



HOUSING TAX CREDIT INVESTMENTS:

Investment and Operational Performance

A CohnReznick LLP Report
Tax Credit Investment Services
NOVEMBER 18, 2019



CohnReznick 



This is the eighth in a series of periodic reports issued by CohnReznick LLP that addresses the performance of properties financed with federal low-income housing tax credits (housing tax credits). To compile and analyze the data required for the assessment, CohnReznick requested the participation of every active housing tax credit syndicator and the nation's largest institutional direct investors. Thirty-three housing tax credit syndicators and two direct investors participated in the survey. A complete list of study participants, as well as leading industry associations and brokerage firms that either provided valuable feedback or supported the study, appears on the Acknowledgments page. This effort would not have been possible without the support of these organizations. CohnReznick analyzed data collected from more than 21,000 housing tax credit properties. For a more extensive discussion of the methodology employed to collect and analyze property data, please refer to Appendix A. We are grateful to the housing credit industry for its continuing support of CohnReznick's campaign to promote a deeper understanding of the housing tax credit program, its strengths, and the critical role it plays in the development of affordable housing.

COHNREZNICK LLP

November 18, 2019

DISCLAIMER

CohnReznick has used information gathered from the housing credit industry participants listed on the Acknowledgments page of this report to compile this study. The information provided to us has not been independently tested or verified and it may include estimations, approximations, and assumptions. We have relied exclusively on the study participants for the accuracy and completeness of the information contained herein. Accordingly, we cannot guarantee the accuracy or completeness of any of the information contained herein.

Any information contained in this report is not intended as a thorough, in-depth analysis of specific issues. Nor is it sufficient to avoid tax-related penalties. The report has been prepared for informational purposes and general guidance only, and does not constitute professional advice. You should not act upon the information contained in this report without obtaining specific professional advice particular to your individual situation. No representation or warranty (express or implied) is made as to the accuracy or completeness of the information contained in this publication, and CohnReznick LLP, its members, employees and agents accept no liability, and disclaim all responsibility, for the consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this report or for any decision based on it. Reproduction of any of the information contained herein for any purpose is strictly prohibited.



ACKNOWLEDGMENTS







TABLE OF CONTENTS

Disclaimer2

Acknowledgments3

Executive Summary6

Introduction.....8

Fund Investment Performance 14

Property Operating Performance 34

Income and Expense 46

Operating Performance by Category 54

Underperformance Deep Dives 80

Foreclosure..... 84

Mixed-Income Housing Credit Portfolio 92

Key Housing Credit Performance Influences..... 99

Appendix A: Study Methodology & Data Appendix 104

About Us 110



EXECUTIVE SUMMARY

The federal low-income housing tax credit (LIHTC) is the most important program in the United States for creating and rehabilitating affordable housing. Every year, the housing tax credit program finances the construction or rehabilitation of more than 75,000 affordable housing units that support roughly 96,000 jobs and generate \$3.5 billion in tax revenue.¹ No other local, state, or federal program comes close to the housing credit program's level of production.

CohnReznick produces the only comprehensive industry track record that surveys the owners of properties financed with housing tax credit equity. Through its 30-plus-year history, the housing tax credit has forged an impressive record in building affordable housing. Most properties financed with housing tax credits are fully occupied, with healthy financial performance and extremely low foreclosure rates.

In 2018, the surveyed portfolio, which contained more than 21,000 properties, reported, on a median basis, 97.8% physical occupancy, 1.40 debt coverage, and more than \$700 per unit per annum net cash flow (cash flow available after paying for operating expenses, mandatory debt service, and required replacement reserve contributions).

In years 2015-18, on average \$15.2 billion in equity was funneled into housing credit-financed developments annually. Beyond the deep, positive impact on local communities, housing credit

investments have proven to be a safe and sound investment option for institutional investors. On a weighted-average basis, through 2018 and not considering any impact from the *Tax Cuts and Jobs Act* (TCJA) of 2017, survey respondents reported a positive 5.2% variance between actual and projected yields.

Investors and syndicators risk-rate properties through a set of defined performance measures to ensure that problem or “watch list” properties are closely monitored. Watch list criteria can vary; however, most respondents have adopted the criteria established by the Affordable Housing Investors Council (AHIC) as a baseline for measuring underperformance. Risk ratings are assigned to properties based on these criteria using an “A”

Every year, the housing tax credit program finances the construction or rehabilitation of more than 75,000 affordable housing units that support roughly 96,000 jobs and generate \$3.5 billion in tax revenue. No other local, state, or federal program comes close to the housing credit program's level of production.

¹ <http://rentalhousingaction.org/>



through “F” grading scale. Properties rated “C” or worse are considered watch list properties. Across the national portfolio, less than 11% of properties were on the watch list as of year-end 2018, which is down significantly from previous years.

Finally, a remarkably low number of housing tax credit properties have fallen victim to foreclosure throughout the program’s history. The respondents to CohnReznick’s survey report that they have lost approximately 170 to foreclosure, including circumstances in which a deed may have been tendered in lieu of foreclosure. Compared to the total number of properties syndicated to date by the respondents, this works out to a 0.65% cumulative foreclosure rate. Housing credit syndicators expend effort to minimize the financial impact on investors, which is evidenced by the fact that, on average, foreclosed properties were in their 11th year of credit delivery period when lost to foreclosure.

Several factors support the housing tax credit program’s strong track record:

- The growing need for affordable housing: As impactful as the program is, its production power is limited by statutory authorization. Housing tax credit production is therefore unable to keep up with the rising demand for affordable housing. Virtually all housing tax credit properties are fully occupied net of normal turnover, many with lengthy waiting lists. From an operating performance perspective, it is not uncommon to see a favorable variance between the actual

Across the national portfolio, less than 11% of properties were on the watch list as of year-end 2018, which is down significantly from previous years.

and underwritten vacancy rate assumptions, which provides a cushion against unexpected spikes in operating expenses or other factors that could otherwise stress a property’s operating performance.

- The efficiency brought by the public-private partnership (P3) structure: As more fully described in the introduction, the housing tax credit program has proved to be the most efficient capital subsidy for creating affordable housing at scale. The program does so by leveraging private capital and operating under a sophisticated P3 model, where stakeholders are aligned to achieve common goals.
- The industry’s collaborative efforts to enhance underwriting and asset management quality: This is best evidenced by the progression of the industry’s collective operating performance statistics during the past decade. Only 5.1% of housing tax credit properties (by net equity) were less than 90% occupied in 2018. Only 15.6% of the properties did not achieve break-even operations in 2018, significantly down from 35% in 2005. CohnReznick is proud of and committed to supplying the industry’s benchmarking data to further this trend.

INTRODUCTION

Congress created the low-income housing tax credit program in 1986 as part of a comprehensive federal tax code reform. Adopted amid dramatic tax code changes, it was significantly improved by the Mitchell-Danforth Task Force in 1989, and made permanent in 1993. The program has enjoyed strong bipartisan support in the United States Congress. Strong support from Democrats and Republicans alike is largely attributable to the program's design, which is built upon public-private partnerships, affordability goals that target the working poor, and funding through tax (vs. budget) expenditures.

Moreover, the program is the most successful resource for creating, rehabilitating, and preserving affordable housing in the U.S. [The Affordable Rental Housing A.C.T.I.O.N.](http://rentalhousingaction.org/) group estimated that since inception through 2017 more than 3.2 million affordable apartment units have been built under the housing tax credit program, and those units have provided homes for roughly 7.4 million low-income families, seniors, veterans, Native Americans, farmworkers, and people with disabilities, which they otherwise could not afford.²

As of the date of this report, *The Affordable Housing Credit Improvement Act of 2019* (AHCIA) enjoyed strong bipartisan support, garnering co-sponsorship from more than 40% of all members of Congress. The bill aims to, among other improvements, expand the 9% housing credit allocation by 12.5% annually for four years, and enact a minimum 4% rate for tax-exempt, bond-financed 4% credit developments. The AHCIA is estimated to incentivize the building of more than 500,000 additional affordable homes over the next decade, and generate \$48.5 billion in wages and business income, \$19.1 billion in additional tax revenue, and 510,000 jobs.³

The housing tax credit program is already a remarkable success story. In some ways, the national housing credit property performance discussion has become predictably favorable to readers of our annual reports, many of whom are now familiar with the reasons behind the continued strong performance: Explanations include an extreme shortage of affordable housing across the country, favorable interest rates and refinancing opportunities, improved operating expense underwriting, and continued refinement and sophistication of property management and oversight.

Before delving into trends and the reasons behind the strong performance, it is helpful to examine how the program works.

² <http://rentalhousingaction.org/>

³ Ibid.

How do housing tax credits work?

The IRS sets rules through the Internal Revenue Code, namely Section 42, while administration of the program resides primarily with the state credit-allocating agencies. Ultimately, it is the state credit-allocating agencies that have the authority to determine which projects should be awarded housing credits pursuant to a set of highly transparent procedures. Because of the local administration, the program has proven to be highly flexible and responsive to the changing housing needs of each state.

State-by-state competition for 9% tax credits is often scored using a point system reliant on objective criteria defined by housing officials in a publicly available qualified allocation plan. In many states, the ratio of submitted applications for 9% tax credits to the credits the state distributes is 3:1. Because of the highly competitive reservation process, many developers must submit and resubmit applications, modifying their development plans to better align their project proposal with stated policy goals, ultimately improving the competitiveness of their project, before receiving a credit reservation.

Because developers need capital to finance their housing credit developments (and because they typically have limited to no use for the tax benefits), developers assign the rights to the future benefits (housing credits and losses) generated by the properties in exchange for cash. Developers monetize the housing tax credit and other tax benefits with private investors to raise the equity capital to build the affordable housing developments. Private investors also receive an ownership stake in the planned community. For roughly 10 years after the construction of the affordable housing development is completed, the private investor will receive tax credits at an agreed-upon rate. The affordable housing property must be maintained in accordance with the rules of the housing tax program through a 15-year compliance period for the investor to keep all the tax credits. If the property fails to provide safe, affordable housing, the investor could lose unclaimed tax credits and be forced to repay previously claimed tax credits.

In the housing credit equity market, investors choose between two primary investment approaches: direct or syndicated

investments. Under a direct investment model, an investor directly owns a limited partner or nonmanaging member interest in a partnership that in turn owns an underlying property; the developer or an affiliate typically assumes the general partner or managing member role. The direct investment approach is typically feasible only for investors that have sufficient internal resources dedicated to the acquisition, underwriting, and asset management of housing tax credit investments. Consequently, direct investment is favored by a handful of large institutional investors. In recent years, though, we have witnessed an increasing level of participation from regional or local banks driven by their existing developer client relationships, strong *Community Reinvestment Act* (CRA) motivation in neighborhoods that they serve, and desire to cross-sell bank products.

Syndicated investments, on the other hand, are sourced, organized, and managed by third-party intermediaries known as syndicators. In the syndicated model, investors own the limited partner or nonmanaging member interests in funds organized by the syndicator, and the fund in turn owns the limited partner or nonmanaging member interests in underlying property partnerships. The two-tier structure provides not only scale and specialty for investors' participation but also risk diversification. Based on CohnReznick's survey, we estimate that, in recent years, roughly 70% of all housing credit investments were acquired through syndication.

How are housing credit projects financed?

For most of the past 15 years, the demand for housing credit investments has exceeded the supply. The demand for credits has driven the price at which they trade from \$0.42 per \$1.00 of housing tax credits in the early years of the program to close to \$1.00 per \$1.00 of housing tax credits in recent years, prior to a downward shift from the TCJA of 2017 and resulting lower corporate tax rate. Following an initial period of disruption, housing credit pricing has averaged \$0.92 annually since 2017. The steady progression in housing credit prices has changed the "capital stack" in financing these developments. It is not uncommon for 9% housing credit projects to be financed with 75%-80% investor equity, with the balance coming from conventional mortgage financing and, in some cases, "soft" financing from government lenders.



This unique combination of capital sources allows housing credit properties to be financed with low levels of “must pay” hard debt. Ultimately, the limited use of leverage is what allows developers to rent housing credit-financed apartments to tenants who could otherwise not afford to live in safe, decent, affordable housing. It is for this reason that the housing credit program is referred to as a capital subsidy.

How does the program’s structure efficiently use the resources?

The housing tax credit program has proved to be the most efficient capital subsidy for creating affordable housing at scale. State allocating agencies are statutorily obligated to award only enough housing tax credits to make potential developments financially feasible, and the agencies have become very effective at ensuring that the projects to which they award housing credits are not over-financed.

In addition to the underwriting that housing credit projects undergo at the state agency level, these developments are underwritten by lenders, investors, and the syndicators who acquire, structure, and asset-manage the investments for institutional investors. These players typically have sophisticated real estate-underwriting platforms that initially supported conventional multifamily or other types of real estate assets. By leveraging their existing underwriting platforms, recruiting talented real estate professionals, and using similarly rigorous underwriting criteria (while acknowledging the uniqueness of this asset class), the

affordable housing industry has made significant progress in accurately forecasting rental income and operating expenses.

In addition to generating tax equity, housing tax credit investments attract private capital from debt providers that would otherwise be reluctant to lend to affordable housing projects. While the debt coverage ratio, typically 1.15:1.20, affords a modest buffer to break even, the lenders that operate in this space understand that the probability of severe underperformance is very low, as illustrated by the program’s long-term track record.

Over time, numerous mechanisms have been built into the development and management processes to hold different participants accountable for their performance, such as payment and performance bonds from general contractors, development completion guarantees, operating deficit guarantees and various tax credit guarantees from developers, and compliance and long-term use restriction requirements for all parties.

How much does the housing tax credit program cost?

Unlike most other tax expenditures, the cost of the housing tax credit program can be calculated with precision because the program’s funding authority is subject to a volume cap. The Congressional Joint Committee on Taxation estimated the costs of more than 230 tax expenditures for fiscal years 2016-20. The housing tax credit program does not rank among the 25 most expensive tax expenditures for the federal government.⁴

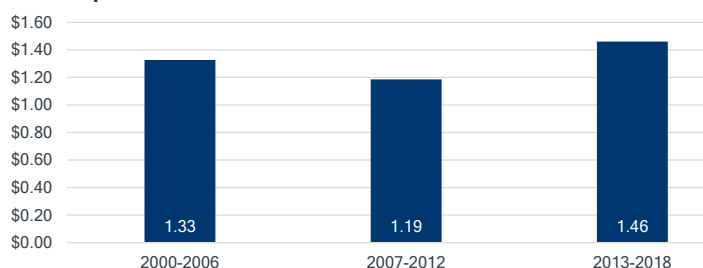
⁴ Joint Committee on Taxation; Estimates of Federal Tax Expenditures for Fiscal Years 2016-20; Jan. 30, 2017; JCX-3-17



More importantly, the cost of the housing tax credit program cannot be fully understood without the following context:

- Housing tax credit investments attract private capital from equity investors and debt providers that might otherwise be reluctant to invest in or lend to affordable housing projects. The following graph illustrates how each dollar of housing tax credit has translated into additional dollars of private funding sources since 2000.⁵

Median Dollars of Additional Private Equity and Debt Raised per Dollar of Credit Allocated



- By the design of the program, underwriting and asset management responsibilities (and therefore costs) are effectively shared by syndicators, investors, and lenders.
- The program's proven track record, including a 0.65% cumulative foreclosure rate, speaks to the extremely low "bad" debt cost of government tax expenditure.

Who invests in housing credit properties?

Since the mid-1990s, the equity market for housing tax credit investments has been predominantly composed of large, publicly traded companies, most of which are in the banking and financial services sector. As investors and regulators have become increasingly confident in the financial performance of housing tax credit properties as an asset class, the housing tax credit program has become more dependent on the banking sector as a highly reliable source of equity to meet its capital needs. This has been a largely favorable development because banks, for example, filled most of the equity gap created when Fannie Mae and Freddie Mac last exited the housing credit market in 2007 and 2008.

CohnReznick estimates that on average, approximately \$15.2 billion of capital was committed to housing tax credit investments in the past three years, and that the CRA-motivated capital was the source for approximately 73% of that amount. The recently returned "duty-to-serve" investors Fannie Mae and Freddie Mac are really in their own category, falling neither into CRA nor economic buckets. The government-sponsored enterprises (GSEs) have a federal mandate to invest in underserved markets that would otherwise not receive investment attention from CRA-motivated investors. Nevertheless, their re-entry in the equity market has reduced CRA investors' share of the total equity market from a high point of approximately 85%.

⁵ The ratio was calculated by dividing the total dollars of hard debt and net equity in a property's capital stack by the total dollar amount of credits allocated to that property. All soft debt was considered public funds to simplify this analysis; however, this assumption understates the funding provided by credits because many soft debts like deferred developer fees, seller notes, and other forms of debt are from private sources.



Multiple factors make housing tax credit investments attractive to banks:

- **Increasing after-tax earnings and lowering the effective tax rate:** Housing credit investors are effectively purchasing a financial asset in the form of a stream of tax benefits (consisting of tax credits and losses associated with depreciation and mortgage interest deductions). Investors do not anticipate receiving cash flow distributions, because housing tax credit properties are generally underwritten to perform slightly above breakeven and developers or syndicators are generally the recipients of any remaining cash flow. Substantially all the investors' returns are expected to be derived from tax benefits.

Banks typically report stable earnings from year to year and are thus predictable federal taxpayers, having sufficient taxable income against which to offset with losses and tax credits. The housing tax credit is earned over 15 years but is claimed over an accelerated 10-year time frame, beginning in the year in which the property is placed in service and units are occupied. The ideal housing credit investor is a company with a track record of consistent growth in earnings that is a regular taxpayer. This has been the profile of the U.S. banking industry for most of the past 30 years, except for rare recession-driven disruptions.

- **Satisfying CRA lending and investment test objectives:** Banks are obligated, under CRA regulations, to make loans, provide services, and make investments in low- to moderate-income neighborhoods in those areas in which they take deposits. As a regulatory matter, banks are obligated to operate in a "safe and sound" manner, which requires them to avoid investments that represent a potential loss of capital. The strong track record of housing tax credit investments

has historically been an ideal match for bank investors with a conservative focus. There are a limited number of qualified equity investments under CRA regulations, and many of these have less attractive yield and/or risk profiles than housing credit investments. Among the available investment options, housing credit investments appear to be a clear investor favorite.

- **Achieving a reasonable/superior risk-adjusted rate of return:** The banks that CohnReznick surveyed have advised us that on a risk-adjusted basis, the yields generated by their housing credit investments are superior to most of their available community development investment alternatives. This is, in part, because banks enjoy a lower cost of funds than other investors, which widens the spread between that cost and the rate of return offered by housing credit investments.
- **Enhancing community relations and searching for cross-selling opportunities:** Notwithstanding their CRA objectives, U.S. banks have become sophisticated housing tax credit investors and have learned to leverage their equity investments to sell other products and services to the development community. Thus, we increasingly see banks cross-selling other services such as construction financing, letters of credit, permanent loans, and other products to the properties in which they invest.

Where are housing credit properties?

Housing credit properties are in all 50 states, in addition to the U.S. territories of Guam, Saipan, Puerto Rico, the U.S. Virgin Islands, and American Samoa.

As an incentive for providing affordable rental housing in impoverished communities and high-cost areas, housing credit investments receive a basis boost if situated in qualified census



tracts (QCTs) or difficult development areas (DDAs). QCTs are areas designated by the U.S. Department of Housing and Urban Development (HUD) where either 50% or more of the households earned less than 60% of the area median income (AMI), or the poverty rate was at least 25%. A DDA is a HUD-defined area with exorbitant construction, land, and utility costs relative to the AMI.

Who lives in housing credit properties?

Every year, housing officials, typically at the state level, reserve housing tax credits for developments that will build or rehabilitate rental units affordable to households earning no more than 60% of the AMI. While 60% AMI is the typical upper-income limit for tax credit residency, a 2015 [report](#) published by HUD's Office of Policy Development and Research found that of the households occupying housing tax credit units:

- 44.5% earned less than 30% of AMI, and 18.2% earned between 30% and 50% of AMI.
- About one-third had at least one member over the age of 61.

Further, we used HUD's LIHTC database, which provides supplemental data about rent and income ceilings, tenancy makeup, and locational aspects of the national housing tax credit portfolio. The HUD database indicated the prevalence of properties specifically targeting disabled and homeless tenants. Housing credit properties targeting disabled and homeless tenants represented 25% and 11% of the national housing credit portfolio, respectively.

Many states have designed their qualified allocation plans to target specific populations that are deemed to be at risk. Needless to say, the housing tax credit program continues to serve the country's most vulnerable populations.





FUND INVESTMENT PERFORMANCE

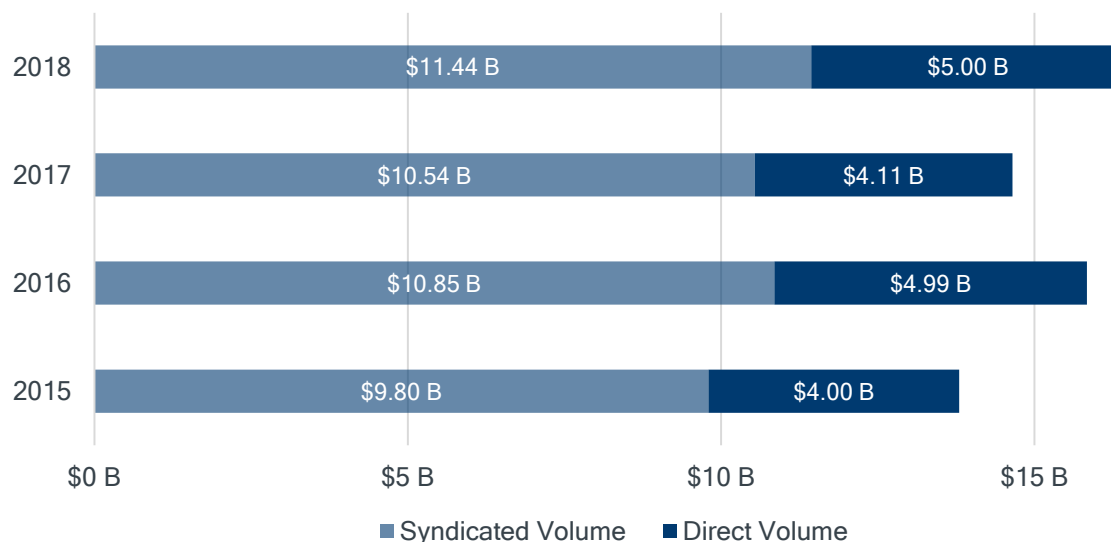
Introduction

In years 2015-18, on average \$15.2 billion in equity was invested in housing credit-financed developments annually. After reaching a historical high in 2016, housing tax credit equity volume decreased by 7.5% in 2017 amid the nearly year-long prospect of reduced corporate tax rates. At \$16.4 billion, 2018 witnessed a new high-water mark for investor equity. The presence of banking institutions motivated by the CRA continued to dominate the investor base. The CRA requires banks to make qualified community development investments in areas in which they collect deposits, and they consequently receive CRA “credit” for doing so. Therefore, one of the primary investment motivations for banks to make

housing credit investments is to earn CRA credit through their housing credit investments. Meanwhile, the return of the two GSEs, Fannie Mae and Freddie Mac, served to provide further diversification to the marketplace, along with other economic-motivated nonbank investors.

At \$16.4 billion, 2018 witnessed a new high-water mark for investor equity.

Total Housing Credit Equity Volume (2015-18)

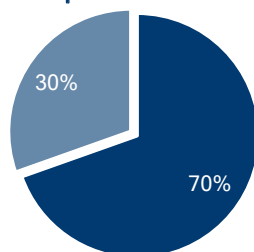




In the housing credit equity market, investors choose between two primary investment approaches: **direct** or **syndicated investments**. Under a direct investment model, an investor directly owns a limited partner or nonmanaging member interest in a partnership that, in turn, owns an underlying property; the developer or an affiliate typically assumes the general partner or managing member role. The direct investment approach is typically feasible only for investors that have sufficient internal resources dedicated to the acquisition, underwriting, and asset management of housing tax credit investments. Consequently, direct investment is favored by a handful of large institutional investors. In recent years, though, we have witnessed an increasing level of participation from regional or local banks driven by their existing developer-client relationships, strong CRA motivation in neighborhoods that they serve, and desire to cross-sell bank products. Syndicated investments, on the other hand, are sourced, organized, and managed by third-party intermediaries known as syndicators. In the syndicated model, investors own the limited partner or nonmanaging member interests in funds organized by the syndicator, and the fund in turn owns the limited partner or nonmanaging member interests in underlying property partnerships. The two-tier structure provides not only scale and specialty for investors' participation, but also risk diversification.

Of the \$16.4 billion total equity closed in 2018, 70% (\$11.4 billion) was syndicated and 30% (\$5.0 billion) was directly invested, a ratio that remained largely consistent in recent years.

Housing Credit Equity Market Composition in 2018



■ Syndicated Volume ■ Direct Volume

The role of the syndicator

There are approximately three dozen active housing credit syndicators, many of which date back to the inception of the housing tax credit program over 30 years ago. Syndicators played an indispensable role in forming an efficient capital market for housing credit investments, growing from roughly \$1 billion per year in the late 1980s to \$4 billion per year in 2000, to more than \$16 billion in 2018.

