}1977\ .$$

- PV of Risk-free Principal:

$$\text{PV(principal)} = \frac{\text{Principal}}{1+\text{risk-free rate}} = \frac{5{,}000{,}000}{1+0.015} = 4{,}926{,}1088$$

5. PV of Value of Guarantee (Value of European Put Option):

To start, we calculate d1 and d2 parameters:

$$d1 = \frac{\log\left(\frac{\text{Principal}}{\text{Strike Price}}\right)+\left(\text{risk-free rate}-\text{coupon rate}+0.5\cdot\text{volatility of assets}^2\right)\times\text{Maturity in years}}{\text{volatility of assets}\times\sqrt{\text{Maturity in years}}} s\}\}\}$$

$$d2 = d1 - \text{volatility of assets} \times \sqrt{\text{Maturity in years}}$$

Plugging in the values:

$$d1 = \frac{\log\left(\frac{5000000}{4950000}\right)+0.015-0.062+0.5\cdot 0.2321^2}{0.2321\cdot\sqrt{1}} = \frac{-0.0110116641}{0.2321} \approx -0.04744$$

$$d2 = -0.04744 - 0.2321 \approx -0.27954$$

6. Refer to Cumulative Normal distribution tables to find $N(d1)$ and $N(d2)$ that correspond to $d1 = -0.04744$ and $d2 = -0.27954$:

$N(d1) = N(-0.04744) = 0.5189$

$N(d2) = N(-0.27954) = 0.6093$

7. Calculate the PV value of a put option:

$P = \text{Strike price} \cdot e^{-\text{risk-free rate}\times\text{Maturity in years}} \cdot N(d2) - \text{Principal} \cdot e^{-\text{coupon rate}\times\text{Maturity in years}} \cdot N(d1)$

$P = 4{,}926{,}108 \cdot e^{-0.015\times 1} \cdot 0.6093 - 5{,}000{,}000 \cdot e^{-0.065\times 1} \cdot 0.5189 = \ 530{,}500$

8. Calculate the PV value of debt with guarantee:

PV value of debt with guarantee
= PV of Risk-free Coupon Payments + PV of Risk-free Principal}
PV value of debt with guarantee $= 320{,}197 + 4{,}926{,}108 = 5{,}246{,}305$

9. Calculate PV value of debt without guarantee:

PV value of debt without guarantee
= PV value of debt with guarantee − PV of Value of Guarantee}
PV value of debt without guarantee $= 5{,}246{,}305 - 530{,}500 = 4{,}715{,}805$

10. Calculate the debt price with a guarantee per $100 face value:
Debt Price with Guarantee $= \frac{\text{PV value of debt with guarantee}}{\text{Principal}} \cdot 100 = \frac{5{,}246{,}305}{5{,}000{,}000} \cdot 100 = 104.933$

11. Calculate the debt price without guarantee per $100 face value:
Debt Price w\o Guarantee $= \frac{\text{PV value of debt without guarantee}}{\text{Principal}} \cdot 100 = \frac{4{,}715{,}805}{5{,}000{,}000} \cdot 100 = 94.322$

12. Calculate Yield-To-Maturity (YTM):
- YTM with Guarantee: $104.93 = \frac{100+100\times 0.065}{1+\text{YTM}}$

YTM $= 0.015$ or 1.5%

- YTM without Guarantee:
YTM $= 0.081$ or 8.1%

Appendix D. Sample Equity Fund Investment Benefits Schedule

Syndicator	**XYZ**
Fund	**ABC Fund I**
Benefits as of	1/2/2020
Close date	11/30/2017
After Tax IRR	5.75%
Closing Target IRR	5.70%
Closing Price Per Credit	$ 0.99
Tax Rate	21%
% 0f 8609s issued	100%

Year	Gross Capital Contributed	Reserves	Fees	Net Capital	Distributions	Federal LIHTC	Federal Historic Credits	Federal Energy Credits	Federal Other Credits	Total Federal Credits	State LIHTC Credits	State Historic Credits	State Other Credits	Gross / Net (tax effected)	Taxable Income / (Loss)	Gain / (Loss) on Disposition	R
2017	1,304,232	0	1,000,000	304,232		0	0	0	0	0	0			Gross	(300,000)	0	
2018	2,794,702			2,794,702		615,634	355,556	0	0	971,190	925,128			Gross	(1,241,631)	0	
2019	18,998,217			18,998,217		2,191,646	281,595	0	0	2,473,241	987,253			Gross	(1,644,769)	0	
2020	9,665,884			9,665,884		3,372,301	0	0	0	3,372,301	867,253			Gross	(1,294,345)	0	
2021	443,743	31,123		412,620		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,237,126)	0	
2022	32,544	32,544		0		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,223,074)	0	
2023	209,602	38,889		170,713		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,190,979)	0	
2024	260,582	39,867		220,715		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,141,548)	0	
2025	34,536	34,536		0		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,131,225)	0	
2026	211,634	211,634		0		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,097,406)	0	
2027	35,931	35,931		0		3,406,224	0	0	0	3,406,224	62,125			Gross	(1,000,000)	0	
2028	36,650	36,650		0		2,790,590	0	0	0	2,790,590	62,125			Gross	(1,000,000)	0	
2029	37,383	37,383		0		1,214,570	0	0	0	1,214,570	0				(945,334)	0	
2030	38,131	38,131		0		33,922	0	0	0	33,922	0				(835,798)	(360,000)	
2031	38,893	38,893		0		0	0	0	0	0					(766,314)		
2032	39,671	39,671		0		0	0	0	0	0					(755,953)	(4,000,000)	
2033	40,465	40,465		0		0	0	0	0	0					(500,000)	(12,000,000)	
2034	16,960	16,960		0		0	0	0	0	0					(250,000)	8,500,000	
2035	0			0		0	0	0	0	0							
Totals	34,239,760	672,677	1,000,000	0		34,062,228	637,151	0	0	34,699,379	3,276,634				(17,555,502)	(7,860,000)	

Source: Affordable Housing Investors Council (AHIC)