To accommodate the demand for housing credits and to take advantage of economies of scale, a syndicator acquires equity interests in multiple property partnerships to assemble a fund. Because property developers need capital to finance their housing credit developments (and because they typically have limited use for the tax benefits), the developers assign the rights to the future tax benefits generated by the properties to investors in exchange for cash. In a syndicated fund, a syndicator provides limited initial capital to the developer to secure the property investments, with the intention of syndicating the future stream of benefits generated by the properties to fund investors in exchange for their equity investment. The syndicator originates potential property investments, performs underwriting, and presents the potential investments to investors for approval. In addition to acting as an intermediary between the developer and the investor, the syndicator provides ongoing asset management of the property partnerships, ensuring compliance with housing tax credit regulations and a steady stream of tax benefits to investors. In the years since the inception of the housing credit program, the lasting impact of the syndication model has been to streamline the process of pairing investment equity with property partnerships by syndicators bridging the gap between developers and investors.



Syndicators are compensated for their services through up-front fee payments referred to as the “load,” as well as ongoing asset management fees. A fund’s load is the percentage of the total equity investment used as reimbursement and compensation for various services, including primarily organizational and offering expenses, and acquisition fees and expenses. The size of a fund’s load can vary from fund to fund and can be sensitive to market conditions.

We have observed a 4%–8% load among multi-investor institutional tax credit funds closed in recent years. While there is no direct market standard for syndicator load, it is a highly competitive market, both for acquiring projects and for attracting investor capital. It is not uncommon that syndicators have either had to reduce or defer their loads to attract investor capital.

Fund investment options

There are two primary investment options when working with a syndicator: **proprietary funds** and **multi-investor funds**. Proprietary fund investments are designed to manage the equity capital of a single investor. Multi-investor funds, as their name suggests, look more like mutual funds, since they are organized to raise capital from a group of investors, up to 20 or more. Proprietary funds are typically sought out by single investors with a desire for a higher level of control over the location of the properties they finance. The principal advantage of a multi-investor fund is risk-sharing with other investors.

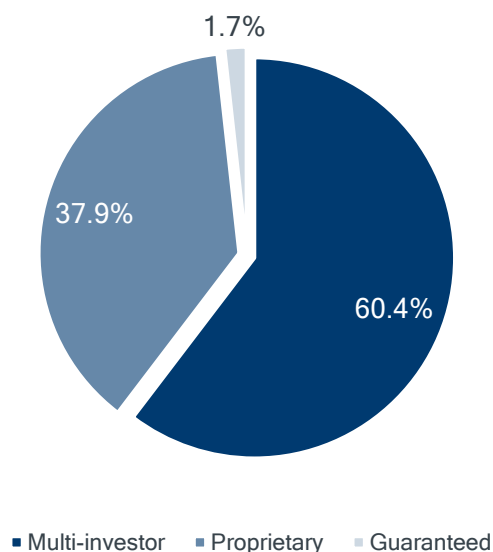
Investors have a third option – they could invest in either a proprietary fund or a multi-investor fund and have their yield (or credits) guaranteed by a creditworthy guarantor (typically an insurance company). The principal benefit of investing on a guaranteed basis was more favorable accounting treatment.

In 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-01, which authorized the so-called proportional amortization method of accounting for qualified housing tax credit investments. In today’s market, guaranteed investments are somewhat limited, in part due to the proportional amortization method essentially putting guaranteed and non-guaranteed investments on the same footing for accounting purposes, and in part because of the challenge to underwrite guarantors.

Included in our survey are more than 1,500 housing tax credit funds that were closed in 2000 or later, characterized by the following:

- Between 2000 and 2018, approximately 60% of the surveyed fund equity was executed through multi-investor fund offerings. In comparison to the industry average, the surveyed sample size reflected a slight underrepresentation of proprietary investments, due to some data providers not consistently reporting on proprietary investments.

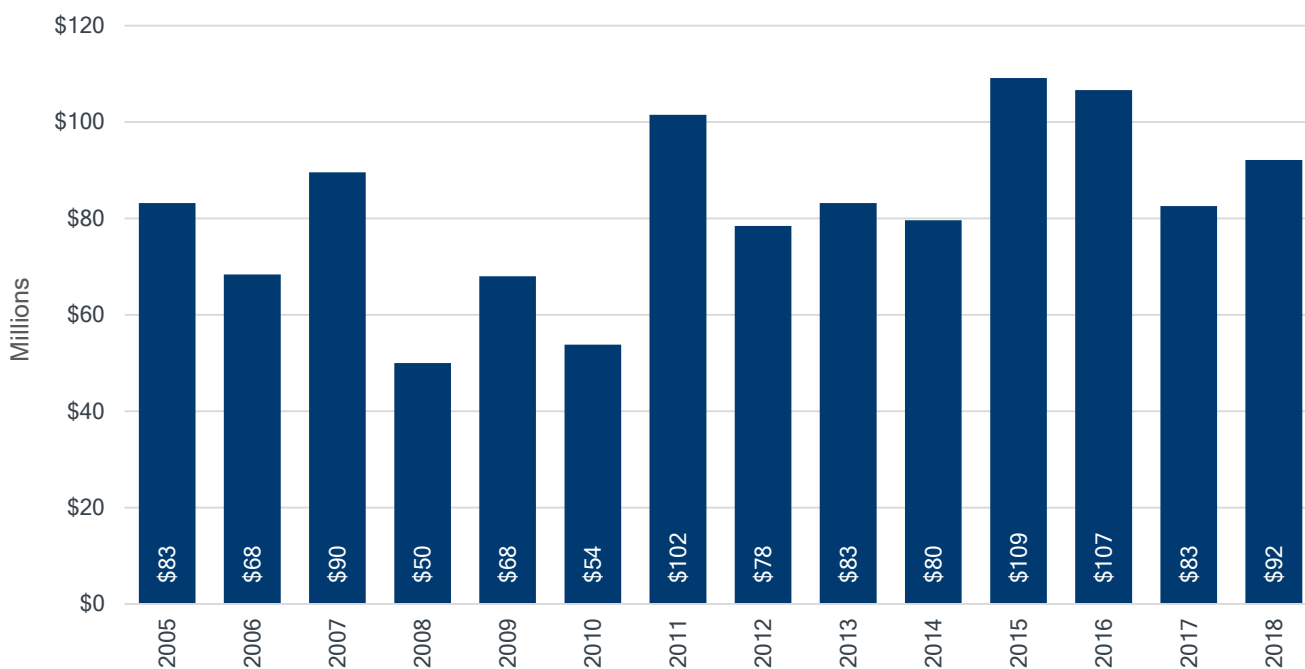
Portfolio Composition By Fund Type





- On a median basis, surveyed multi-investor funds represented over \$76 million in total equity, while proprietary funds represented \$40 million in total equity. The size difference between multi-investor and proprietary funds is driven by the fact that multi-investor funds are typically larger to accommodate multiple investors.
- The size and characteristics of multi-investor funds have evolved over time. Multi-investor funds generally increased in size in the lead-up to the recession. In 2008, when proprietary funds dominated the equity market, the median multi-investor fund was just \$50 million. In the intervening years, however, the multi-investor fund market has rebounded, and the average fund size was once again at prerecession levels. In 2018, the median multi-investor fund was closed with \$92 million in equity.

Multi-Investor Fund Size Since 2005

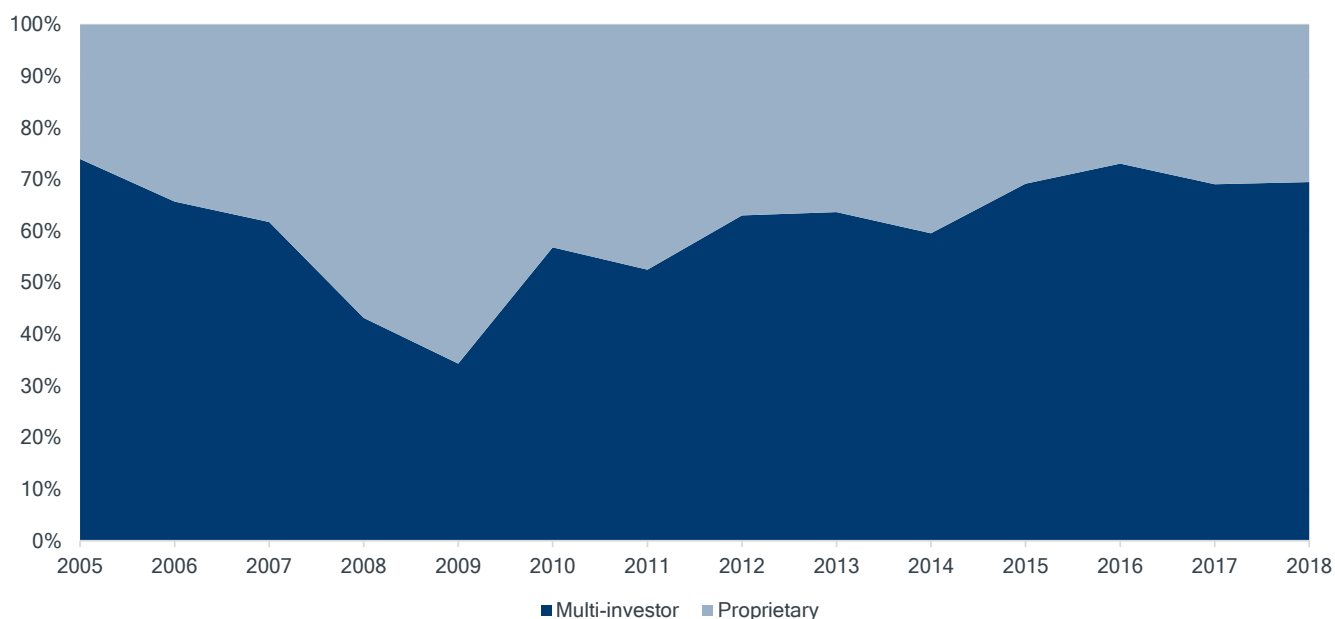




- Investment decisions that influence fund composition have become much more complicated over the years. There tends to be a shift toward proprietary investing when market demand is not as strong. This is best illustrated by the 2008-09 recessionary period, when over 61% of the syndicated equity was executed through proprietary investments. At the height of the recession, most remaining housing credit investors were almost entirely focused on meeting their CRA obligations, and thus deployed their capital predominantly through proprietary fund executions.

- In recent years, multi-investor funds increasingly used tiered pricing to accommodate specific CRA investments. In the past, property investments in “CRA Hot” markets (where many banks have overlapping CRA demand and thus credit pricing is higher than average) proved to be difficult to place in a multi-investor fund because of the impact on yield. Tiered pricing affords investors the traditional multi-investor fund benefit of risk diversification, with the traditional proprietary fund benefit of asset selection for CRA purposes. We have observed roughly two-thirds of the multi-investor fund offerings in the past several years to contain the popular tiered pricing structure.

Syndicated Fund Market Composition Since 2005





How do investors receive their returns?

How investors receive their returns can be best answered by addressing investors' motivations. Second to favorable CRA consideration that applies to banking institutions, investors are attracted to housing tax credit investments by their risk-adjusted returns. In today's market, housing tax credit investments offer around a 5% after-tax return, which might not sound that attractive at first glance compared to other alternative investments. It is important to note that these are safe, predictable, long-term performing assets that can be favorable on a risk-adjusted basis and for long-term tax management planning purposes.

Federal housing tax credits cannot be purchased. Instead, housing tax credit investors are owners of real estate, and their return is ultimately memorialized through tax benefits delivered on IRS Partnership Tax Return 1065 Schedule K-1s.

In addition to housing tax credits that are delivered over 10 years (or as a practical matter, most likely over 11-12 years due to initial partial-year delivery), investors receive a distribution of taxable losses and, sometimes, back-end capital losses at disposition. Because tax credits offer a dollar-for-dollar reduction in tax liability, while taxable losses are a deduction, taxable losses are typically valued using the standard corporate tax rate. Further, since losses tend to be more volatile than credits and larger losses could indicate heavier hard-debt leverage, investors typically favor credits by requiring a minimum degree of their investment returns to be derived from credits to ensure the quality of their investment returns. For investors who have not converted to the proportional amortization method of accounting, a loss-heavy investment tends to be much less desirable given its impact on above-the-line losses in such investors' financial statements.



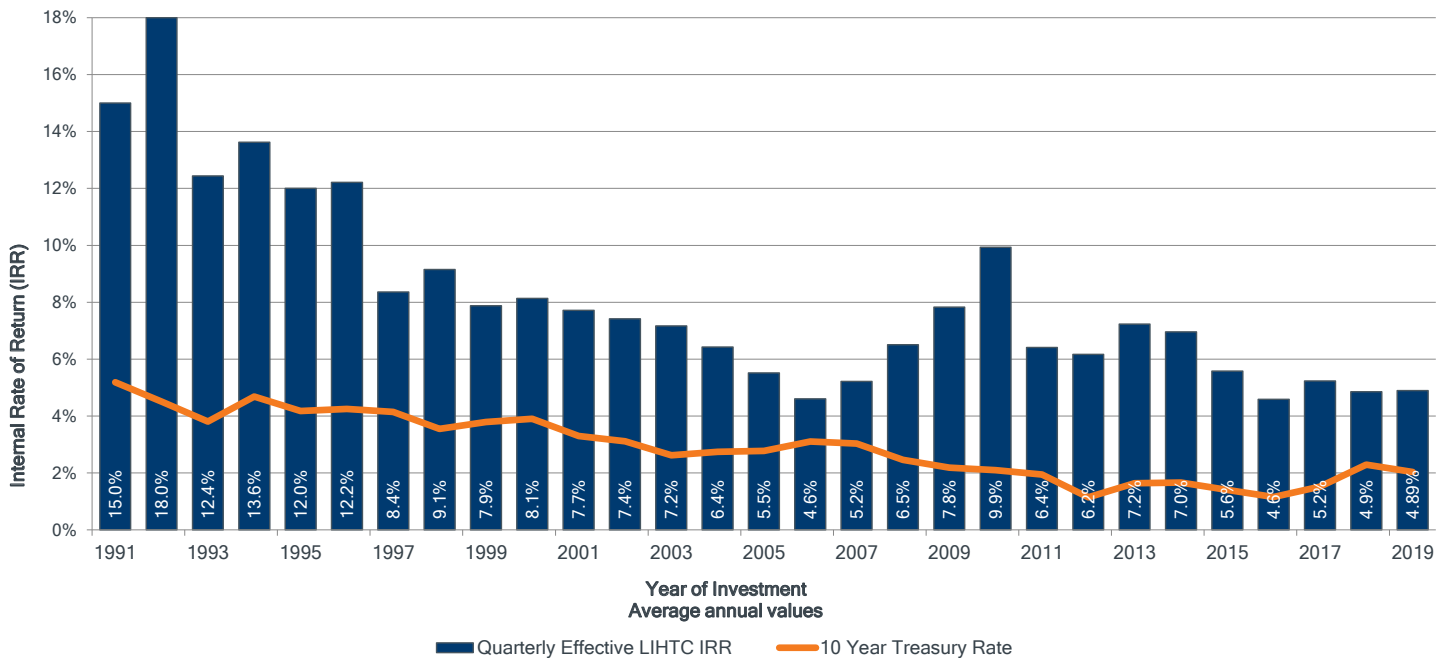


How do investors set their return expectations?

How investors set their return expectations is more of an art than a science. Like every other industry, it reflects the classic supply and demand theory. In an environment where investor demand for housing tax credit investments is robust, prices for which the credits are monetized tend to be driven up, resulting in lower investment returns. For example, during the prerecessionary period in 2006-07, investment returns were the lowest in the 2000s. During the postrecessionary period when the market was rebounding, the market witnessed a near double-digit return in 2010.

Because there are no true alternatives to housing tax credit investments, a historically popular way for corporate investors to benchmark yield from housing tax credit investments is against the 10-year Treasury rate. In the past 10 years, the spread between the two fluctuated anywhere between as wide as 800 basis points and as narrow as 100 basis points. While a widening spread generally means that housing tax credit investments present a more attractive risk-adjusted investment vehicle, Treasury tends to move faster than housing tax credit investment yields. Therefore, a widened spread does not necessarily translate into increased demand or investor acceptance of a lower investment yield.

Housing Tax Credit Fund Yield vs. 10-Year Treasury Rate





As noted, while the industry-standard calculation of investment returns is a function of the amount and timing of tax credits and loss benefits, there are other returns that are less straightforward to quantify but nonetheless cannot be neglected: 1) favorable consideration under the CRA's investment test or regulatory return, which supports steady demand and serves to buffer housing tax credit investments from drastic market changes such as recession and tax reform uncertainty; It is not uncommon for a corporate investor to lower its return expectation to secure their desired CRA investments or for an investor to keep investing for CRA despite not being able to use tax benefits immediately; 2) lending or other corporate profit-earning opportunities that could be valued holistically with the equity opportunity. From time to time, an investor may be willing to accept a lower yield based on profitability from other cross-sold products.

Have housing tax credit funds delivered their promised returns?

Yield variance measures the difference between the originally projected yield at investment closing and the most current yield projection based on actual performance. A positive variance indicates a greater than originally projected yield. We removed housing credit funds with credit enhancement from this analysis because guaranteed funds are structured with mechanisms that ensure a predictable yield to investors.

Up until 2017, taxable losses were valued in a stable corporate tax environment. The TCJA of 2017 has impacted the economic performance of existing housing credit investments in two significant ways:

- The TCJA reduced the corporate tax rate from 35% to 21% beginning in 2018. The corporate tax rate reduction directly impacts the underlying value of taxable losses generated by

housing credit investments. Accordingly, return for funds composed of investments closed with a 35% (or higher than 21% during the tax reform uncertainty period) tax rate assumption will be depressed by the reduced value of losses.

- The TCJA imposed a limitation on the amount of “business interest” that may be deducted in any taxable year, with the exception that the taxpayer that operates a “real property trade or business” (RPTOB) may make an irrevocable election to opt out of the business interest limitation. Such an election will result in the partnership having to follow the alternative depreciation system; the potential longer-than-initially-projected depreciation period can also impact the investors’ projected tax benefits and return.

To address this additional layer of complexity, we worked with data providers to isolate yield variance attributable to the performance of the underlying assets, also known as “**performance-based yield variance**,” from yield variance inclusive of the impact of tax reform, also known as “**economic-based yield variance**.” We focused our analysis on performance-based yield variance since it best captures the industry’s track record in underwriting and managing housing tax credit investments. We excluded from the industry aggregate performance calculation funds where less than 50% of the underlying property equity had reached stabilization because they tend not to have meaningful actual performance information to report.

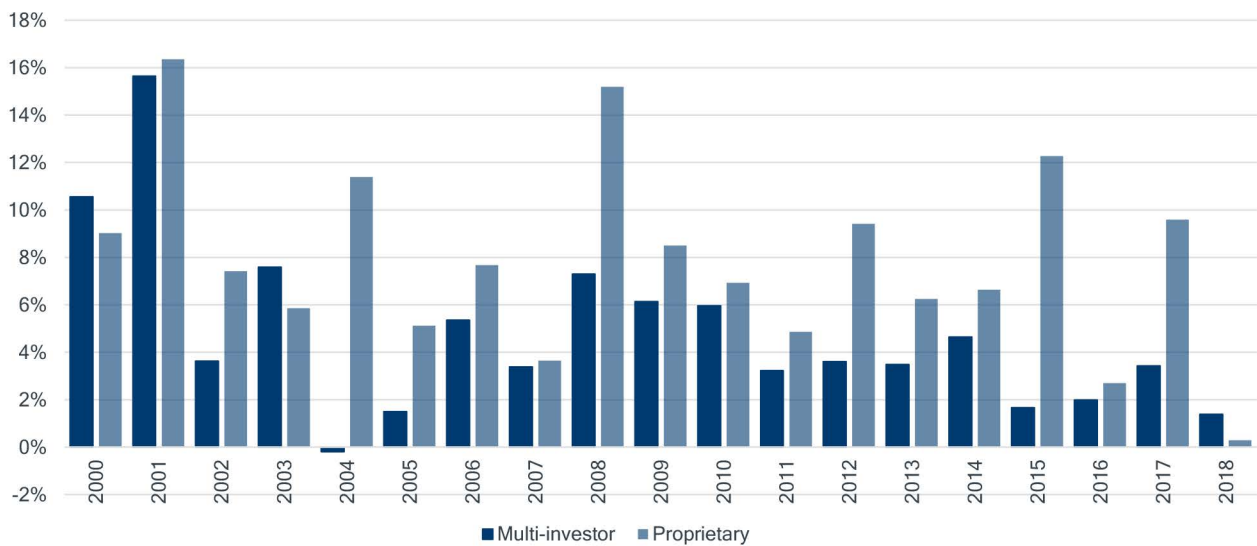
On a weighted-average basis (where yield variances for individual funds are aggregated and weighted by equity) and through 2018, survey respondents reported a positive 5.2% variance, or a positive 37-basis point variance between actual and projected yields. Investors have been receiving their promised returns through housing tax credit investments.



Multi-investor funds reported a positive 3.8% yield variance, while proprietary funds reported a positive 7.9% yield variance.

Performance-Based Yield Variance			
	All Funds	Multi-investor	Proprietary
Yield Variance (as of 2018 vs. closing)	5.2%	3.8%	7.9%

Weighted-Average Fund Yield Variance by Fund Type (% , Since 2000)



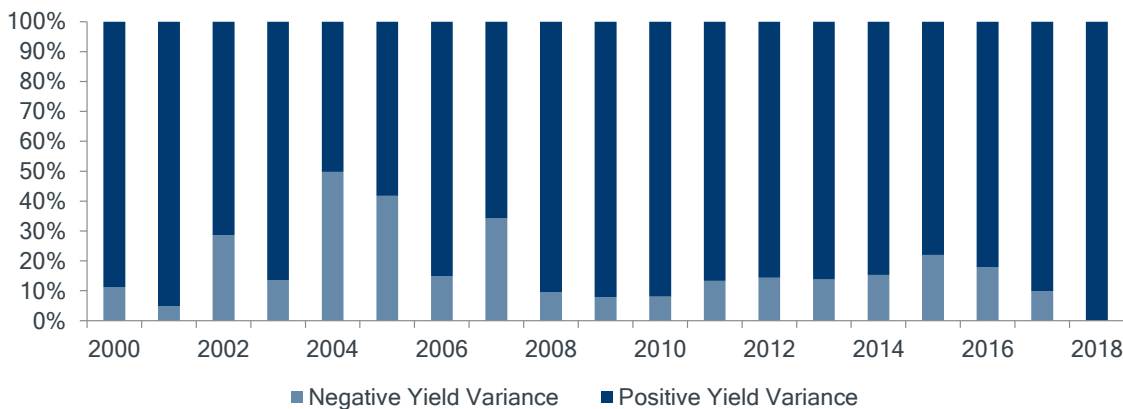
- Proprietary funds, in general, have reported larger yield variances than their multi-investor counterparts. The magnitude of the variance between the two fund types was partially affected by the way syndicators define “original” yields for proprietary funds, which tend to be less specified at closing than in multi-investor funds. Given the different methodologies that syndicators employ to track proprietary investment performance data, we focused only on multi-investor fund performance for the remainder of this report.
- Yield variance reported by multi-investor funds has been positive in each year (based on fund closing year) on a

weighted-average basis except for those closed in 2004. The 2004 class was collectively 0.2% behind in delivering their projected returns to investors due to a few large funds that slightly missed their respective yield targets. The fact that those early vintage funds reported larger positive yield variance is not surprising, as some will have benefited from residual proceeds upon property disposition.

- Over the years, the incidence of funds reporting negative yield variance has gradually declined. For those small subsets of funds that were behind, on a median basis, they were 3.5% behind in achieving their respective target yields.



Incidence of Positive vs. Negative Yield Variance



- Achieving projected yields is a major objective for housing credit investors; however, the individual components of yield computation have significant bearing on their calculation. Yield can be maintained naturally or artificially by pre-negotiated investment provisions in many ways. A more favorable yield can be generated, for instance, by an underperforming portfolio of properties generating higher losses. In recent years, as an industry best practice and added protection for investors, some funds have built-in yield maintenance provisions that subordinate the syndicators' receipt of load or cash flow split to the funds delivering the target returns to investors, and therefore increase the funds' competitiveness in the eyes of investors.

While not representing the housing tax credit industry's track record, economic-based yield variance speaks to the difference between actual and originally projected return. The younger a fund is and the more heavily leveraged (and therefore, loss-heavy), the more likely the fund will report a larger economic yield shortfall. For funds closed between 2011 and 2016, a -28.5% weighted-average economic-based yield variance was reported by survey respondents.

Have housing tax credit funds delivered their promised credits?

The average housing credit investment derives approximately 75% of its net investment benefits from housing credits, with the balance originating from taxable loss benefits. Because housing tax credits are calculated based on qualified development costs, a property's future delivery of total tax credits is somewhat predictable.

On a weighted-average basis, surveyed funds have delivered (or are projected to deliver based on actual performance) 99.5% of the originally projected total housing tax credits. Multi-investor funds reported having delivered 99.5% of the projected tax credits, while proprietary funds reported a 99.7%

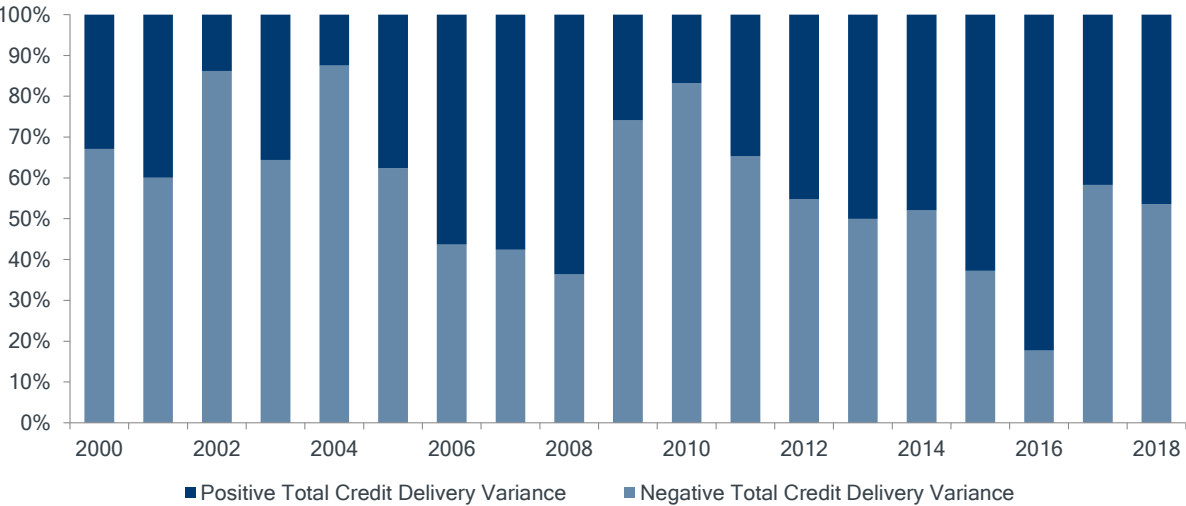
Surveyed funds have delivered (or are projected to deliver based on actual performance) 99.5% of the originally projected total housing tax credits.



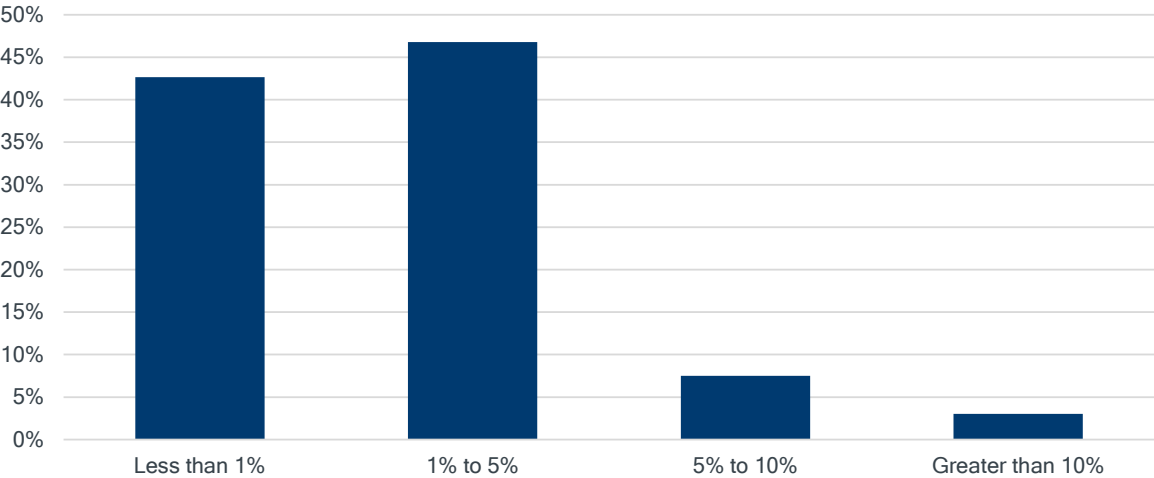
Total Credit Delivery Variance			
	All Funds	Multi-investors	Proprietary
Total Credit Delivery Variance (as of 2018 vs. closing)	-0.5%	-0.5%	-0.3%

delivery rate. While approximately half of the surveyed multi-investor funds reported a shortfall in total credits, we note that only 3.7% of those experienced a 10% or greater total credit delivery shortfall.

Incidence of Positive vs. Negative Total Credit Delivery Variance



Magnitude of Negative Total Credit Delivery Variances





Initial Year Credit Delivery Variance			
	First Year	Second Year	Third Year
Credit Delivery Variance	-13.8%	-14.6%	-7.4%

Given that the initial credit delivery is not only a function of qualified development costs but also of a property’s initial occupancy, the timing of tax credit delivery during the lease-up period is more likely to create variances. Negative credit delivery variances are generally an indication of some combination of the following: construction delays, overly optimistic lease-up projections, and changes in portfolio composition post-closing. The negative variances in credit delivery in the early years are frequently dealt with through the adjuster mechanisms in the lower-tier partnership agreements, which reduce capital contributions and act to moderate any negative impact to yield resulting from delayed credit delivery.

Given that proprietary funds tend to be less specified at closing, we focused our analysis on initial years’ credit delivery on multi-investor funds only.

Survey respondents, in general, have historically overestimated their delivery of tax credits in the first few years. Our data

suggest that initial-year credit delivery shortfalls, while not uncommon in the early years of the program, have become less pronounced over time. For example, funds closed prior to 2005 collectively missed their initial-year credit delivery forecast by over 25%, while the negative variance has come down to roughly 14% since 2011. This is largely due to more sophisticated underwriting and asset management practices we observed across many data providers to ensure timely delivery of projected benefits to investors.

Have housing tax credit funds delivered their promised losses?

It has not become an industry practice to collect and report on loss variances given the focus on investment return and credit delivery. Being able to manage taxable loss variances proactively will nonetheless help with effective tax planning.



How have troubled assets affected fund yield?

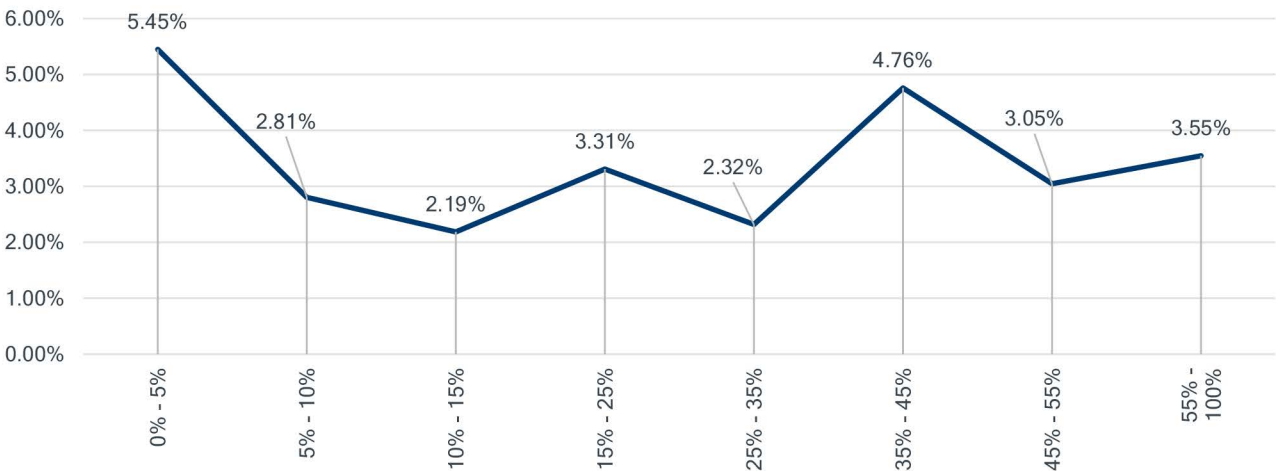
Fund and lower-tier partnership agreements have protections in place to protect investors from the negative impact of underperforming assets. Nonetheless, severely underperforming properties and concentrations of underperforming properties can still have an impact on fund performance. Troubled assets can negatively impact fund yield through delayed credit delivery, fund-level cash flow subsidization, and, at worst, foreclosure and recapture. Conversely and not intuitively, concentrations of underperforming properties may also drive a more favorable yield by generating higher losses.

To illustrate the impact of troubled assets on fund yield, we arranged over 500 active multi-investor funds by the concentration of watch list properties in each fund. Funds with

a 0% to 5% concentration of watch list properties outperformed funds with higher levels of troubled assets, by reporting the most pronounced positive yield variance of 5.45%. Positive yield variance narrowed down to 2.81% for those funds reporting a 5%-10% watch list representation and remained relatively stable through the 35% level.

Interestingly, funds with concentrations of watch list properties greater than 35% had yield variances that were generally more favorable than those between 5% and 35%. There are a variety of reasons that funds with a greater percentage of troubled assets may exhibit more favorable yield variances, including the limited sample size of active funds with a greater-than-35% troubled asset concentration, asset dispositions in older funds driving “make-up” yield, and high concentrations of increased losses due to property underperformance.

Multi-investor Funds Yield Variance By Fund Watchlist Percentage





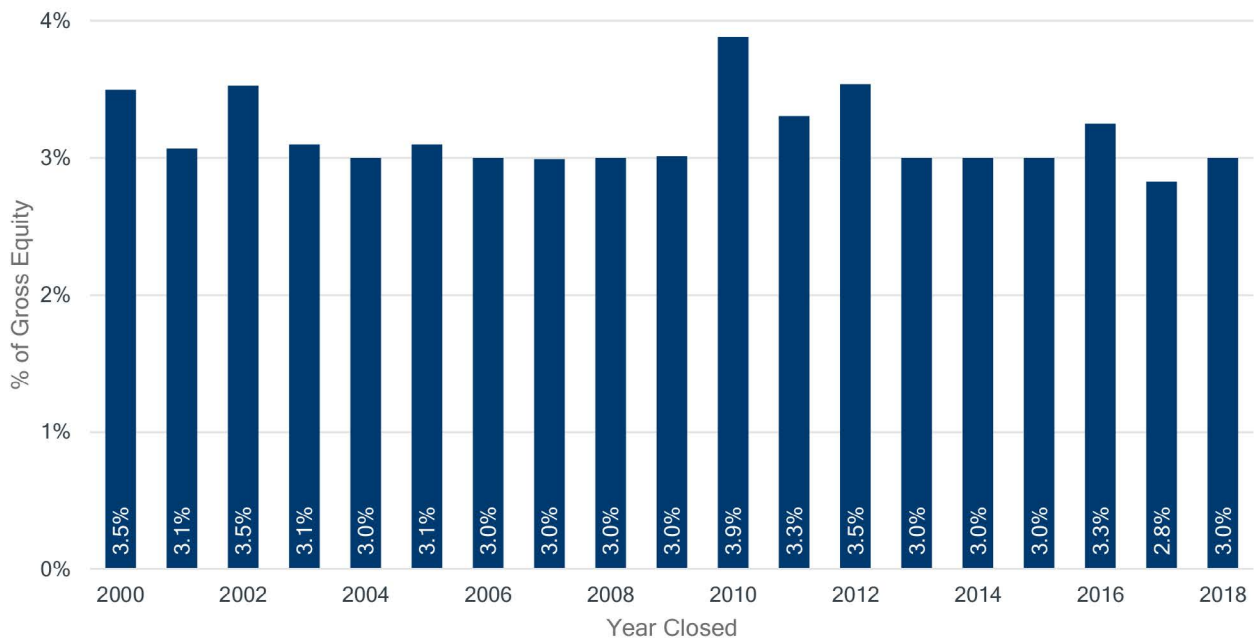
For investors, besides monitoring whether a fund has achieved its target return, it begs the need to further assess how such a return was achieved to single out those funds where a favorable return delivery might be the result of unsatisfying asset performance. At the end of this chapter, we describe a fund scoring metric that CohnReznick proposes that serves to help investors connect fund with asset performance.

How critical are fund reserves?

In addition to capitalizing reserves at the project entity level, most housing tax credit funds are structured with upper-tier reserves. Historically, multi-investor housing tax credit funds were structured with reserves that represented, on average,

between 3.0% and 4.0% of the gross equity proceeds. This means that for a \$100 million fund, roughly \$3 million to \$4 million will be set aside as reserve. While there is no magic behind this number, it is estimated to be sufficient to cover fund-level expenses and asset management fees payable to the syndicators, while leaving at least 1.0%-1.5% available for project-level deficit funding that could not be resolved at the project-entity level. The reserve funding also reflects investors’ confidence in the overall affordable housing industry. For example, following the 2008-09 financial crisis, investors collectively required fund reserves be increased from 3% to 4%. Over the following years, investors have come to accept the reserve conceding to 3%.

Multi-Investor Fund Median Reserve Size



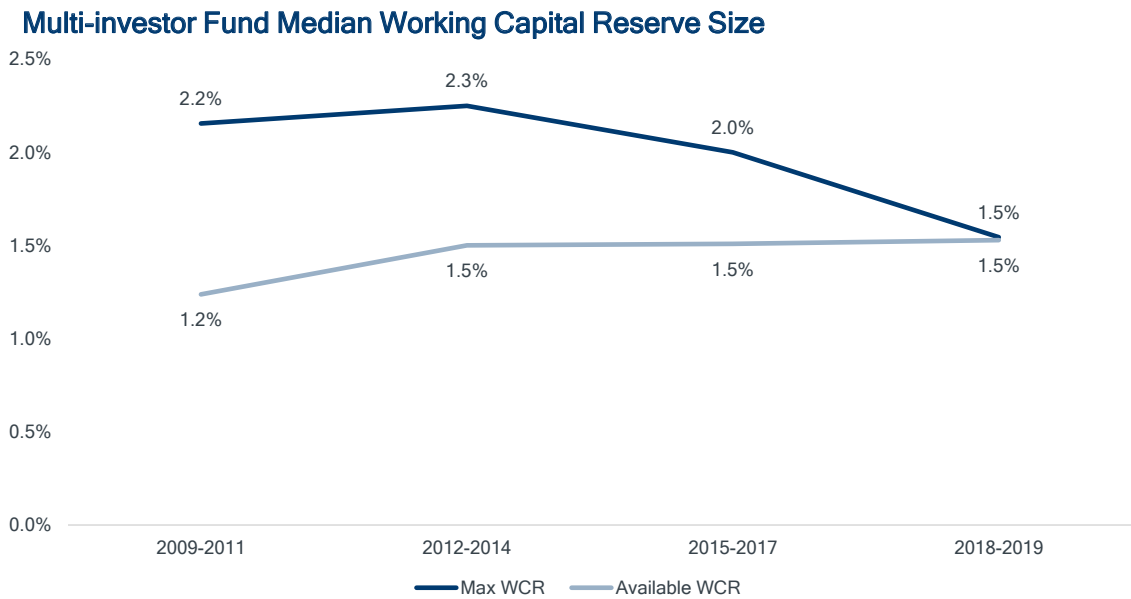


Many fund working capital reserves were structured in a way that such reserves can be used to pay asset management fees to the syndicators but only to the extent that at least 1.0%-1.5% remains earmarked for project-level deficit funding. In the past decade, many syndicators have incorporated AHIC's recommendation to segregate working capital reserves into several buckets, including a minimum of 1.5% in the project needs reserve. Additionally, some syndicators chose to build their asset management fees into investor capital calls instead of being payable from the reserves. For those who chose this approach, their working capital needs reserve would reflect a smaller-than-average size.

The following two charts were constructed based on the subset of funds that had separate property needs and working capital

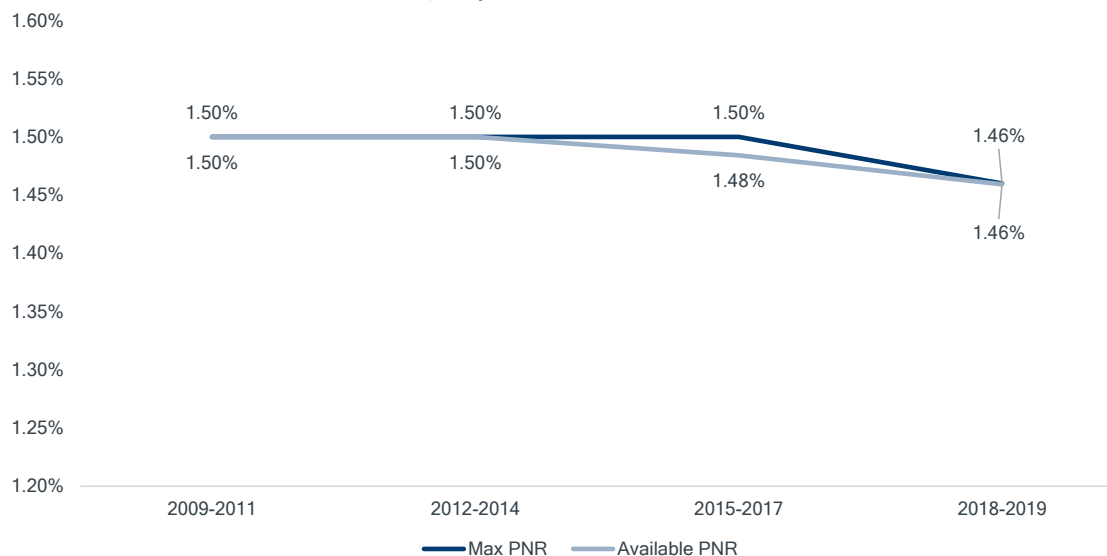
reserves. Maximum reserve refers to the size of the reserve once fully funded. In the old days, reserves were funded upfront. In an increasingly yield-compressed market, many syndicators have attempted to defer calling investor capital to fund working capital reserves to maintain yield. We recommend full funding of at least the project needs reserve within five years of fund closing. Available reserve refers to what is available plus what remains to be funded to measure the extent of reserve usage.

As shown on the next page, property-needs reserves remained largely intact. Few funds reported that their working capital reserves are expected to be insufficient prior to the end of the initial 15-year fund cycle, which speaks to the fact that in general, syndicators and investors have been carefully managing the reserves.





Multi-investor Fund Median Property-Needs Reserve Size



How can funds be risk-rated?

For many years, the affordable housing syndicator and investor community has adopted sophisticated risk-rating guidelines published by AHIC. All syndicators are required to follow AHIC risk-rating guidelines in their quarterly reporting to investors. While actual practice unavoidably involves judgment and discretion, such guidelines play an instrumental role in enhancing data quality, consistency, and knowledge-sharing.

Beyond risk-rating underlying properties, would it make sense for funds to be risk-rated, and how? CohnReznick experimented with designing a risk-rating system that connects fund performance with property performance. For investors whose business model focuses on investing through syndicators, we intend for such a risk-rating system to help investors efficiently direct attention.

Actual data from approximately 700 multi-investor funds closed since 2000 was used to inform the process of creating a scoring methodology. A fund grading system based on a four-point scale was developed to allow for a traditional A, B, C, D, and F rating.

The overarching logic informing the scoring methodology is that funds should be rewarded for delivering benefits and return as originally projected. A fund that delivers the projected yield and credits as originally projected, with no instance of property underperformance or watch list properties, would score a 4.0 – the equivalent of an “A.” Any variance from original baseline projections in any of the evaluative categories would accordingly move the fund’s score up or down by multiplying the variance by various weighting factors. We conducted variable testing independently to apply what we think is appropriate weight to each of the evaluative criteria. National median fund performance metrics were also evaluated as a barometer of the national fund score.



The three following key indicators of fund performance are the starting point of the scoring process. Internal Rate of Return (IRR) Variance, Total Credit Variance, and Aggregate Initial Three-Years' Credit Variance are the three ways funds under this scoring system receive positive points.

- **IRR variance:** IRR is an important measure of economic return to investors because it measures the fund's timing and delivery of benefits (credits and losses) to investors relative to the equity paid. Therefore, IRR variance is weighted most heavily among the evaluative metrics.
- **Total credit variance:** An equally important factor in this scoring system is the total credit variance. The most influential component of investors' benefits, total credit variance illustrates how accurately a fund projected and delivered the aggregate credits. Large variances can be attributable to less specified funds swapping properties in or out of the fund.
- **Aggregate initial three-years' credit variance:** An equally important factor in this scoring system is the timing of initial years' credit delivery relative to the closing projections. Delayed credit delivery can materially impact investors' returns and are therefore weighted equally to total credit variance.

Funds that do not meet their IRR or credit delivery targets will receive partial points proportional to the percent variance from the original targets. Detailed examples of how scoring works are shown subsequently.

The following property performance metrics by fund: economic occupancy underperformance, per unit cash flow underperformance, and watch list percentage are the three ways in which funds under this scoring system are docked points.

- **Economic occupancy underperformance percentage:** Economic occupancy is calculated as annual collected rent (net of vacancies, concessions, and bad debt) divided by annual gross potential rent. Economic occupancy underperformance is defined as properties operating at less than 90% economic occupancy for the year.
- **Per unit cash flow underperformance percentage:** Per unit cash flow is calculated as the cash flow available after making mandatory debt service payments and required replacement reserve contributions, divided by the total number of units within the property. Per unit cash flow underperformance is defined as properties with operating deficits.
- **Watch list percentage:** Syndicator and investor watch lists track properties through a set of defined performance measures to ensure that "problem" properties are more closely monitored. Watch list criteria can vary from syndicator to syndicator; however, most respondents have adopted the criteria established by AHIC as a baseline for measuring underperformance. Risk ratings are assigned to properties based on this criterion using an "A" through "F" grading scale. Properties rated "C" or worse are considered watch list properties.



The following summarizes the scoring methodology and weighting factors:

Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50

The following are hypothetical examples intended to illustrate how the scoring system works. Intuitively a fund that is struggling to deliver credits would also likely have property underperformance and watch list issues. The following are hypothetical examples of how funds with varying performance attributes would score under the proposed system.

The first example, “The Performer” fund is one that performs completely as projected. As noted, this fund, which produced 0% variances in all IRR and credit delivery categories, and had no property underperformance, would yield a 4.0 score, the equivalent of an “A.”

Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage	Score	Grade
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50	4.00	A
“The Performer”	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		

Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage	Score	Grade
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50	3.33	B
“Lagging Credits”	0.0%	-15.0%	-45.0%	0.0%	0.0%	0.0%		

The “Lagging Credits” fund shown above is meeting its IRR target, but total credit variance and initial years’ credit variance is unfavorable. The impact on fund scoring based on these factors alone results in a 3.33 score, the equivalent of a “B.”



Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage	Score	Grade
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50	2.13	C
"IRR Miss"	-25.0%	0.0%	0.0%	0.0%	0.0%	0.0%		

The "IRR Miss" fund shown above is delivering credits as proposed but is short on IRR by 25%. Since IRR variance is one of the most heavily weighted evaluative metrics, the result is a 2.13 score, the equivalent of a "C."

Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage	Score	Grade
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50	2.60	B
"Property Impact"	0.0%	0.0%	0.0%	70.0%	70.0%	70.0%		

The "Property Impact" fund illustrates a fund that is delivering credits and IRR as projected, but the majority of the underlying assets are underperforming and on the watch list. In this instance, fund scoring drops to 2.60, the equivalent of a "B."

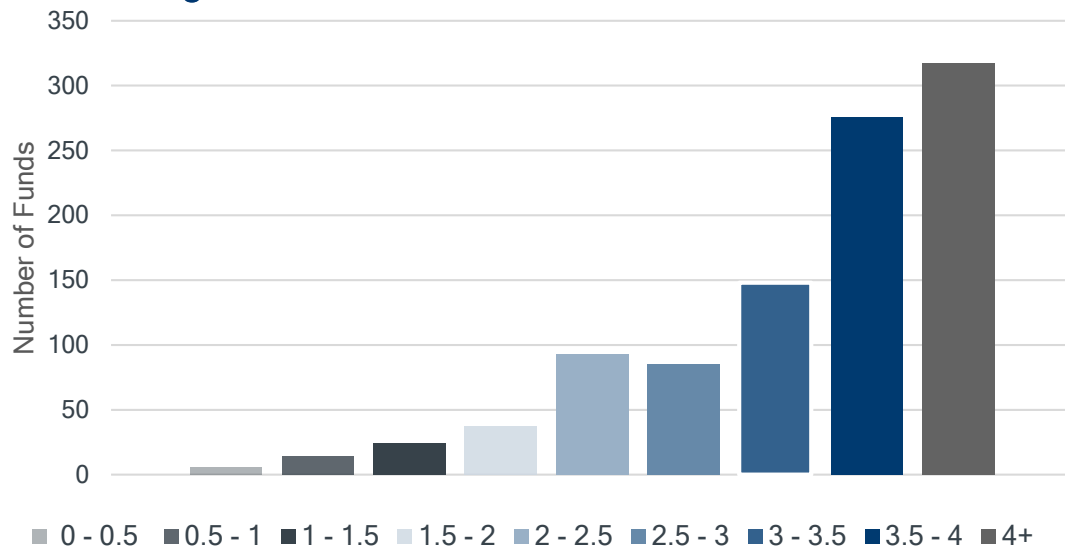
Scoring Category	IRR Variance	Total Credit Variance	Aggregate Initial Three-Year's Credit Variance	Economic Occupancy Underperformance	Per Unit Cash Flow Underperformance	Watch List Percentage	Score	Grade
Weighting Factor	1.50	1.50	1.00	0.25	0.25	0.50	3.48	B
"Average Fund"	3.8%	-0.5%	-35.8%	5.1%	15.6%	11.7%		

The final example illustrates the performance of a fund that modestly over-delivered IRR, which has a delay in initial years' credit delivery but ultimately projects to deliver materially all the credits initially projected. This fund reported 15.6% of property per unit cash flow underperformance and nearly 12% watch list representation. These performance metrics happen to be those of an "average" fund by using the national fund averages from the 2018 dataset. Using those performance metrics, an "Average Fund" scored a 3.48, the equivalent of a "B."

Using the proposed scoring methodology, the 700 multi-investor funds closed since 2000 demonstrated a relatively uniform distribution with the median fund reporting a 3.73 score, the equivalent of an "A."



Fund Scoring Distribution



We note that our scoring system focused on quantifiable performance metrics, and did not include any room for subjective judgment. It also does not consider fund structure and partnership provisions like guarantees and adjusters. In reality, fund management requires a combination of objective

and subjective analysis. This scoring system is meant to be another tool to help investors focus their attention on the funds that have the greatest probability of underperforming. CohnReznick is interested in receiving your feedback about our proposed fund risk rating scoring system.



PROPERTY OPERATING PERFORMANCE

This section of this report will present the national housing credit portfolio's performance through the prism of the following operational and financial metrics:

- **Physical occupancy:** Defined as the number of occupied units divided by the total number of revenue-producing units at a property. The annual physical occupancy rate is equal to the monthly average over the stabilized period in the year. Physical occupancy underperformance is defined as properties operating at less than 90% physical occupancy for the year.
- **Economic occupancy:** Defined as annual collected rent (net of vacancies, concessions, and bad debt collection losses) divided by annual gross potential rent. Economic occupancy underperformance is defined as properties operating at less than 90% economic occupancy for the year.
- **Debt coverage ratio (DCR):** Defined as net operating income (minus required replacement reserve deposits), divided by mandatory debt service payments. DCR underperformance

is defined as properties operating with less than 1.00 DCR for the year, also referred to as “operating below breakeven.”

- **Per unit cash flow:** Defined as the cash flow available after making mandatory debt service payments and required replacement reserve contributions, divided by the total number of units within the property. Per unit cash flow underperformance is defined as properties with operating deficits or less than \$0 in per unit cash flow.
- Portfolio-wide underperformance in each category is calculated as the net equity of the underperforming properties divided by overall properties' net equity.

In addition to analyzing these performance metrics for the overall surveyed portfolio on a national basis, CohnReznick presented the dataset by category to further analyze the results, including by **project location, project age, project size, tenancy type, credit type, development type, availability of subsidy, and level of hard debt.**

State- and county-level operating performance and expense metrics can be found at the CohnReznick online database:
www.cohnreznick.com/ppi.



Operating performance

The following summarizes the operating performance data for approximately 21,000 surveyed properties (71% of which were stabilized by property count) measured by median physical occupancy, economic occupancy, DCR, and per unit cash flow. Properties with partial years of stabilized performance were removed from the dataset; otherwise, annualized figures could inaccurately skew the DCR and cash flow results. The following table illustrates the overall sample size used for this report.

Overall Portfolio Composition			
	Survey Total	Stabilized Properties	Percent Stabilized
Number of Properties	21,020	14,919	71.0%
Number of Units	1,636,265	1,142,964	69.9%
Number of LIHTC Units	1,553,683	1,089,149	70.1%

The national housing credit portfolio as of year-end 2018 was predominantly 9% credit properties, accounting for 71% of the total properties. Upward of 37% of the property portfolio reported some percentage of project-based rental assistance. Two-thirds of all the housing credit properties had no age restriction, while 22% were reserved for senior households age 55-plus or 62-plus. The remaining properties served special needs and other unspecified populations. The average housing credit property in the national portfolio was 78 units and was 10 years old.

The national stabilized portfolio continued to show strong operating performance in both 2017 and 2018 on a national median basis for every metric.

National occupancy trend

Nearly all of the housing units financed with housing tax credits are occupied. Remarkably, median physical occupancy has trended steadily upward since 2009, reaching 97.9% in 2016,

a high-water mark for this metric since we began collecting data, and retreating only marginally to 97.8% in 2018. Physical occupancy underperformance not surprisingly has steadily decreased over the same period, falling from 11.9% in 2008 to only 5.1% in 2018. This means that nearly 95% of all the surveyed properties in our dataset reported occupancy greater than 90% in 2018.

In the broader apartment industry, property managers generally consider an occupancy rate of more than 95% to be fully occupied. The national median physical occupancy rate for units financed with housing tax credits has always clustered in the 96%-97% range, confirming, year after year, the pent-up demand for affordable housing in virtually all parts of the country. Underperforming properties that reported occupancy issues tend to struggle for reasons not related to demand, but project-specific challenges such as poor design, ineffective management, or deferred maintenance.

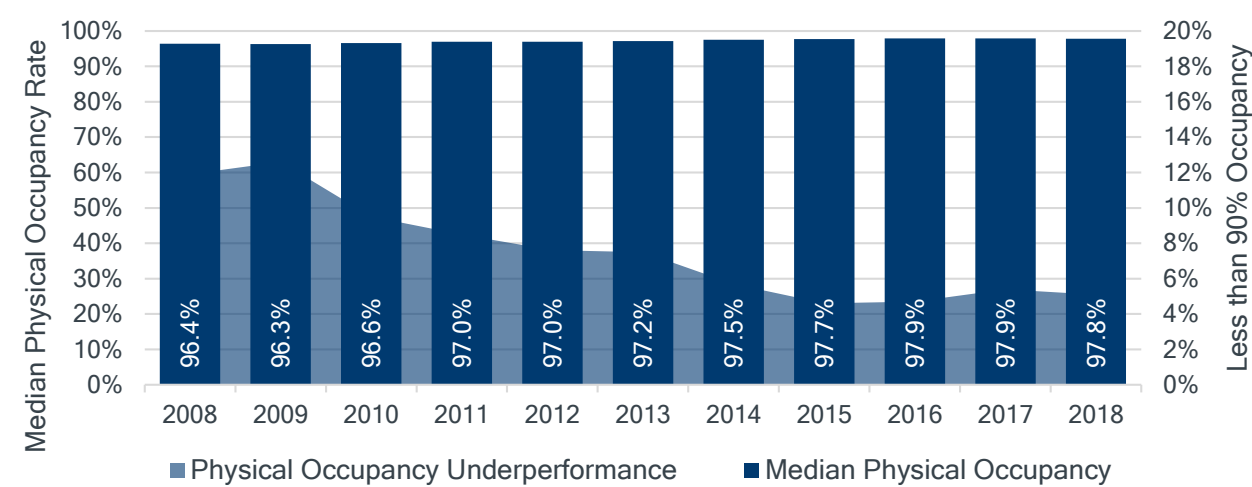


The following graph illustrates the generally increasing physical occupancy trend among the national housing tax credit portfolio from 2008 to 2018.

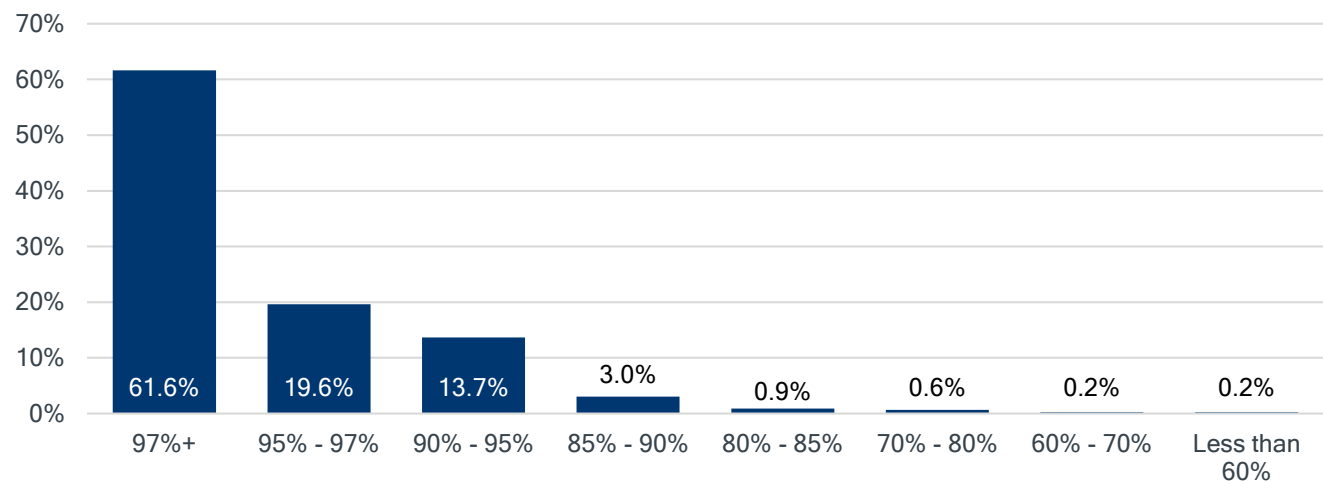
Of the housing tax credit properties with below-average performance, most are still in relatively strong condition. For example, only 5.1% of housing tax credit properties (by equity)

were less than 90% occupied in 2018, significantly down from 11.9% in 2008. Of these underperforming properties, most reported physical occupancy rates between 80% and 90%. Only 1.1% of the surveyed, stabilized properties were considered severe underperformers and reported that less than 80% of their units were physically occupied.

National Physical Occupancy Trend: 2008-18



National Distribution of Physical Occupancy: 2018





National economic occupancy

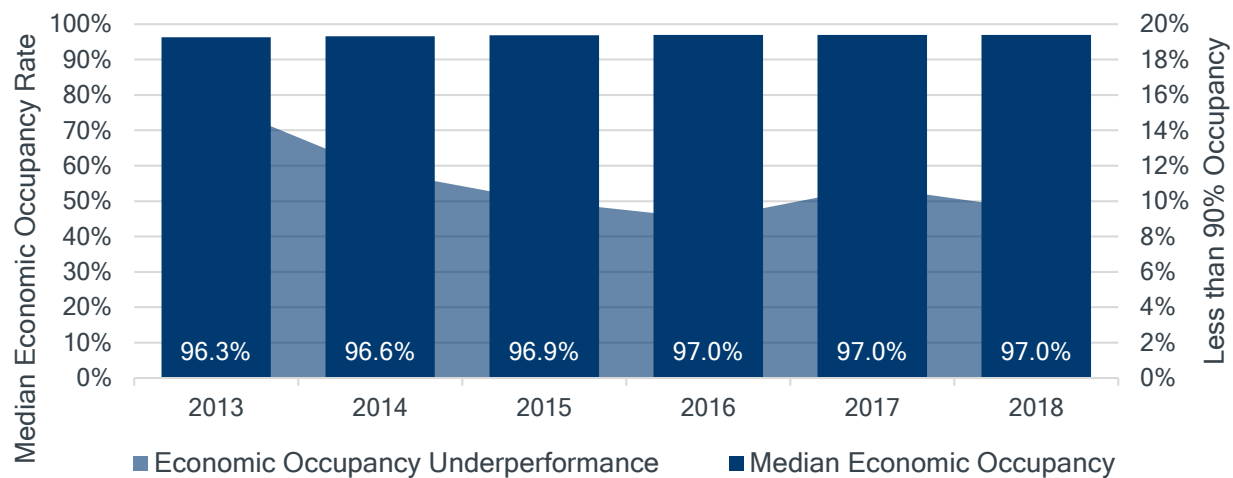
Properties financed with housing tax credits also performed well with respect to the rent collected compared to the rent potential. The income from an apartment property depends on more than simply whether its units are fully occupied. Property managers also must be able to collect the rent from those tenants.

Industry professionals generally underwrite housing tax credit property investments with the assumption that stabilized economic occupancy rate will be at least 93%, or 95% if the property is 100% subsidized or located in a strong market. The assumed economic vacancy rate considers the periodic turnover of units, the ability to re-lease such units, and losses from rent skips or collection problems. While physical

occupancy may be calculated at 95% or higher, historical performance data confirm that it is a sound underwriting practice to assume an additional 1%–2% of economic losses beyond physical vacancy losses.

Because economic occupancy was not consistently tracked by data providers, CohnReznick was unable to gather such information before 2013. Median economic occupancy rates among the national portfolio exhibited similar improving trends since 2013. The spread between physical and economic occupancy rates has continued to narrow since 2013. Anecdotally, CohnReznick suspects that the historical spread between physical and economic occupancy rates prior to 2013 might have been even wider.

National Economic Occupancy Trend: 2013-18



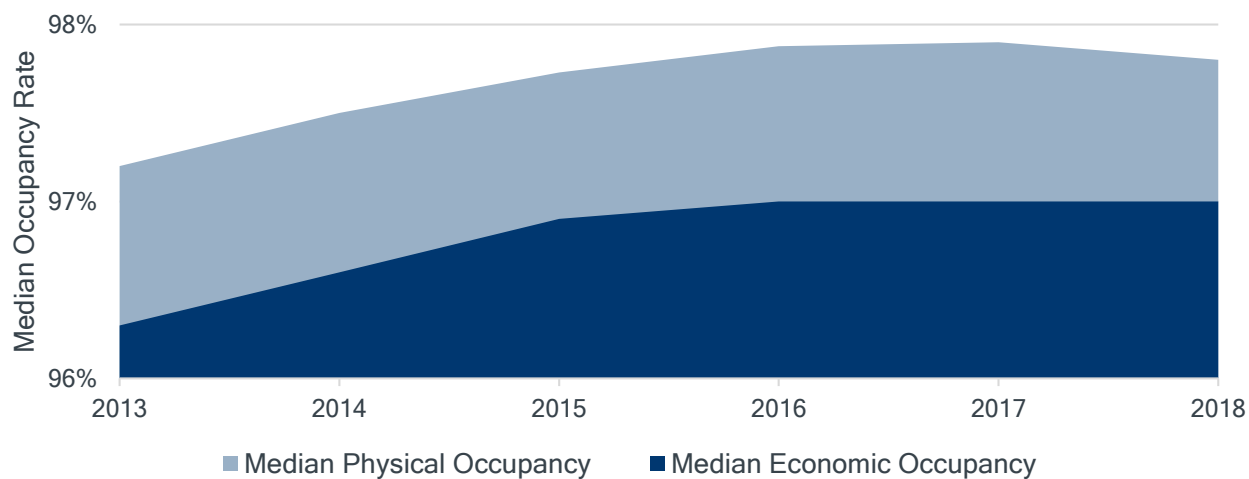


The spread between physical occupancy and economic occupancy has narrowed to its smallest point, only 80 basis points in 2018. The spread demonstrates very powerfully how the demand for affordable housing units has lowered the turnover rate in housing credit properties, reduced the costs associated with units turning over, and lowered the loss in rental income associated with rent skips. In

turn, this high rate of economic occupancy supports strong performance for these properties in terms of debt service ratios and cash flow.

The percentage of properties where the economic occupancy was less than 90% also shrank to 9.5% in 2018, down from 15.5% in 2013. Only 2.2% of the stabilized portfolio showed economic occupancy rates below 80% in 2018.

Occupancy Rate Spread: 2013-18





National debt coverage ratio

Housing credit properties are also in a good position, on average, to successfully keep up with debt payments. The median debt coverage ratio (DCR) was 1.40 for surveyed housing tax credit properties in 2018.

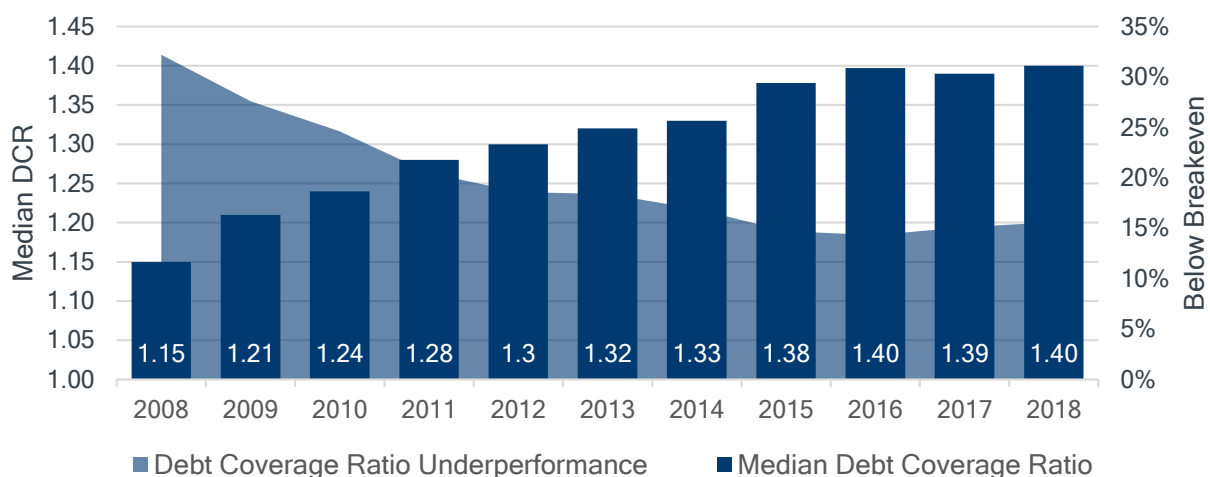
Most lenders' underwriting standards require that a housing credit property be able to generate net income that produces a DCR of at least 1.15–1.20 as a condition of retiring a property's construction loan and converting to long-term permanent financing. A property's DCR represents the net income produced by the property divided by the amount of its mandatory debt service payments. For example, a project that reports \$140,000 of net income and \$100,000 of annual mandatory debt service is considered to have a 1.40 DCR.

A strong DCR means that the property receives more income than it has to spend on its expenses, including debt. The surplus can be used to replenish reserves, pay deferred developer fees or soft loans, and put the development in a stronger, safer financial position.

The median DCR of 1.40 in 2018 represents a new high-water mark for this performance metric. The median DCR for these properties hovered around 1.15 between 2000 and 2008, increased to 1.24 in 2010 (notwithstanding the recession), and further improved to 1.40 in 2018. The following graph illustrates the national portfolio trend in DCR since 2008.

This analysis includes only properties with loans that require regular payments. It does not include properties that carry no debt or that are financed with only "soft" debt. Soft debt refers to mortgage loans made by government agencies or other lenders that require current payments only to the extent that the project has sufficient cash flow (or in some cases, do not require any payments until the maturity of such loans even if there is surplus cash flow). Roughly 15% of the properties (by both property count and investor net equity) in our stabilized surveyed population were financed exclusively with soft debt.

National Debt Coverage Ratio Trend: 2008-18

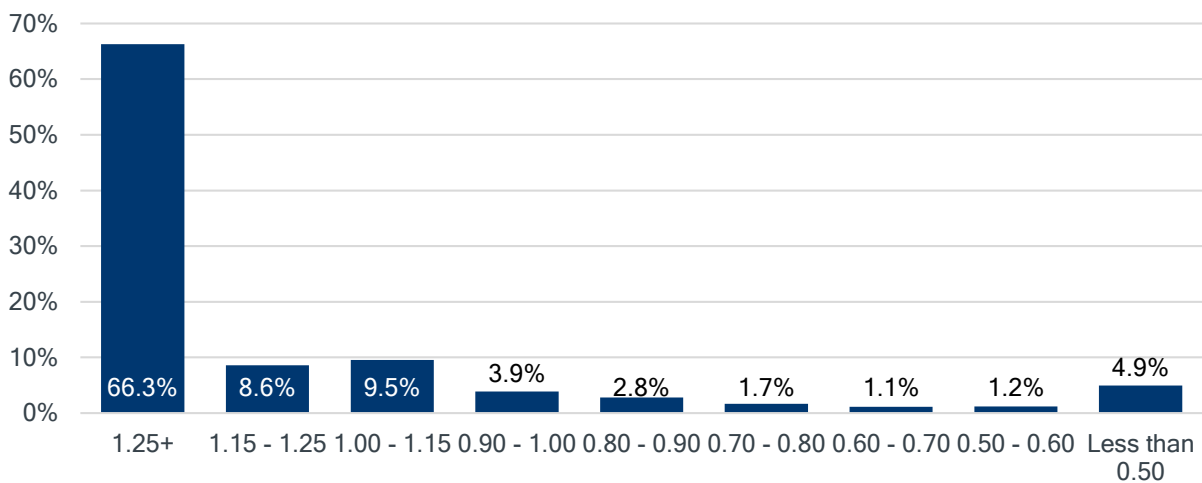




DCR underperformance, properties with DCRs of less than 1.00, has declined from 32.2% in 2008 to just 15.6% in 2018. Similarly, as DCR underperformance has decreased, so has watch list representation, which has been on a steady decline over the same period.

Perhaps even more remarkable than the universe of properties operating below breakeven being halved since 2008 is the magnitude of DCR underperformance. In 2018, 8.9% of the national housing tax credit portfolio reported less than a 0.80 DCR; and 4.9% reported less than a 0.50 DCR. This ultimately means that far fewer properties are having severe difficulty servicing their debt, which is likely attributable to the declining cumulative foreclosure rate, discussed subsequently.

National Distribution of Debt Coverage Ratio: 2018





National per unit cash flow

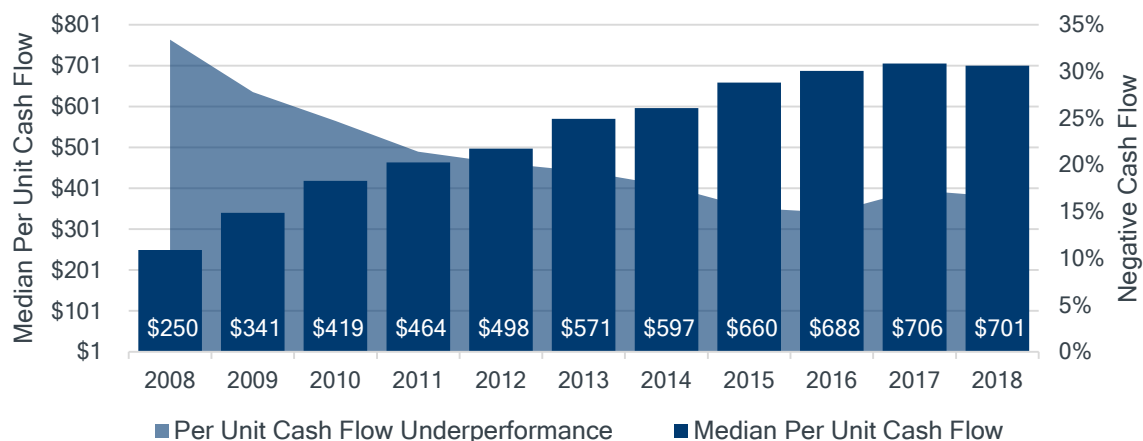
Housing credit properties also produce healthy annual cash flow. The improving cash flows for tax credit properties are very similar to the improving debt coverage ratios for these properties. The median cash flow is based on a larger number of properties, because, as noted earlier, properties that were financed only with soft debt were not included in our calculation of the median debt coverage ratio.

Median per unit cash flow, after paying hard debt service and making required replacement reserve deposits, was \$701 per unit in 2018 among the housing tax credit properties surveyed by CohnReznick. It nearly tripled the median cash flow of \$250 per unit reported in 2008, just 10 years before. Between 2000 and 2008, housing tax credit properties reported minimal levels of cash flow, averaging between \$200 and \$250 per unit per year.

Stronger cash flows are good news for housing tax credit properties; however, they are still tightly budgeted. By design, state finance agencies are required to allocate just enough credits to make projects financially feasible. Because the median tax credit project comprises 78 units, the total sum of positive cash flow per property – also on a median basis – is less than \$55,000 per year.

This cash flow is not necessarily distributed to the partners that own a tax credit property. Any excess cash flow is typically run through the cash flow waterfall specified under the property's partnership agreement to pay deferred developer fees, asset management fees, and soft loans. A 1.40 median DCR and a \$701 median per unit cash flow across the national affordable housing tax credit portfolio means that there is a moderate level of margin for error when a property experiences an unexpected expense spike, stagnant rent growth, or any constraints.

National Per Unit Cash Flow Trend: 2008-18





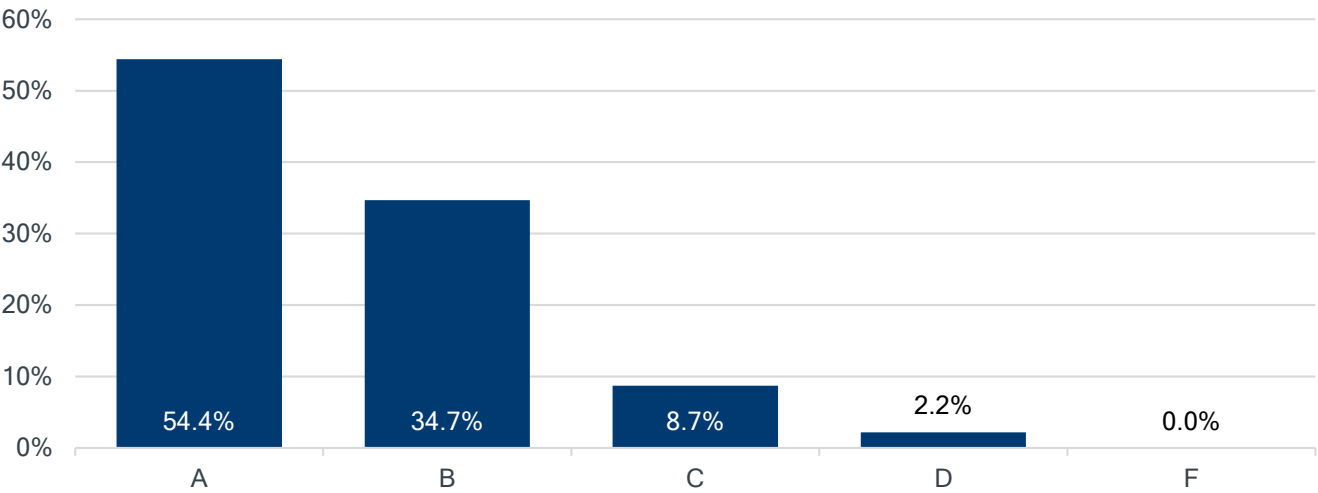
National watch list distribution

Syndicator and investor watch lists track properties through a set of defined performance measures to ensure that “problem” (aka: watch list) properties are more closely monitored. Watch list criteria can vary from syndicator to syndicator; however, most respondents have adopted the criteria established by the Affordable Housing Investors Council (AHIC)⁶ as a baseline for measuring underperformance.

Risk ratings are assigned to properties based on this criterion using an “A” through “F” grading scale. Properties rated “C” or worse are considered watch list properties. The following graph demonstrates the distribution of properties in the national portfolio by risk rating.

⁶ https://ahicorg.starchapter.com/images/downloads/Asset_Management/risk_rating_guidelines_instruction.docx

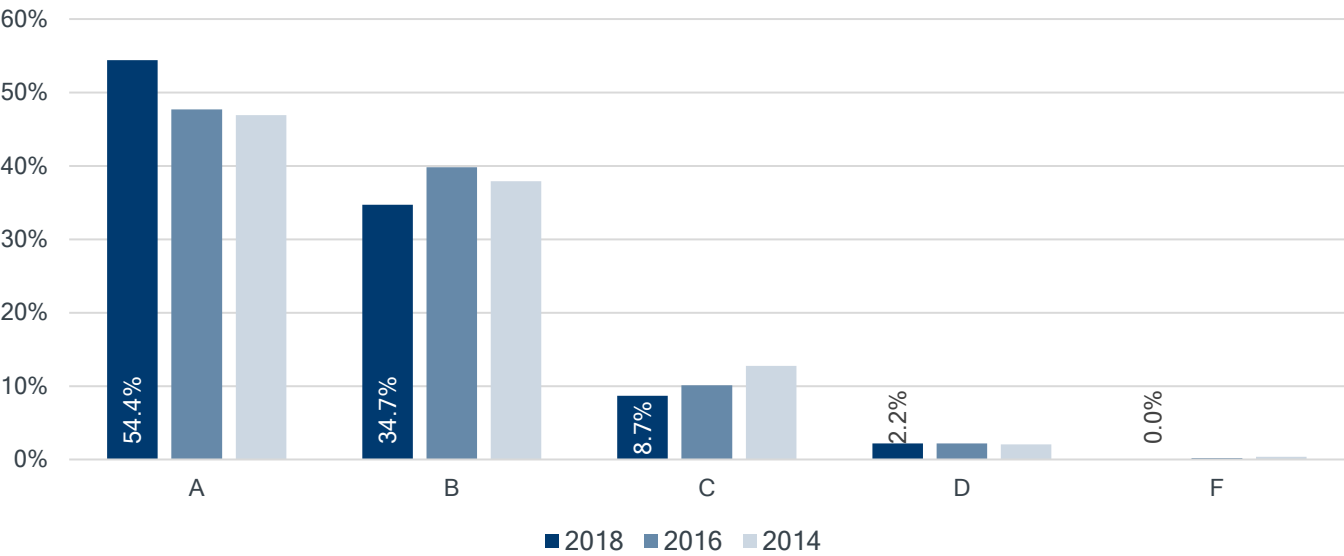
Risk Rating Distribution 2018





Across the national portfolio, roughly 10.9% of properties were on the watch list as of year-end 2018, which is down from approximately 12.5% in 2016 and approximately 15.0% in 2014.

Risk Rating Distribution History



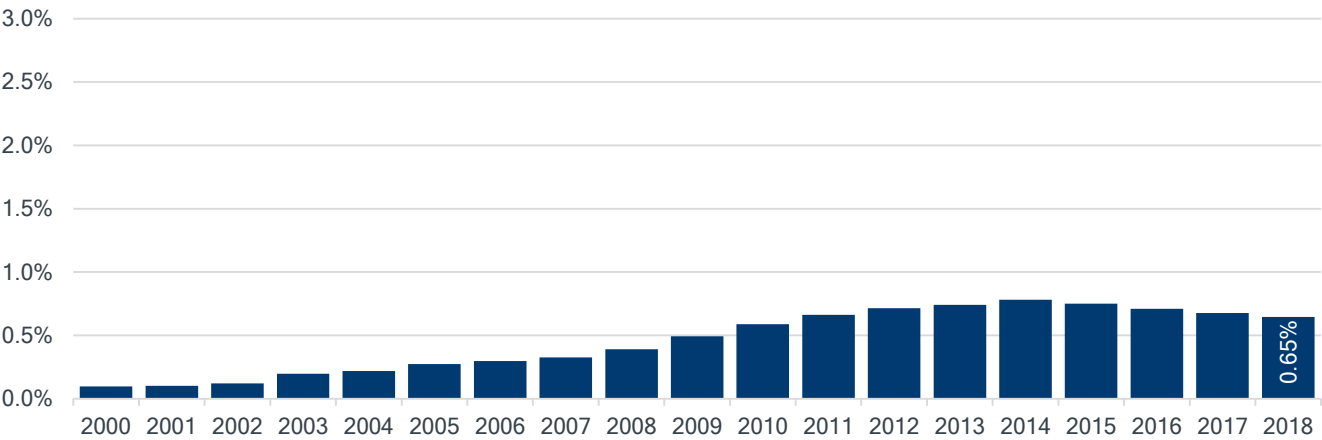


National cumulative foreclosure rate

CohnReznick asked survey respondents to report the number of properties lost to foreclosure, including circumstances in which a deed may have been tendered in lieu of foreclosure.

Respondents reported a 0.65% cumulative foreclosure rate, measured by the number of foreclosed properties divided by the total number of properties in respondents’ portfolios.

Cumulative Foreclosure Rate



The less than 1% foreclosure rate has proven to be a very meaningful data point for regulators who rate the risk of housing tax credit investments. The very low risk rating affects the amount of capital that regulated financial institutions like banks hold in reserve to offset the risk of their investments. The low foreclosure rate of housing tax credit properties is also important as investors seek credit approvals to make equity investments in housing tax credit transactions.

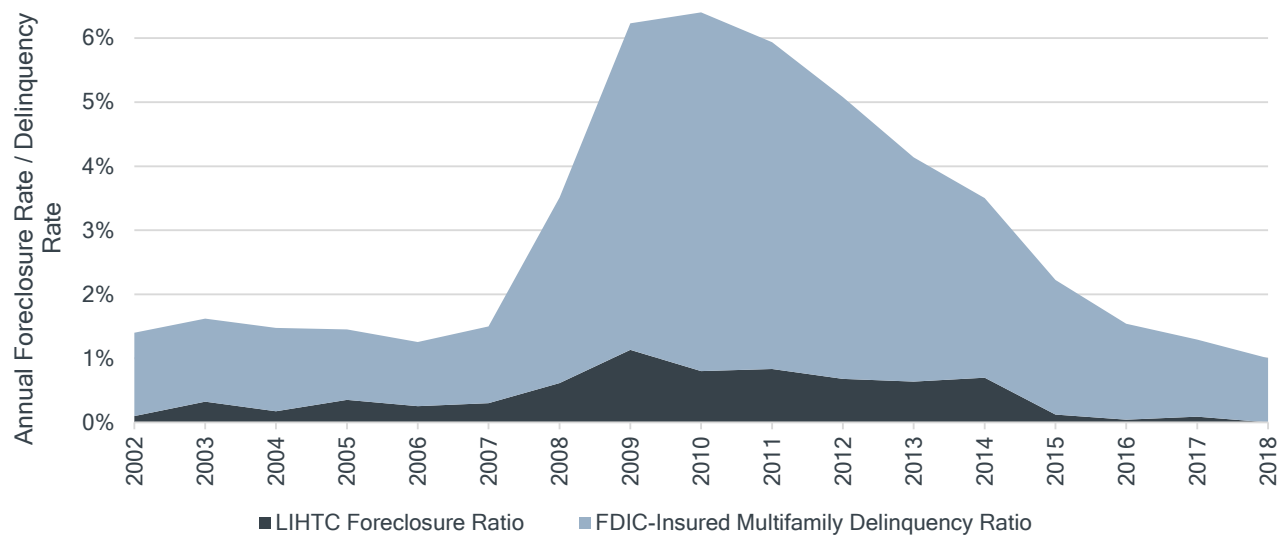
While housing tax credit properties have a cumulative foreclosure rate of just 0.65%, the annual rate of foreclosure is even lower than the cumulative rate – typically less than 0.1% in any year since 2000.

Conventional apartment properties are much more likely to suffer foreclosure. The chart below shows the annual housing tax credit foreclosure rates compared with the rate at which conventional multifamily loans were seriously delinquent by more than 90 days or in foreclosure, as reported by FDIC-insured institutions according to the Mortgage Bankers Association of America.



Please refer to the foreclosure chapter for a more detailed analysis.

Annual LIHTC Foreclosure Rate vs. Conventional Multifamily Delinquency Rate





INCOME AND EXPENSE

A typical housing tax credit project is underwritten with an initial 1.15-1.20 DCR, and there are many factors that could influence a project's operating performance: the ability to achieve projected rents and to increase rents as projected (typically 2%); the project's occupancy rate; and the property manager's ability to manage the property's operating expenses to minimize unexpected variations. Because housing tax credit properties are underwritten with a smaller operating margin for error than conventional properties, any of the preceding factors could significantly influence a property's operating performance.

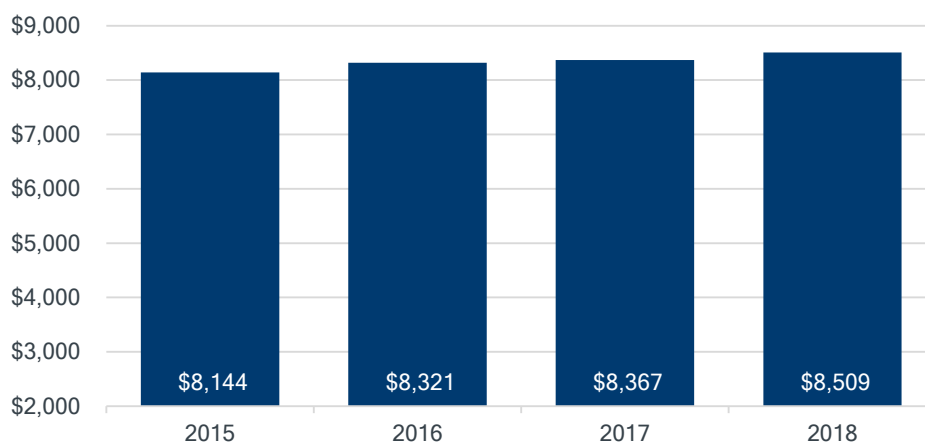
In 2013, CohnReznick began requesting property operating expense data from data respondents; in 2015, net revenue was added to the request. We requested data in the custom format that each individual data provider uses to track income and operating expenses. Because of the many methods of categorizing expenses, considerable efforts were spent understanding and segregating charts of account into comparable categories. National income and expense data

is not likely to be useful for underwriting a discrete property investment, but the national trends can be instructive.

National net revenue trend

For purposes of this report, net revenue is defined as gross potential revenue (including rental and other income), less vacancy losses. For a typical housing tax credit property, the vast majority of a property's net revenue is expected to be derived from rental income. There are several key factors that drive a property's rental income and its growth: 1) whether a property can lease units at the projected rents based on the market condition, or must offer concessions to remain competitive in the market; 2) whether HUD published area median income which determines the maximum rent a housing tax credit property could charge (unless the units are otherwise subsidized under other programs) and the market condition supports a 2% rent increase; 3) how well-occupied a property is throughout the year. We charted the growth in net revenue to illustrate the growth in the income of the national housing credit portfolio on a median basis.

Median Net Revenue Per Unit

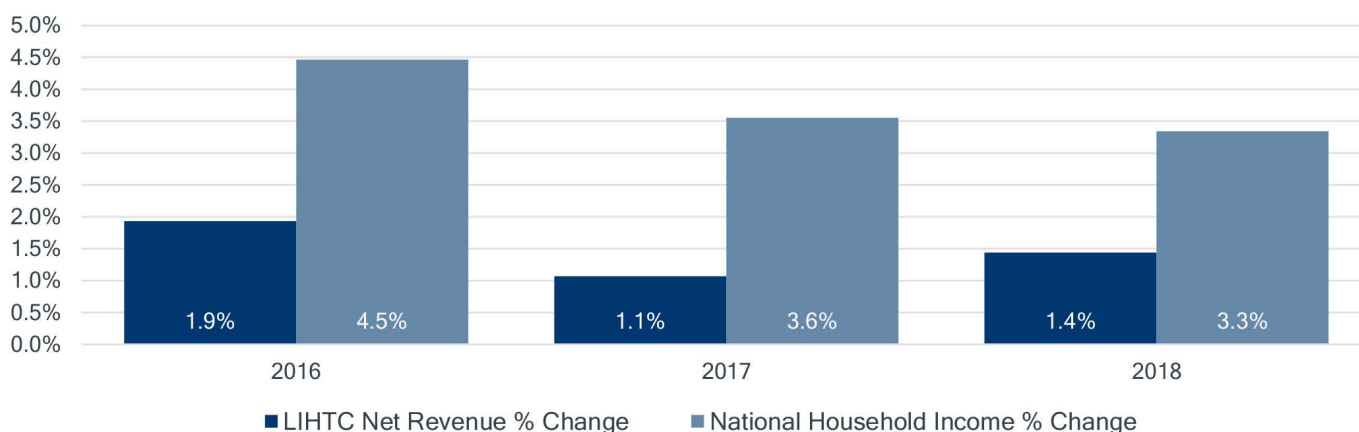




The preceding graphic illustrates the median net revenue among all the properties in the national housing credit portfolio. It is more precise to quantify individual properties' year-over-year net revenue growth rates. When CohnReznick performed that analysis, the median annual net revenue growth rate among the properties in the national portfolio was 1.5% since 2015, which tracks slightly behind the 2% industry standard for rent inflation.

National household income growth has averaged 3.8% in the past three years, outpacing the housing credit property portfolio net revenue growth over the same period. It should be noted that household income has steadily and dramatically increased in recent years. The longer household income growth trend since 2000 was 2.3% annually, which considers the years of income contraction during the recession and is consistent with the housing credit property net revenue growth rate.

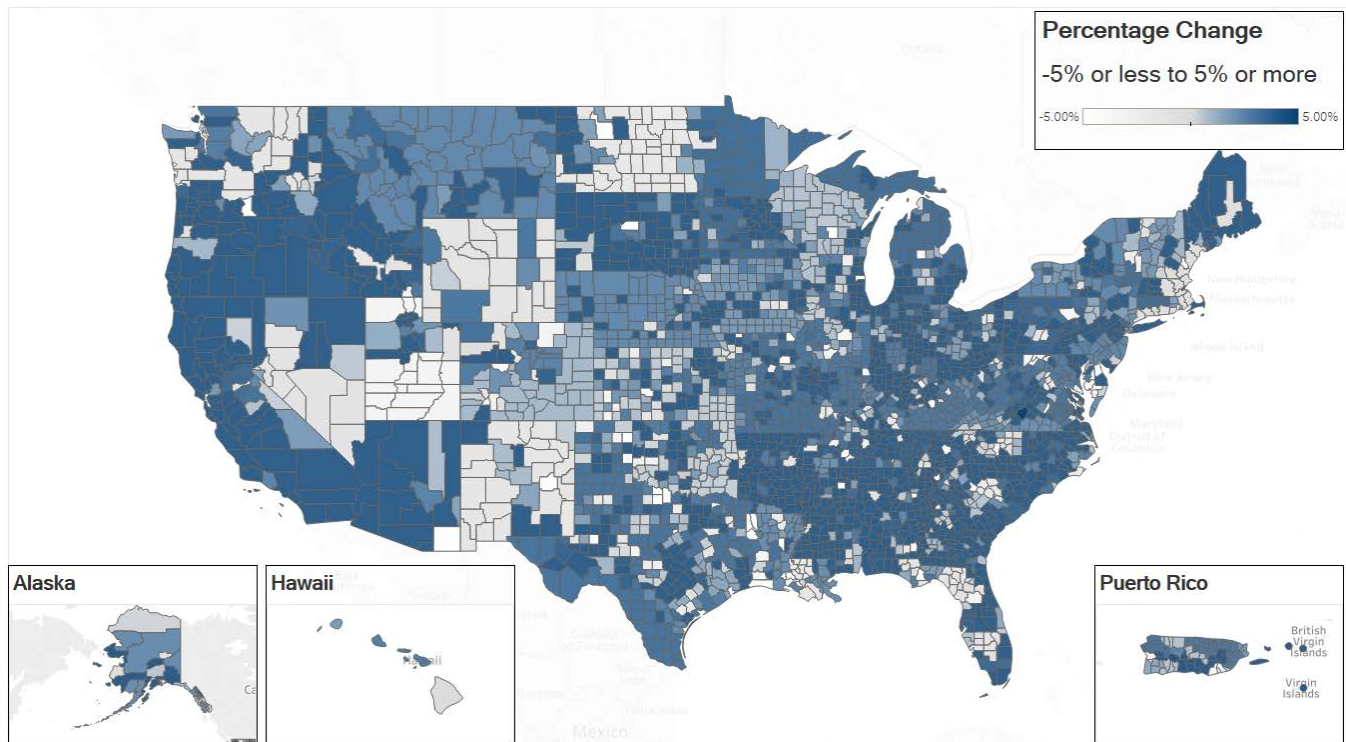
National Household Income Growth vs. LIHTC Net Revenue Growth



We plotted the annual housing credit net revenue growth rate against the national median household income growth rate. Median household income is a statistic generated via the U.S. Census Bureau. Since each market area has different living costs and income levels, median household income is geographically based. Nevertheless, the national median four-person household income was \$63,179 in 2018.⁷

The map on the next page illustrates the 2018-19 area median income growth rates by county nationwide, illustrating the markets where incomes are increasing the fastest.

⁷ U.S. Census Bureau, Real Median Household Income in the United States [MEHOINUSA672N], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/MEHOINUSA672N>, Oct. 30, 2019.

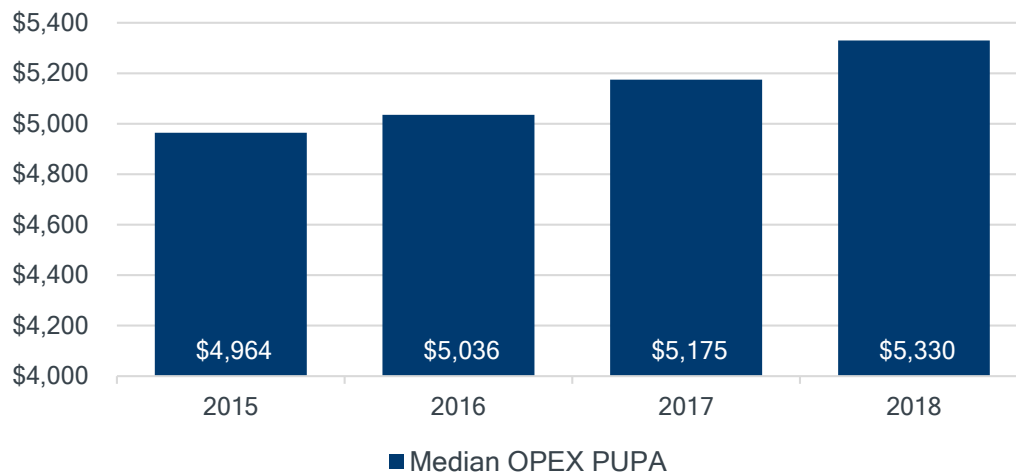


National operating expense trend

On a national median basis, total 2018 operating expenses (not including replacement reserve contributions) across the surveyed portfolio were \$5,330 per unit per annum (PUPA). Median national per unit operating expenses (OPEX) have steadily increased since we have been collecting data; on average increasing by 2.4% per year.



Median OPEX Per Unit



Similar to net revenue, however, the more precise way to capture the growth rate of operating expenses in the national portfolio is to calculate the year-over-year expense growth at individual properties, then calculate the median of those results. When CohnReznick performed that analysis, the median operating expense growth rate among the properties in the national portfolio was 3.2% since 2015, tracking closely to the 3% industry standard for underwriting operating expenses.

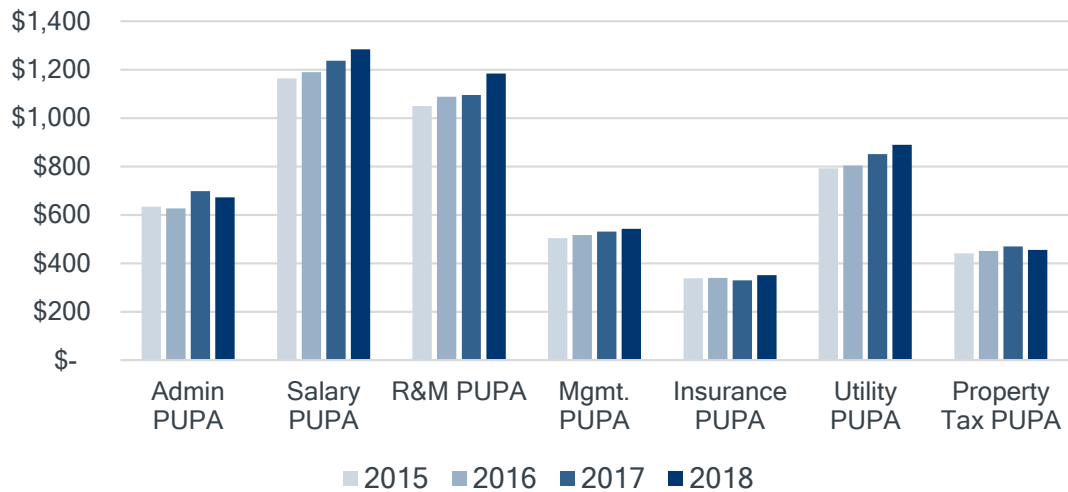
Replacement reserve contributions represent the amount that each property is required to deposit into an escrow account for future capital improvements. The current market standard requires that between \$250 and \$350 PUPA be deposited based on development and tenancy types. Because replacement reserve funding is typically

mandatory under a project's partnership agreement, replacement reserve contributions are considered an integral part of operating expenses. After considering an average \$300 PUPA replacement reserve contribution, the national median operating expenses would increase to \$5,630 PUPA. For purposes of this report, total operating expenses include every such expense other than replacement reserve contributions, unless otherwise noted.

We focused further on operating expense data across seven main categories: administrative, insurance, property management fee, property tax, repairs and maintenance, salary and benefits, and utilities, with the goal of understanding which categories are driving the overall increase.



Operating Expense Trend by Category



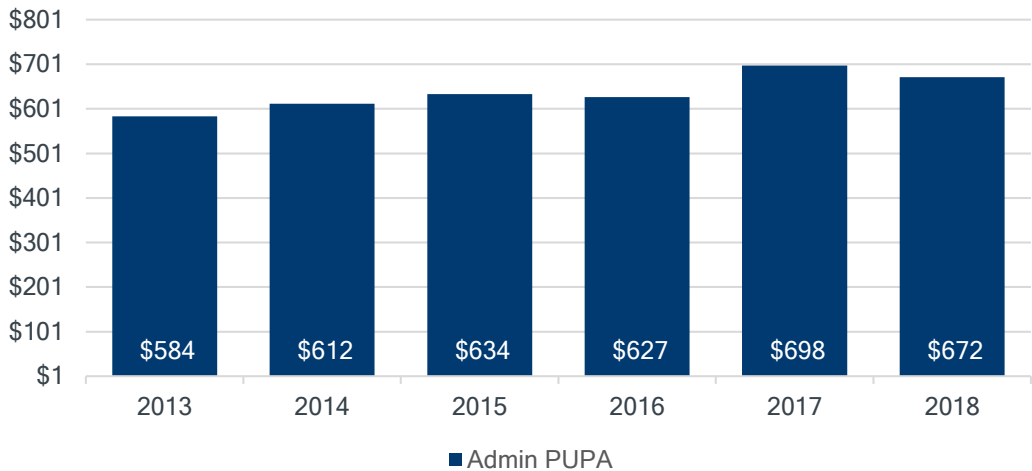
The following is a discussion of some of the most prominent expense line items in a typical housing credit property, either as a percentage of total gross expenses or by percentage year-over-year increase.

Administrative: Administrative expenses in the context of housing credit properties typically include office supplies, marketing, legal, audit, accounting/ bookkeeping, compliance, and other general operating expenses. Legal and audit fees often account for the bulk of the administrative expenses. Project-level legal fees are most commonly associated with

tenant evictions, tenant complaints, and related attorney and court fees. Partnership legal fees, however, are typically paid for using upper-tier reserves.

Some survey respondents indicated that they included bad debt expense and/or office salaries in this line item; however, as part of the data normalization process, we have excluded bad debt (since most analysts believe it should be netted against gross potential rent) and moved office salaries to the “salaries” line item.

Median Administrative Expense Trend





Administrative expense has accounted for approximately 13% of total gross operating expenses on average across the national housing credit portfolio since 2013. Median national per unit administrative expenses have increased by 1.8% annually since 2015.

Repair and maintenance: The actual repair and maintenance expense at a given property can be difficult to pinpoint for several reasons. As a technical matter, the project’s replacement reserve account should be the source for financing the cost of replacing capital items. As a practical matter, however, it is not uncommon to see properties finance capital expenditures (particularly lower-cost items like air conditioners) from operations and treat them as a repair and maintenance expense.

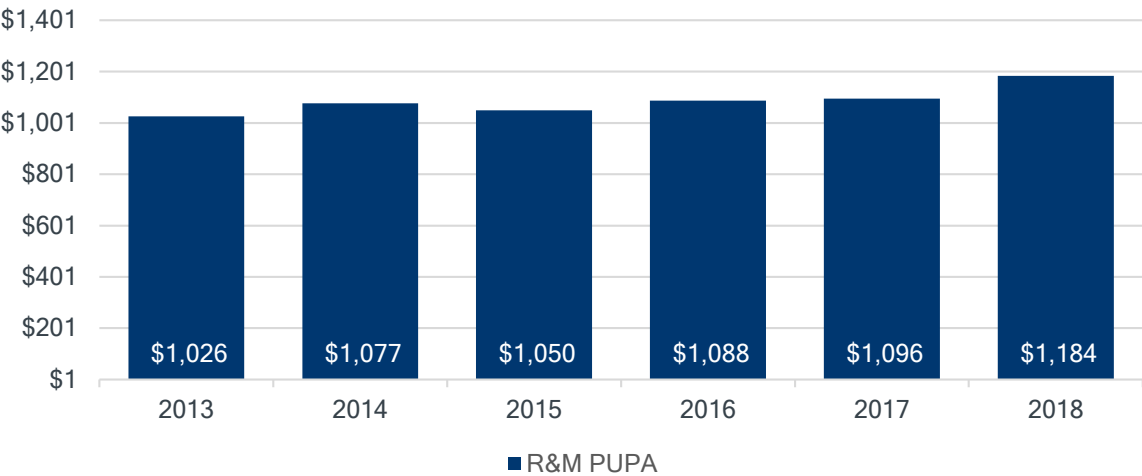
We have relied on the data providers’ judgment and discretion to scrub the repairs and maintenance expenses reported to us to control for capital improvements. Ideally, the repairs and

maintenance line would reflect only ordinary and necessary expenses to maintain a property’s physical plant. We suspect that this expense line would be lower if all capital items were replaced with funds from project replacement reserve accounts. For purposes of our study, we have excluded the salary and benefit costs of maintenance staff in our data collection, so that the figures presented herein control for personnel costs.

Repair and maintenance expense has accounted for approximately 22% of total gross operating expenses on average across the national housing credit portfolio since 2013. Median national per unit repair and maintenance expense have increased by 6.5% annually since 2015.

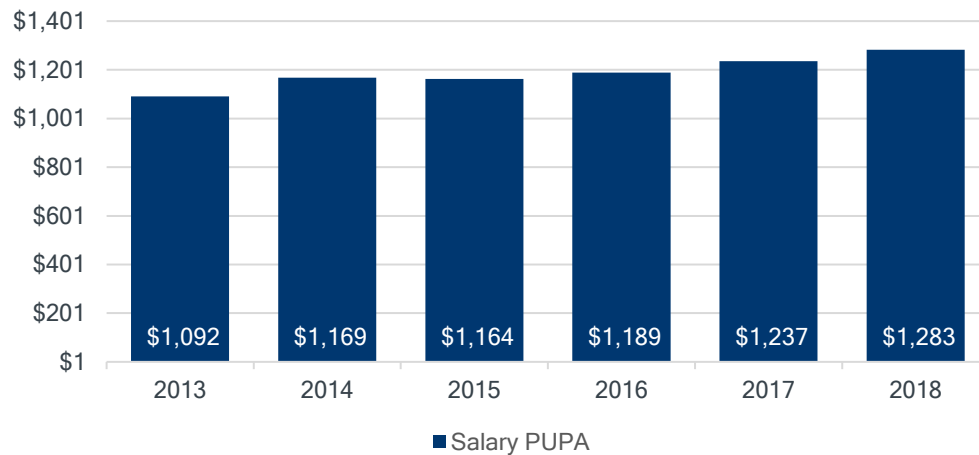
Salary: For a housing credit project, salary expense typically consists of office personnel payroll, maintenance personnel payroll, employee health insurance and benefits, workers’ compensation, payroll taxes, and payroll fees.

Median Repair & Maintenance Expense Trend





Median Salary Expense Trend

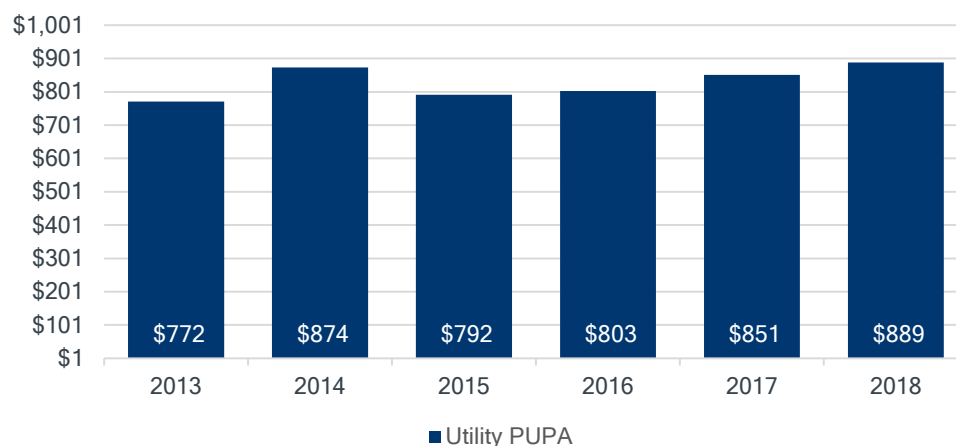


Salary expense has accounted for approximately 24% of total gross operating expenses on average across the national housing credit portfolio since 2013. Median national per unit salary expense has increased by 2.8% annually since 2015.

Utilities: Utility expenses can be one of the most variable operating expenses from one year to the next and from one property to the next. The scope of utilities that are expected to be paid for by the property can vary from one property to the next. The data are reflective of project owner-paid utilities. In

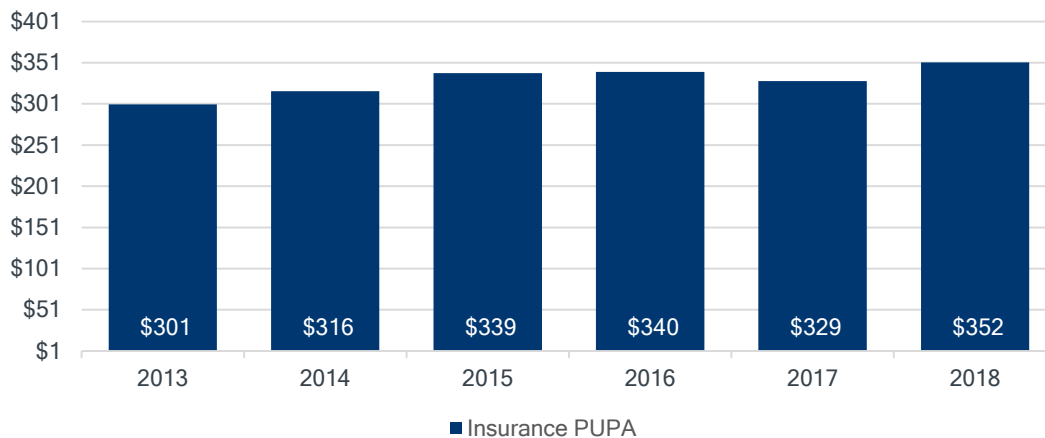
this context, a project's utility expenses are determined first by which utilities are the owner's responsibilities, and then the cost of said utilities. In contrast, tenants' share of utility expenses do not run through a property's operating statement and are estimated through so-called Utility Allowances. Utility Allowances are the estimated utility burden on tenants to ensure that tenants' total burden does not exceed 30% of income. Utility Allowances can be highly variable, ranging from less than \$10 per unit per month (PUPM) to more than \$200 PUPM, depending on the housing authority, the number of utilities and uses covered, and the unit size.

Median Utility Expense Trend





Median Insurance Expense Trend



Utility expense has accounted for approximately 17% of total gross operating expenses on average across the national housing credit portfolio since 2013. Median national per unit utility expense has increased by 2.7% annually since 2015, and increased by 3.6% annually since 2016.

Insurance: Many factors can influence property insurance expense, not least of all the extent of the policy's coverage. Property insurance will typically pay to repair or rebuild a property after a fire, hurricane, hail, lightning, or other listed disaster. However, extraordinary items like flood, earthquake, or terrorism are typically not covered by standard property insurance policies. The level of detail in insurance expense reporting varied among data providers, and in many cases, it was not possible to ascertain if a property carried additional insurance expense for extraordinary items. That said, we collected both conventional property insurance and, where applicable, extraordinary insurance data for each property.

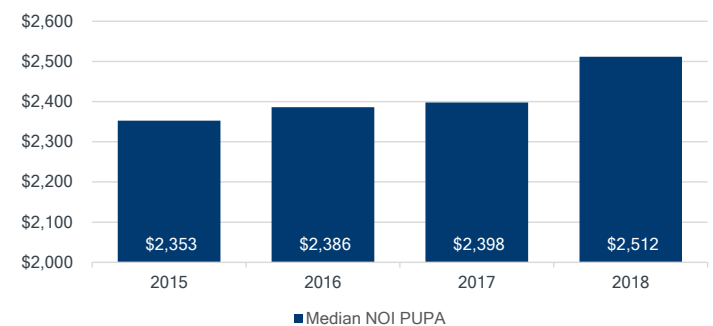
The single biggest driver of the cost of property insurance is a property's physical location and the inherent relative risk of that physical location. As such, a large component of insurance expense is the area's history of natural disasters. That said, insurance expense has accounted for approximately 7% of total gross operating expenses on average across the national housing credit portfolio since 2013. While not as material a line

item as some of those previously discussed, median national insurance expense has increased annually by 1.3% since 2015.

National net operating income trend

Net operating income (NOI) is net rental revenue and net of all operating expenses incurred from operations. NOI does not include the impact of mandatory debt service, depreciation, or replacement reserve funding.

Median NOI Per Unit



Median NOI among the national housing credit portfolio was \$2,512 PUPA in 2018.

For market-specific net revenue, operating expense, and NOI data, we encourage readers to visit <https://www.cohnreznick.com/ppi>, which provides county- and state-level operating metrics.



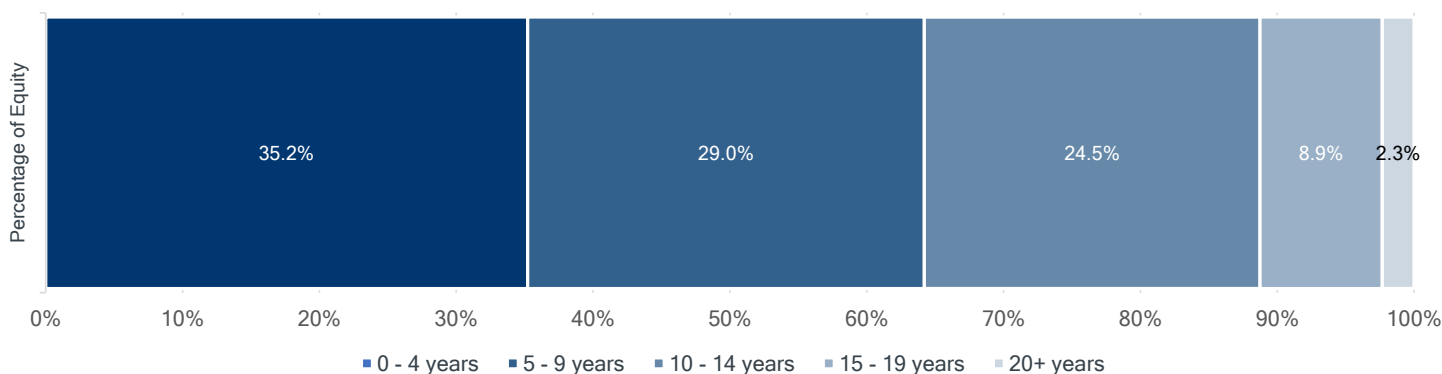
OPERATING PERFORMANCE BY CATEGORY

Performance by property age

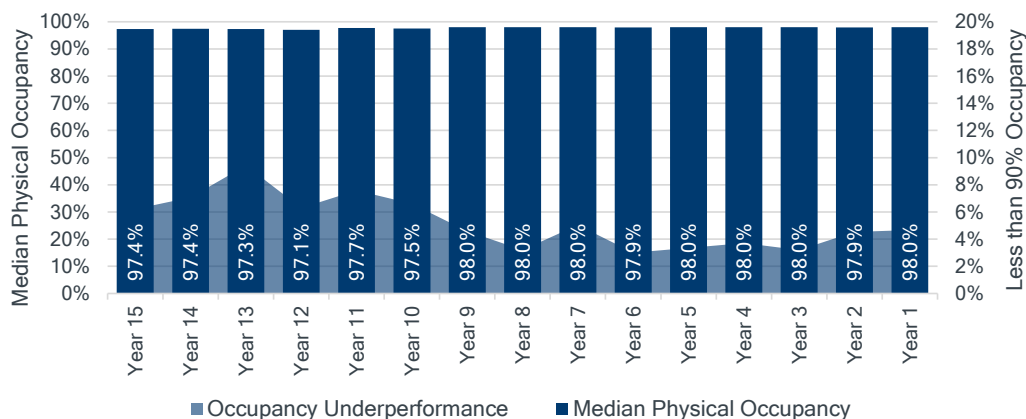
Most properties in the national dataset were between five and 14 years old. More than two-thirds of the properties in the portfolio were within their 15-year compliance period. While all properties were included in the national median calculations, we focused our analysis on those within their tax credit compliance period.

Physical and economic occupancy rates generally tend to decrease slightly over time as properties in the portfolio age. This is likely because deferred maintenance in later years contributes to additional turnover and vacancy losses, or in some cases, a property may have to offer concessions as newer, more attractive housing options become available.

Portfolio Composition by Property Age

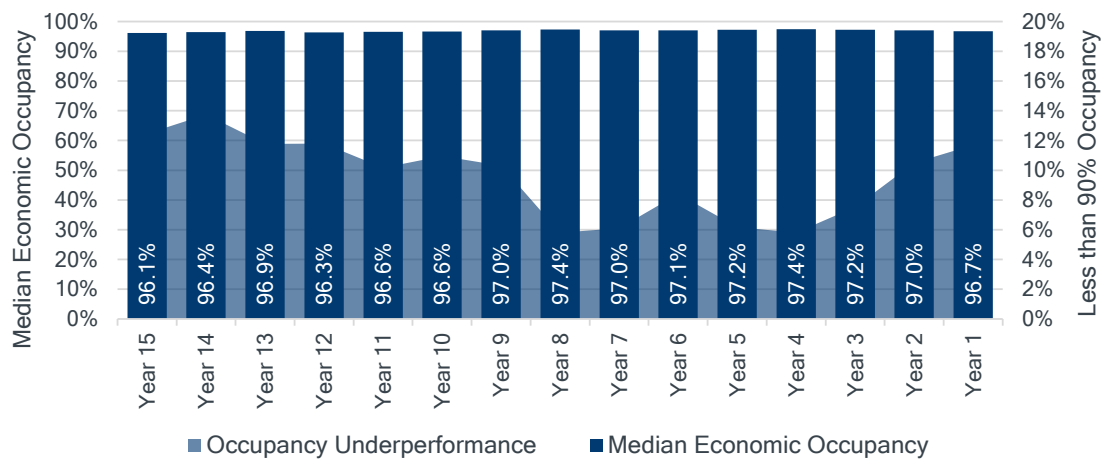


Physical Occupancy by Property Age





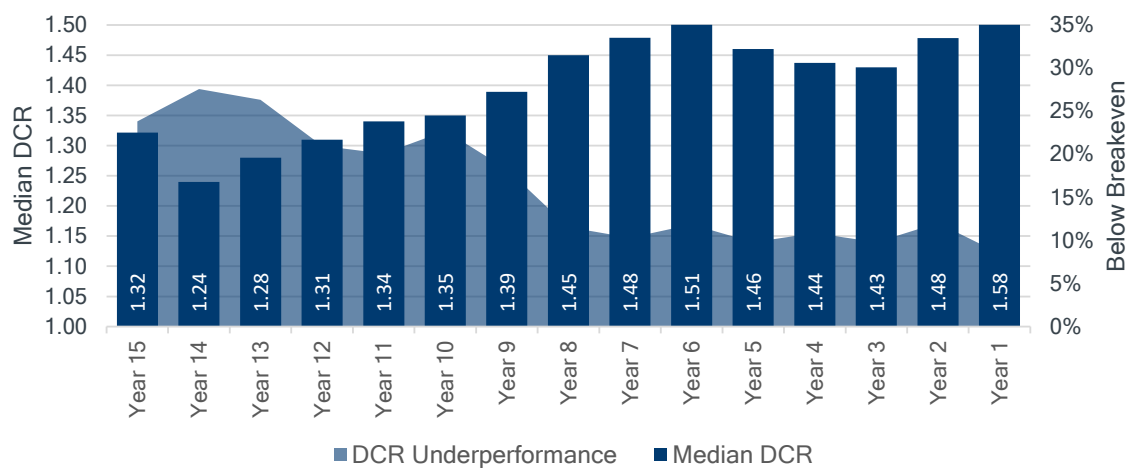
Economic Occupancy by Property Age



Like occupancy, median DCR trended downward following the credit period but hovered in a favorable band between 1.24 and 1.58 over the 15-year lookback period shown in the graph below. At no point does the data show median DCR approaching breakeven. Per unit cash flow underperformance

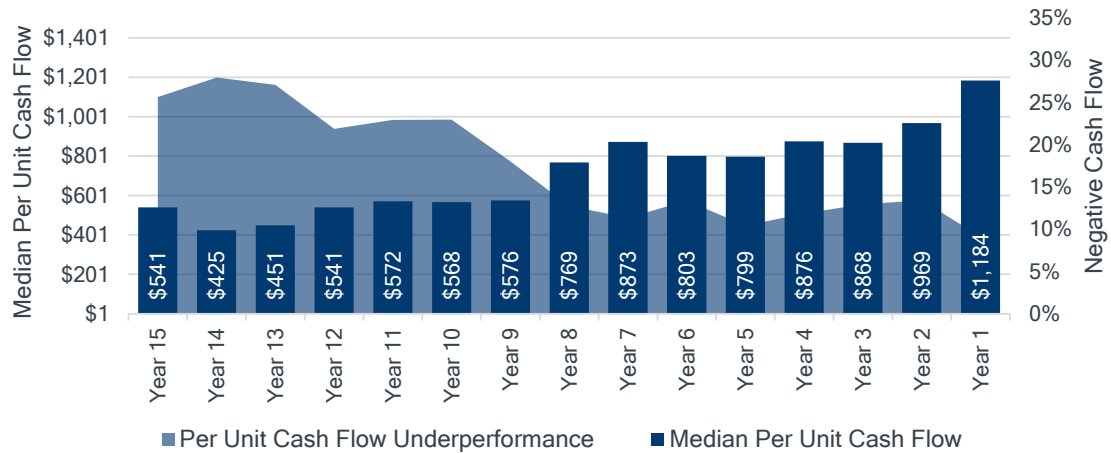
followed a similar trend. As a property ages, repairs and maintenance expenses may rise, additional capital improvement may be on the horizon, and the developer and investor will start to negotiate about their exit strategies.

Debt Coverage Ratio by Property Age





Per Unit Cash Flow by Property Age

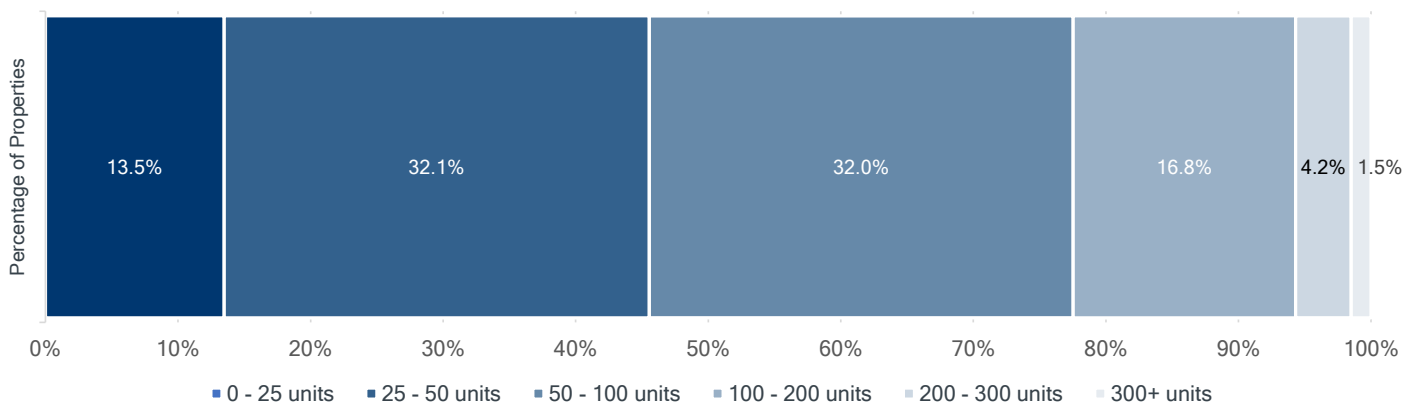


Performance by property size

The following graph illustrates the composition of the national portfolio by property size (number of units). More than two-

thirds of the overall portfolio is composed of properties 100 units or less; the average property contained 78 units.

Portfolio Composition by Property Size

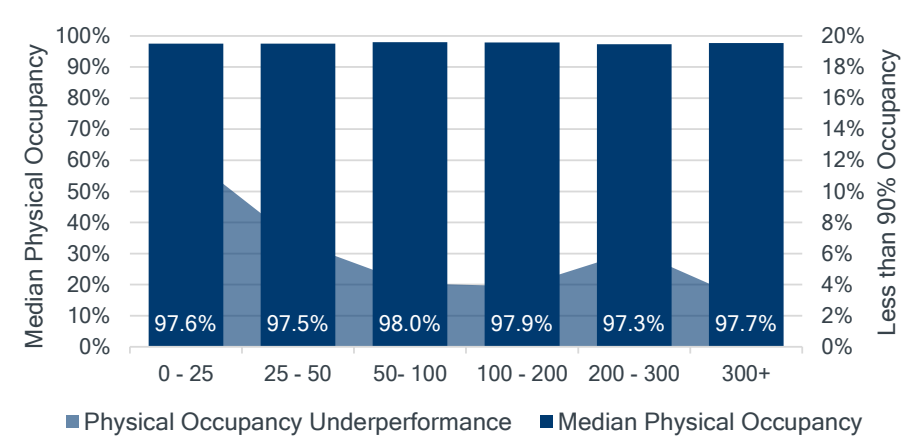




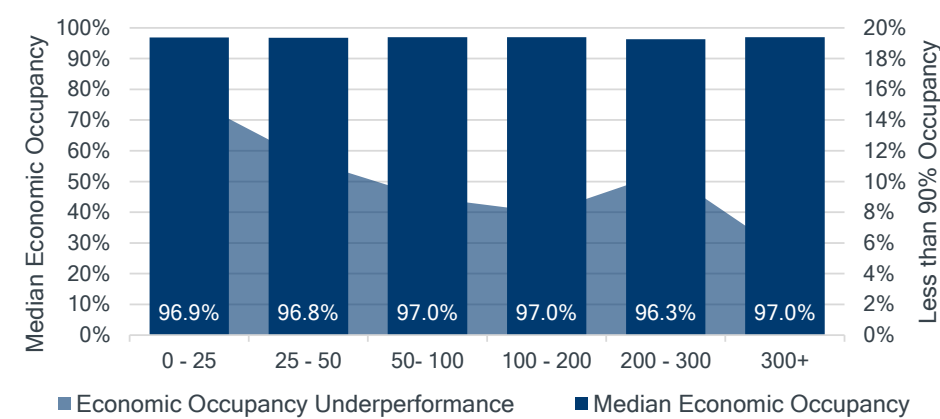
The distribution of median physical occupancy rates trend upward from the smallest properties to a “sweet spot” of properties containing between 51 and 100 units, which exhibited the highest median occupancy rate of 98.0%. Properties containing between 201 and 300 units reported the lowest, nonetheless strong, median physical occupancy rate at 97.3%. We found that 16.2% of the projects (measured by net equity) with 200-plus units were mixed-income developments that consist of at least 15% market rate units.

Similarly, economic occupancy rates reported were uniformly favorable, all greater than 96.3%. Occupancy underperformance was generally more pronounced among properties with fewer units. For most calculations of underperformance in this report, we measured as a percentage of net equity. However, since larger-scale projects would carry more weight than smaller projects (due to the additional equity needed to construct), underperformance in this section is calculated by number of properties instead of net equity.

Physical Occupancy by Property Size



Economic Occupancy by Property Size

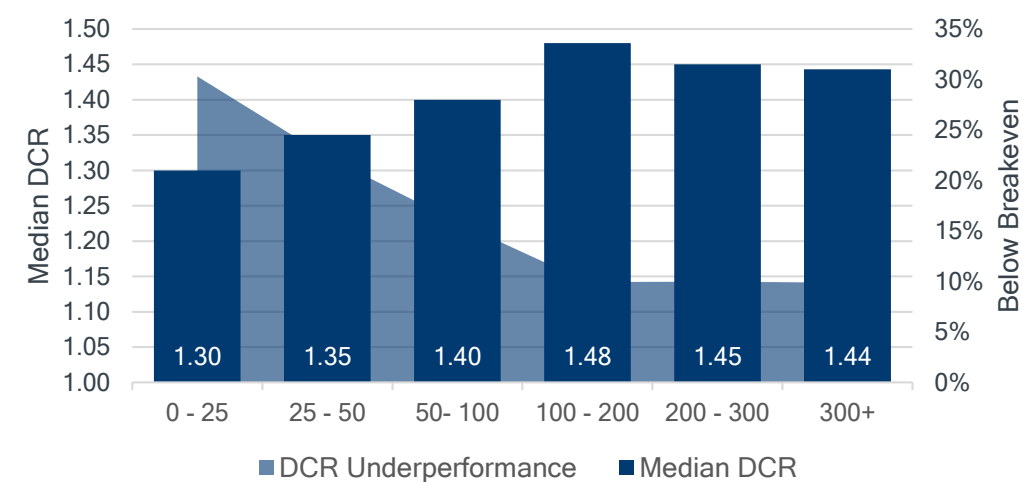




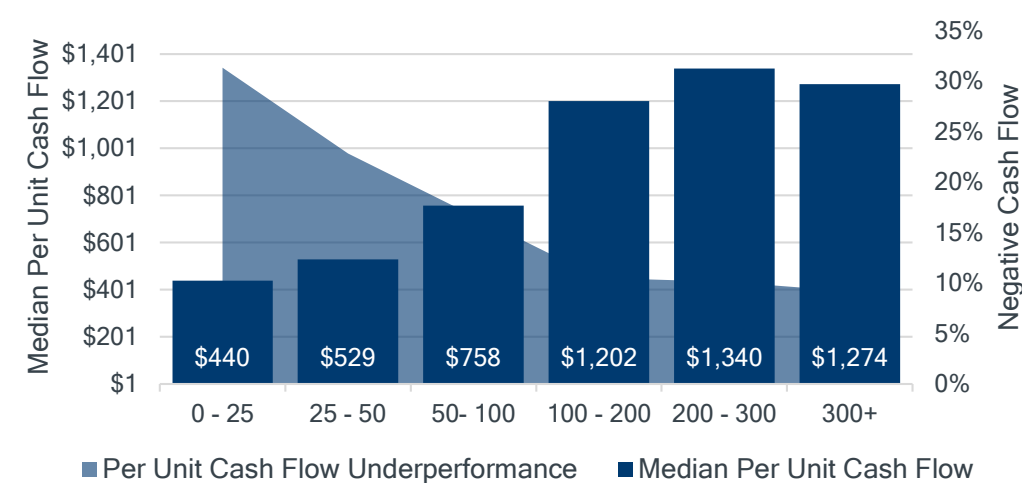
Both median DCR and per unit cash flow generally trend upward as the number of units increases. DCR and cash flow underperformance also largely decrease as properties increase in size. DCR peaked at 1.48 among properties sized

between 101 and 200 units, with those under 25 apartment units per property reporting the lowest median DCR of 1.30. Median per unit cash flow ranged widely from \$440 PUPA to \$1,340 PUPA.

Debt Coverage Ratio by Property Size



Per Unit Cash Flow by Property Size





Properties with fewer units must distribute their fixed costs over a more limited base of apartment units relative to their larger peers, which leads to lower DCR and per unit cash flow. Besides economies of scale, however, there are many other factors that tend to collectively influence this trend, such as a property's location and age.

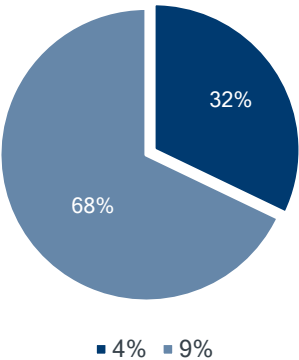
Performance by credit type

There are two types of low-income housing tax credits under the Internal Revenue Code Section 42: The 9% credits are available to support new construction or rehabilitation projects that are not considered federally subsidized; the 4% credits are available to support new construction or rehabilitation projects that are financed with tax-exempt bonds, or the acquisition costs of existing buildings. While the actual value varies based on several factors, 9% and 4% credits are designed to subsidize 70% and 30% of the low-income unit costs in a project.

The following graphs illustrate the composition of the national portfolio by credit type. Notably, the 9% credit properties in the portfolio averaged 60 units, while the 4% properties averaged 120 units. As a result, while 4% credit properties represented

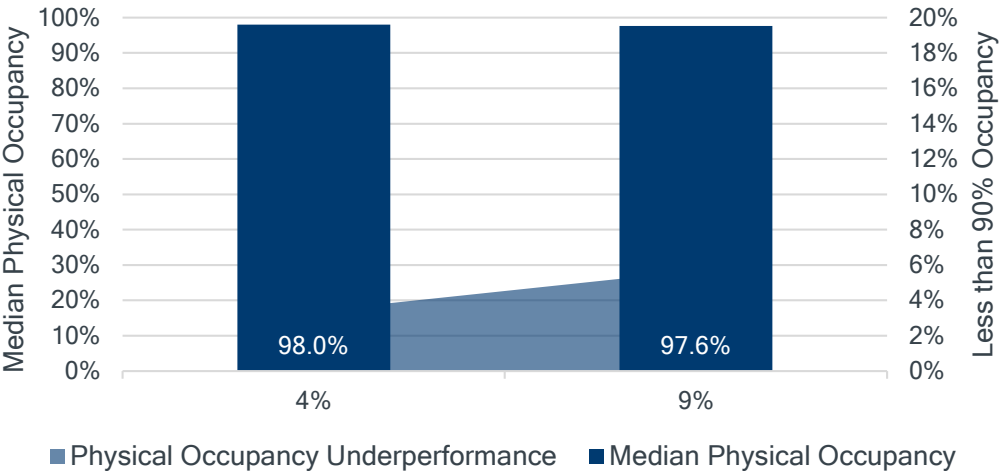
approximately 32% of the portfolio, these properties produced nearly the same number of affordable housing apartment units as their 9% counterparts.

Portfolio Composition by Credit Type



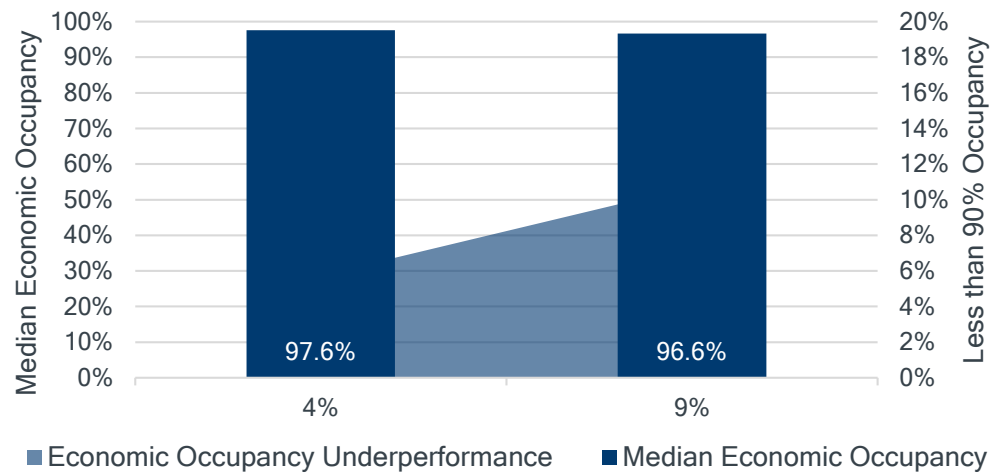
As a general matter, 9% projects are more heavily financed by investor equity and thus have a more modest level of hard debt service. Tax-exempt bond projects that qualify for 4% credits generate significantly lower levels of tax credit equity and thus require higher debt levels (albeit at lower tax-exempt interest rates).

Physical Occupancy by Credit Type



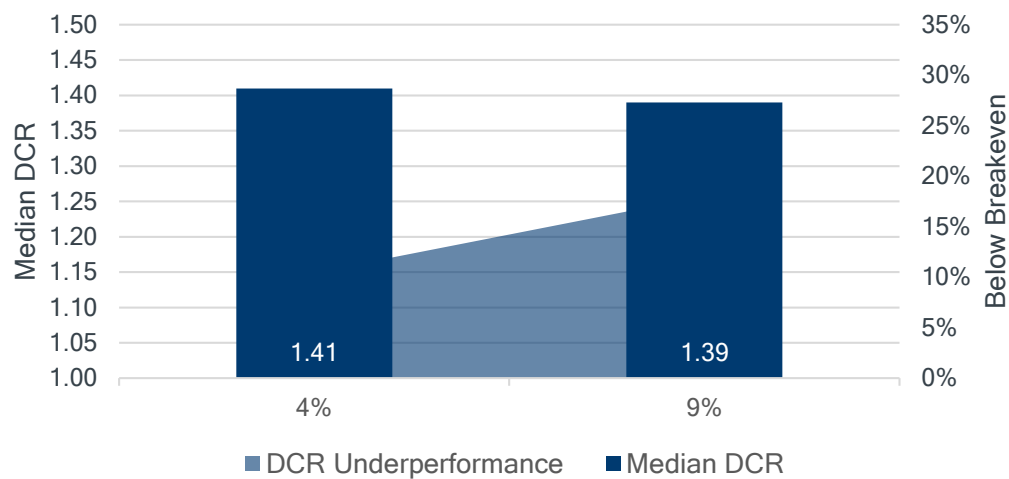


Economic Occupancy by Credit Type



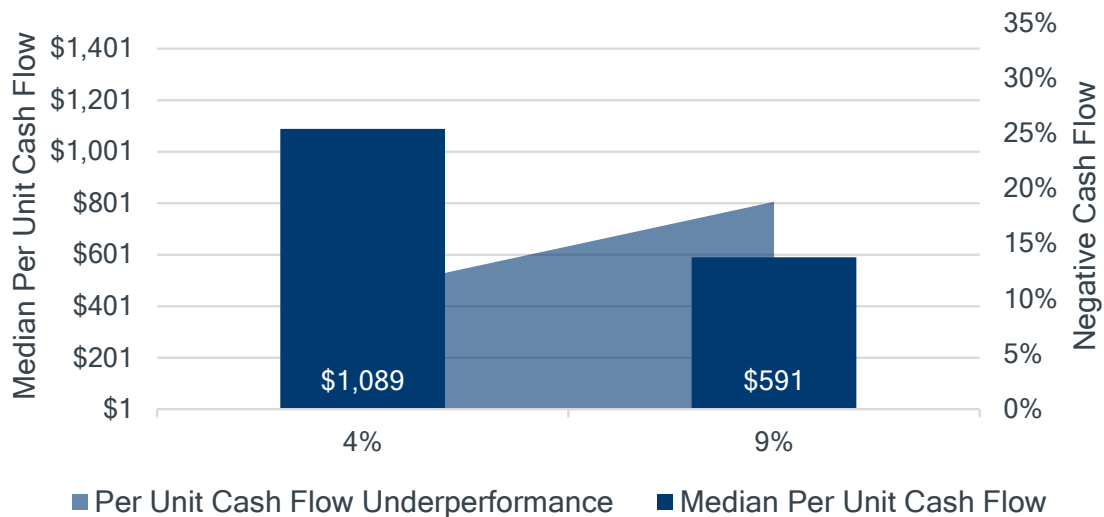
4% credit properties marginally outperformed their 9% counterparts from a physical and economic occupancy perspective.

Debt Coverage Ratio by Credit Type





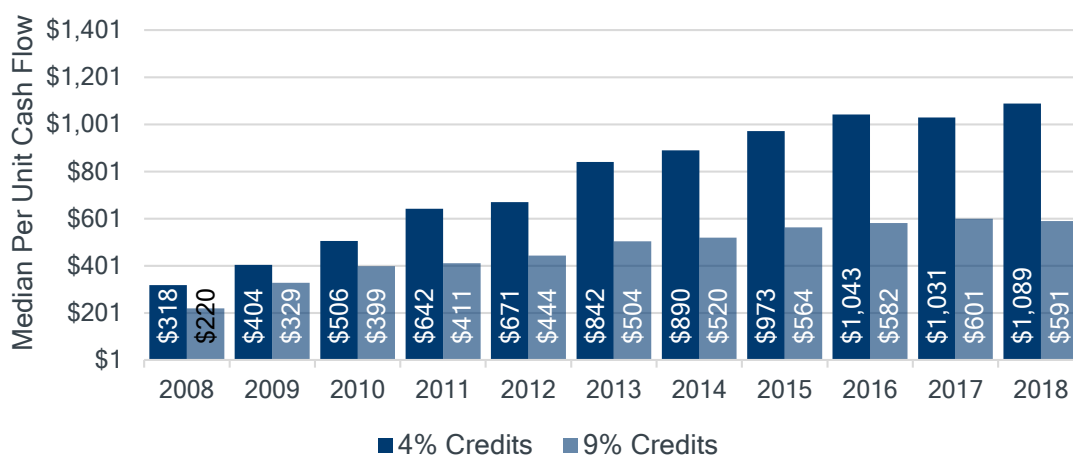
Per Unit Cash Flow by Credit Type



Despite the fact that 4% credit projects are typically financed with more hard debt than their 9% peers that have the luxury of relying more heavily on investor equity, like occupancy, there is little variance between median debt coverage ratios by credit type.

While we have not observed significant differences between the DCR performances of 4% versus 9% properties, the 4% credit properties we surveyed have reported consistently higher levels of cash flow than their 9% counterparts. Indeed, the spread between the two categories' median per unit cash flow has grown from roughly \$100 in 2008 to nearly \$500 in 2018.

Per Unit Cash Flow by Credit Type: 2008-18



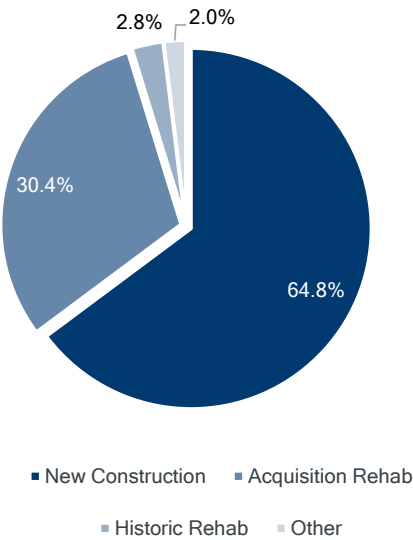


We attribute this in large part to the fact that a significant portion of 4% housing credit properties also benefit from some form of operational subsidy or rental assistance, thus increasing the revenue potential. Of the surveyed portfolio, 48% of the 4% properties reported some form of project-based rental assistance, of which 67% are acquisition/rehab projects. Also, as noted, 4% properties are generally larger and can thus allocate their fixed costs over a broader base of units, which can create higher levels of per unit cash flow. On the flip side, when a large-scale 4% property underperforms, the deficits tend to be larger and therefore harder to cover.

Performance by development type

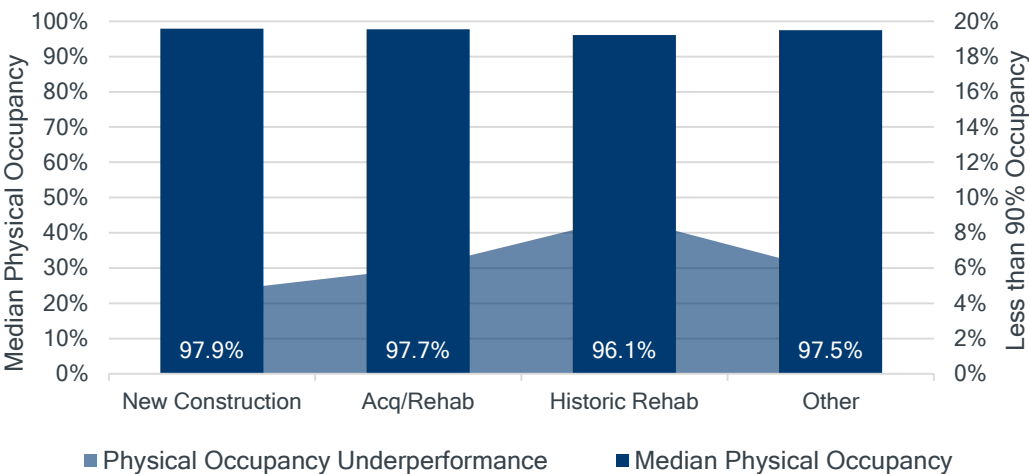
Properties in the national portfolio fall into one of the following development types: new construction, acquisition rehabilitation, historic rehabilitation, and other. Newly constructed properties accounted for 64.8% of the net equity surveyed, acquisition rehab properties accounted for 30.4% of net equity surveyed, and historic rehabs accounted for 2.8% of total net equity surveyed. The remaining 2% of the portfolio were mixed or unspecified development types.

Portfolio Composition by Development Type



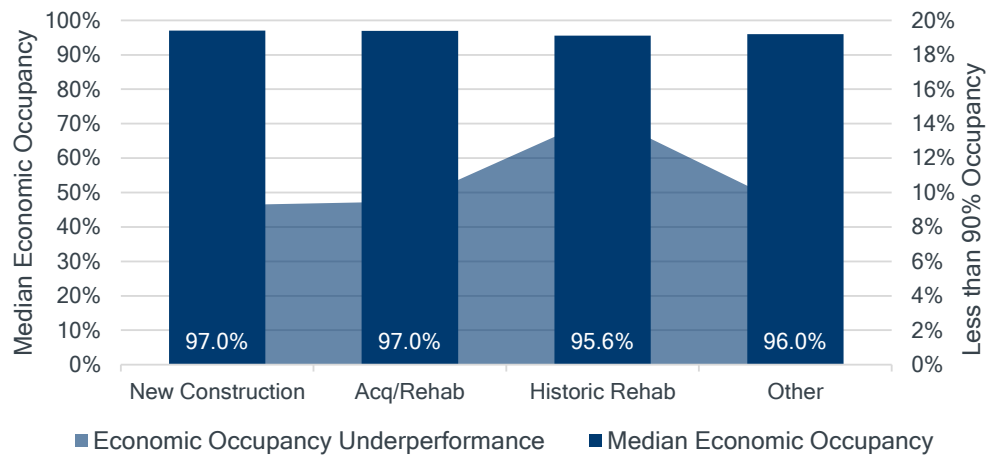
New construction properties reported the highest median physical occupancy among all development types at 97.9%. Acquisition rehabs and other construction types followed close behind new construction properties at 97.7% and 97.5% respectively.

Physical Occupancy by Development Type





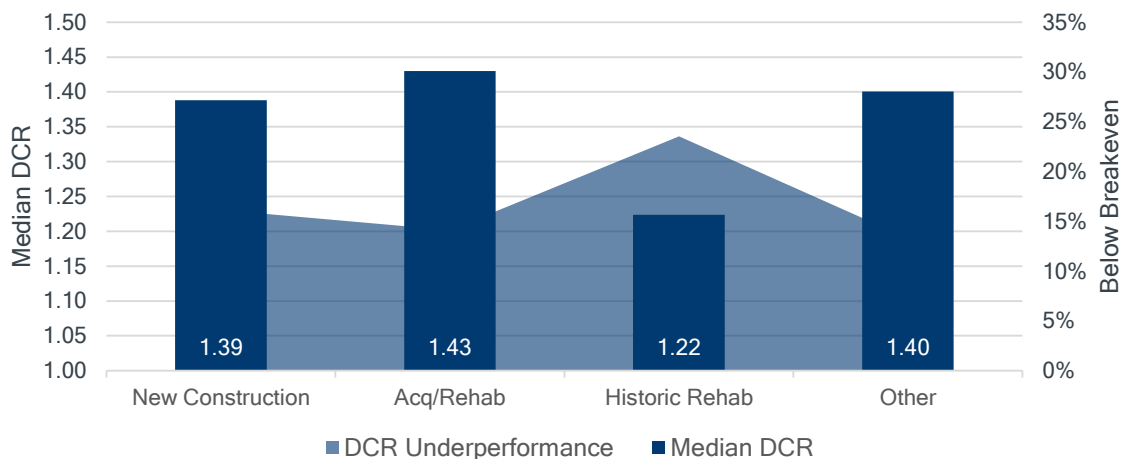
Economic Occupancy by Development Type



The data suggest that historic rehabs tend to underperform from an occupancy perspective relative to other development types. Historic rehab properties in our surveyed portfolio were 96.1% physically occupied and roughly 95.6% economically occupied, both of which were below the national median levels.

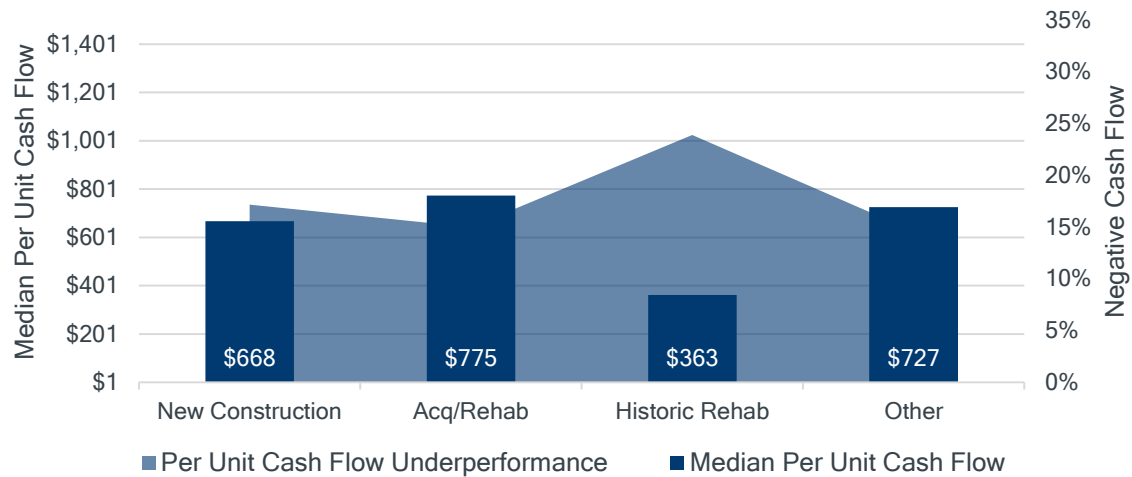
While the performance of this subset is less favorable than the national median, the sample size is relatively small, consisting of fewer than 600 properties (or 2.8% of the surveyed portfolio in terms of net equity), and thus can be more impacted by a small number of outlier properties than other property types.

Debt Coverage Ratio by Development Type





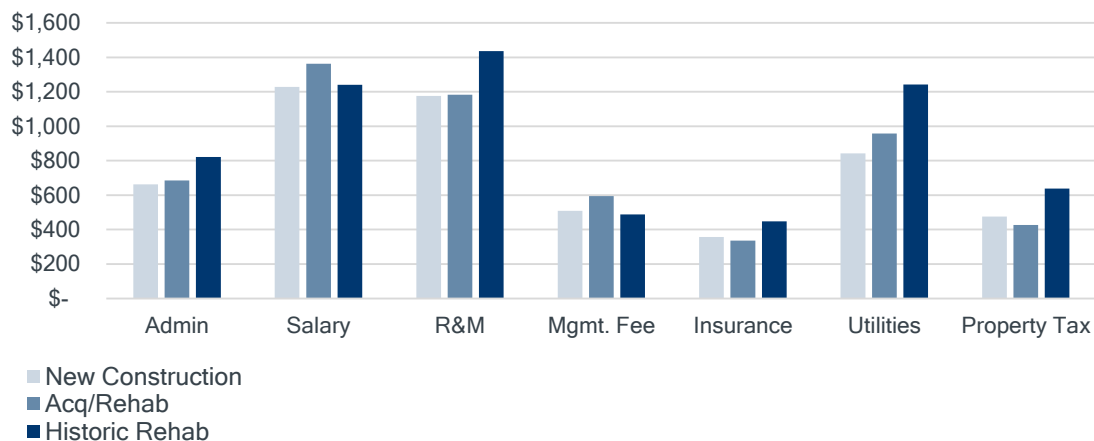
Per Unit Cash Flow by Development Type



Acquisition rehab properties reported the highest median DCR and per unit cash flow of all the development types at 1.43 and \$775, respectively. Historic rehabs reported the lowest median DCR and per unit cash flow. Operating expense data show that historic rehab properties, on a median per unit basis, generate higher operating expenses, and significantly higher

administrative, repair & maintenance, and utility expenses, which can serve to depress operating performance relative to the other development types if not accounted for in initial underwriting. The following graph illustrates the median per unit operating expenses by development type.

Median 2018 Per Unit OPEX by Development Type



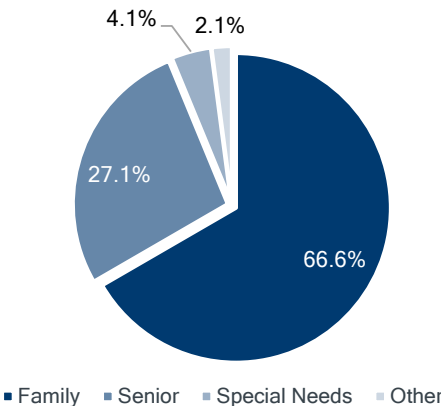


Performance by tenancy type

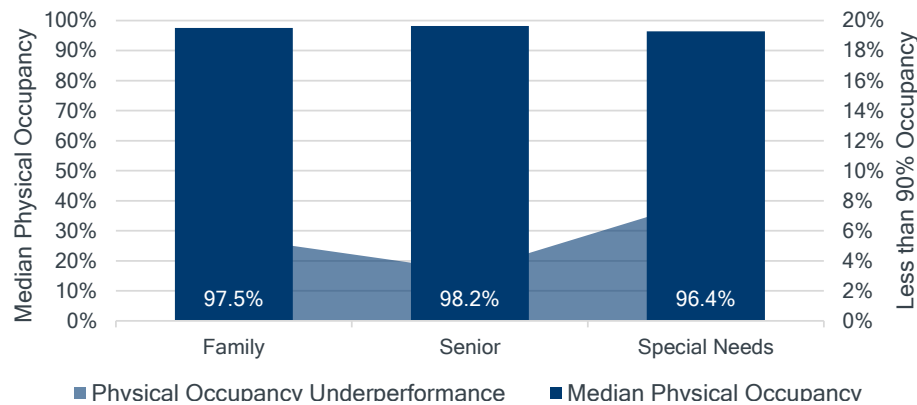
The national portfolio of properties fall into one of the following tenancy types: family, senior, special needs, and other.

Consistent with prior studies, properties with senior-restricted tenancy, representative of approximately 27.1% of the portfolio, reported the strongest physical and economic occupancy rates. Both the median physical and economic occupancy rates ranged from 96.2% to 98.2% for all tenancy types.

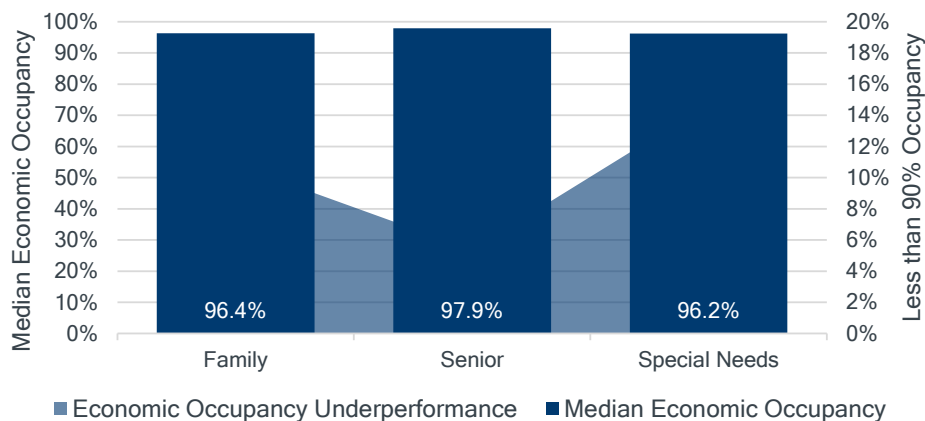
Portfolio Composition by Tenancy Type



Physical Occupancy by Tenancy Type



Economic Occupancy by Tenancy Type

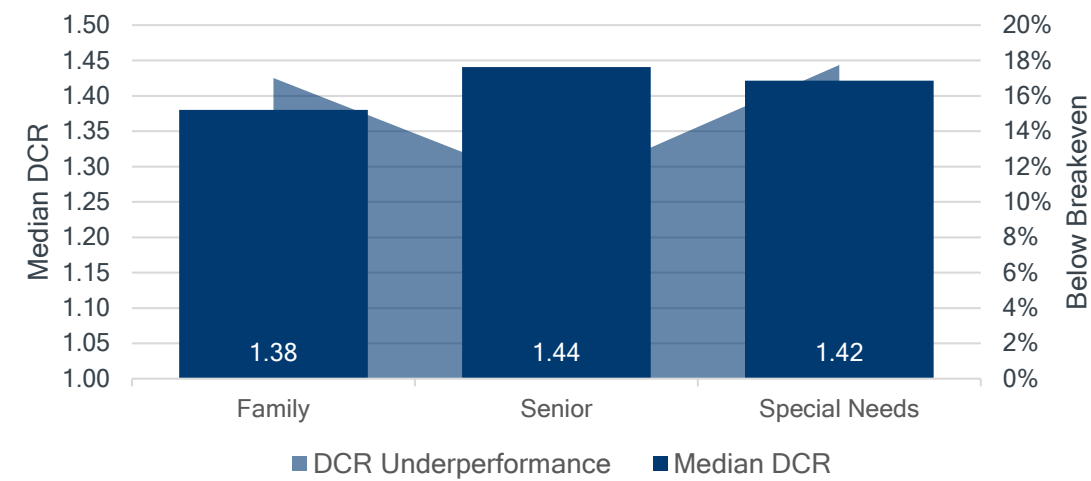




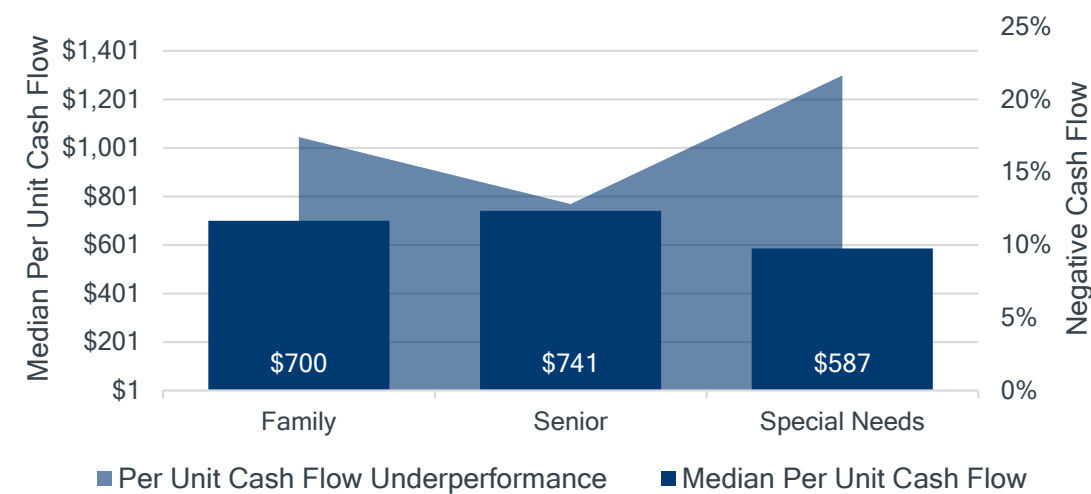
Aside from special needs properties, which exhibited slightly higher incidence of occupancy underperformance, all other

tenancy types generally reported low levels of physical and economic occupancy underperformance.

Debt Coverage Ratio by Tenancy Type



Per Unit Cash Flow by Tenancy Type

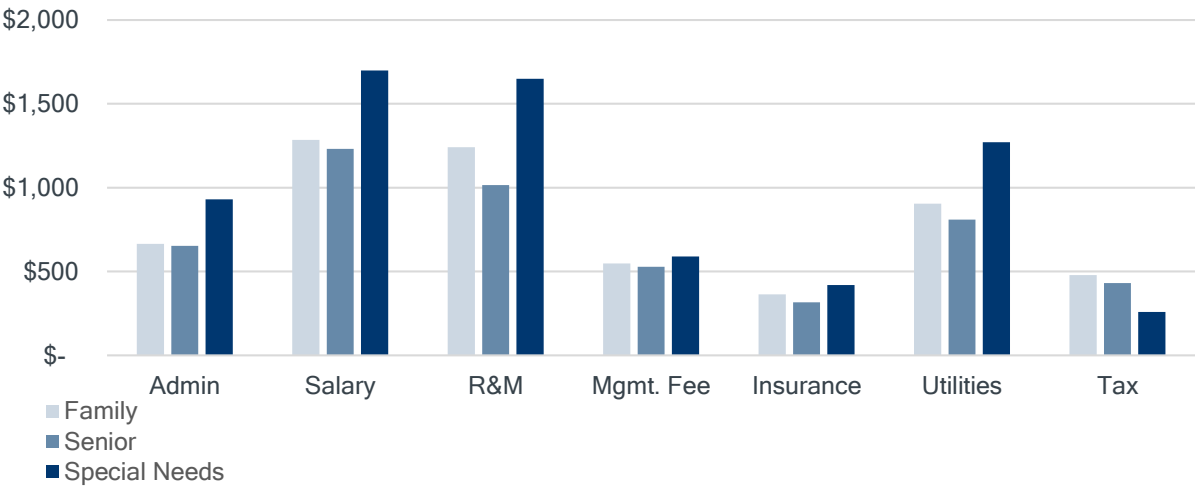




From a median DCR and per unit cash flow perspective, senior properties once again outperformed the other tenancy types. DCR underperformance is largely uniform among family and special needs properties, hovering around 17%, aside from, once again, senior properties, which reported just over 10% DCR underperformance.

The following graph illustrates the median 2018 operating expenses by tenancy type. Special needs properties exhibited significantly higher administrative, salary, R&M, and utility expenses, which is not surprising given the additional operational scope required at many special needs properties. The higher expense can serve to depress operating performance relative to the other tenancy types if not accounted for in initial underwriting.

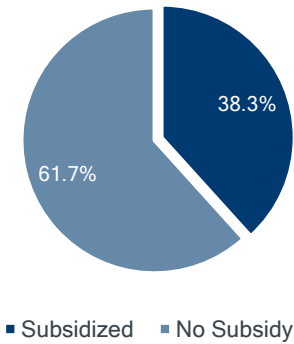
Median 2018 Per Unit OPEX by Tenancy Type



Portfolio Composition by Subsidy

Performance by availability of rental assistance

Properties that are considered subsidized for purposes of this report may have all or a portion of their units covered under a subsidy contract. As a percentage of total equity, subsidized properties account for 38.3% of the overall portfolio.

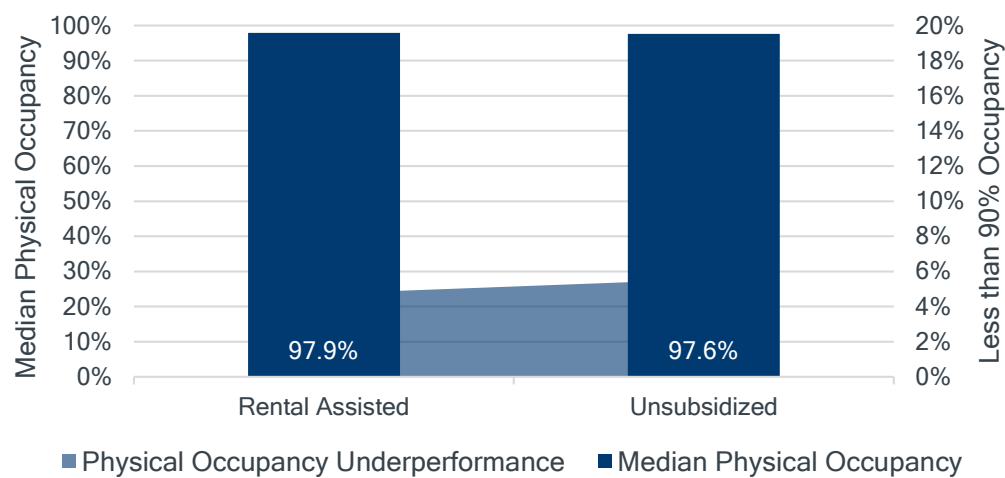




While the availability of rental assistance is commonly viewed as a plus for housing credit properties (and sometimes even a critical component of a project’s overall feasibility), it does not seem to be a key driver of property occupancy performance

portfolio-wide. Given the immense demand for affordable housing in virtually every market, non-subsidized projects perform nearly as well as subsidized projects from a physical occupancy standpoint.

Physical Occupancy by Rental Assistance

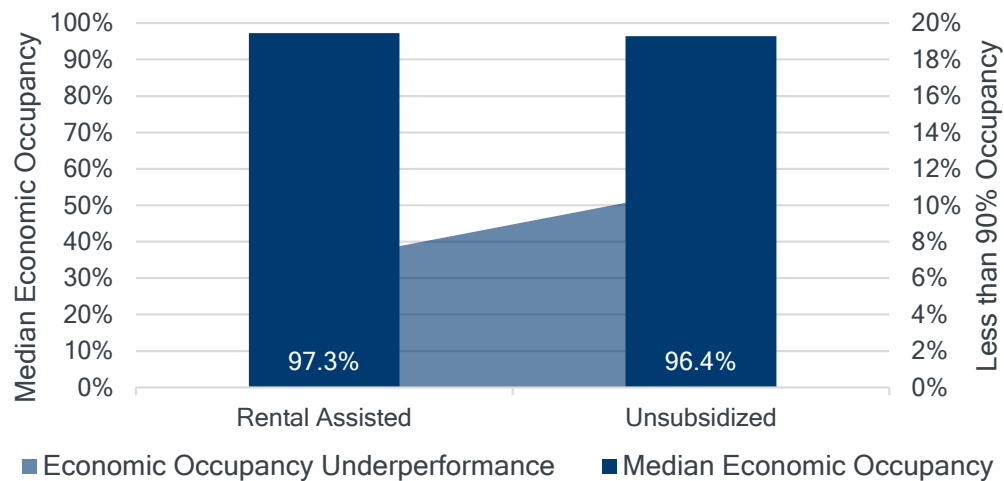


Economic occupancy, however, is a slightly different story. Tenants at non-subsidized housing credit projects are responsible for the entirety of their rent, even if their income fluctuates. In the case of subsidized projects, tenants contribute no more than 30% of their adjusted gross income toward rent and utilities, with the balance covered by the rental assistance contracts. Provided rental assistance is in place,

tenants can theoretically earn zero income and rely exclusively on the subsidy for rent payments. Economic occupancy among this cohort exceeds non-subsidized properties by 90 basis points on a median basis, which may be attributable to the fact that subsidized properties tend to have less rent skip, fewer unit turnovers, and lengthy waiting lists that can be used to fill any turnover units quickly.



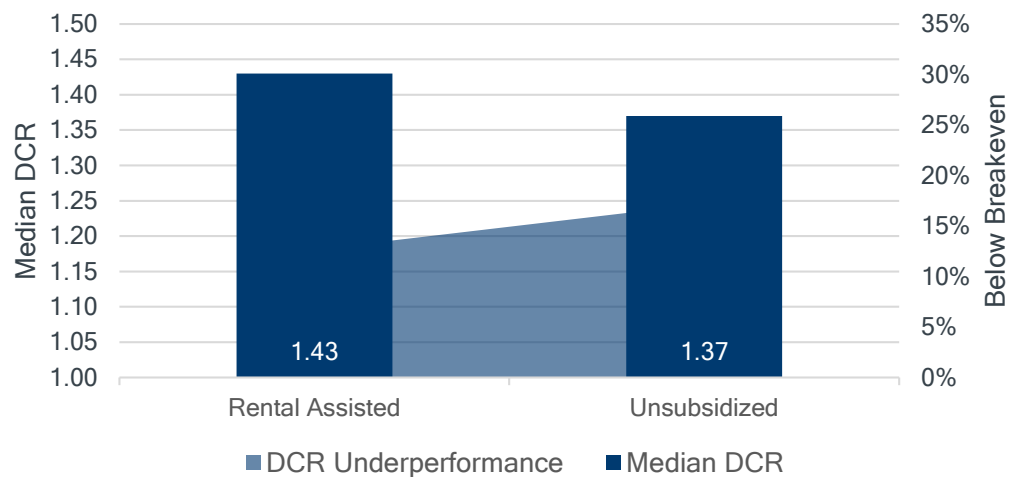
Economic Occupancy by Rental Assistance



Similarly, it is logical that properties with rental assistance would report stronger DCR and higher per unit cash flow compared to non-subsidized properties because subsidy rents, in many

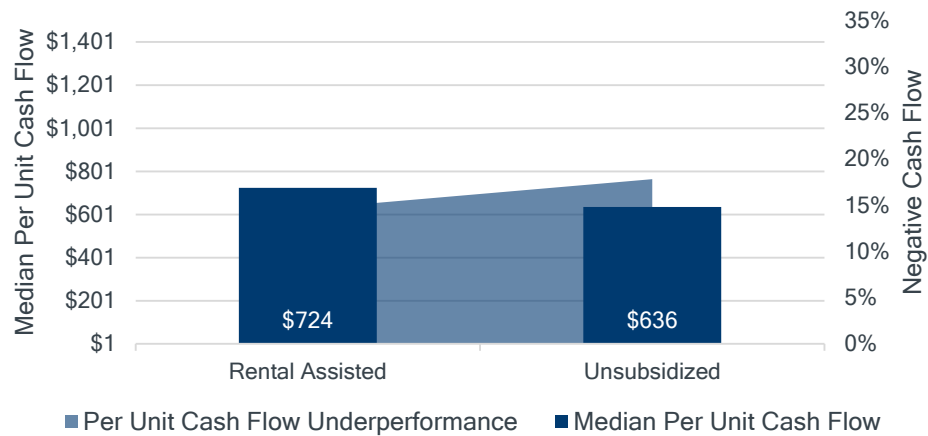
cases, exceed the tax credit programmatic rents. Nonetheless, properties without rental assistance still exhibited strong median DCR of 1.37 and per unit cash flow of \$636 in 2018.

Debt Coverage Ratio by Rental Assistance





Per Unit Cash Flow by Rental Assistance

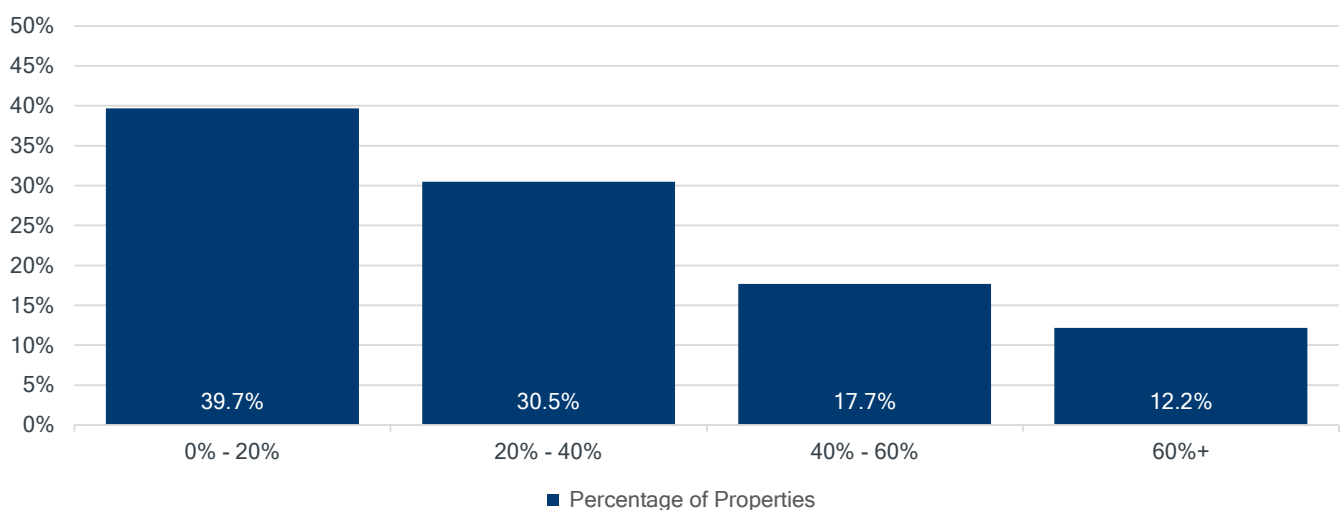


Performance by hard debt leverage ratio

Periodic pricing shocks aside, as housing tax credit prices have generally trended upward over time, the median hard debt ratio has receded. However, the impact of the 2016 presidential election and subsequent tax reform has created financing gaps for many properties, and as soft debt becomes harder and harder to secure, properties are being financed with more hard debt.

Recent trends notwithstanding, most of the overall portfolio reported hard debt leverage ratios of 40% or less. The hard debt leverage ratio measures the portion of a project's total development costs that are financed with hard debt, i.e., those requiring a fixed amount of periodic debt service payments.

Portfolio Composition by Hard Debt Ratio

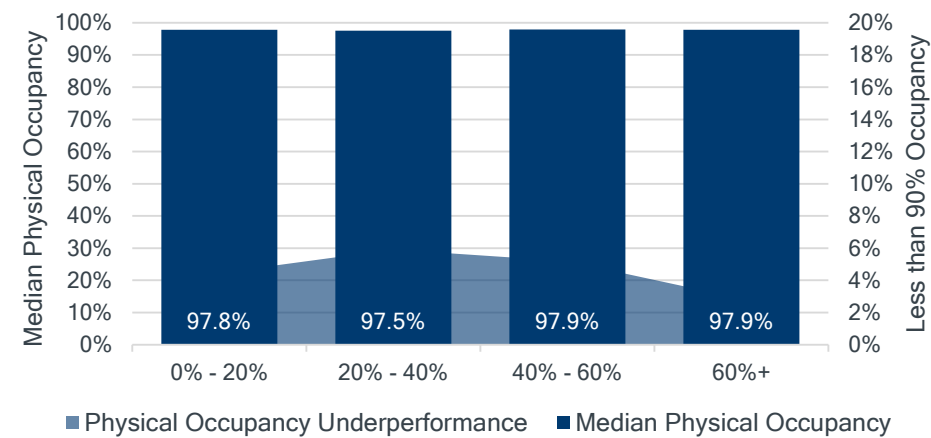




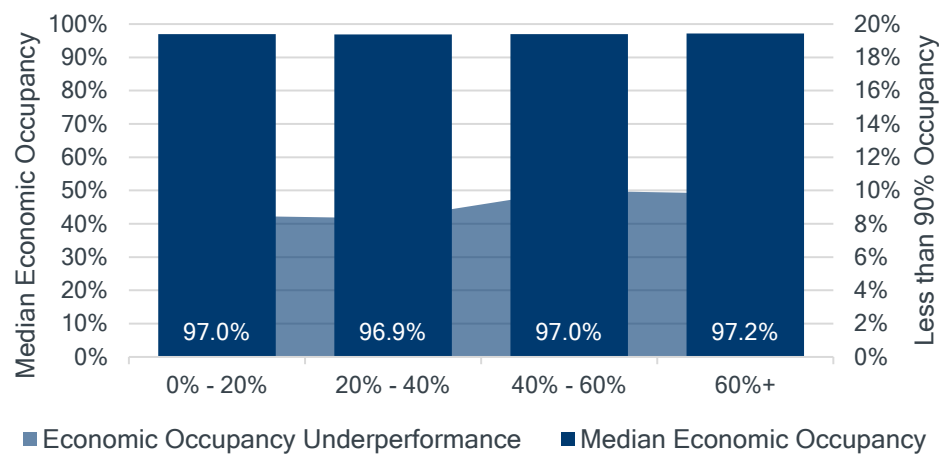
For all four hard debt ratio ranges, economic occupancy rates were clustered in tight bands between 96.9% and 97.2%. The data suggest that a property’s hard debt ratio has little bearing on its occupancy performance.

Properties with less than 20% leverage reported the most favorable median DCR results in 2018. The most heavily leveraged segment reported a strong median DCR of 1.38 and, in fact, the highest median per unit cash flow of \$1,285 in 2018.

Physical Occupancy by Hard Debt Ratio

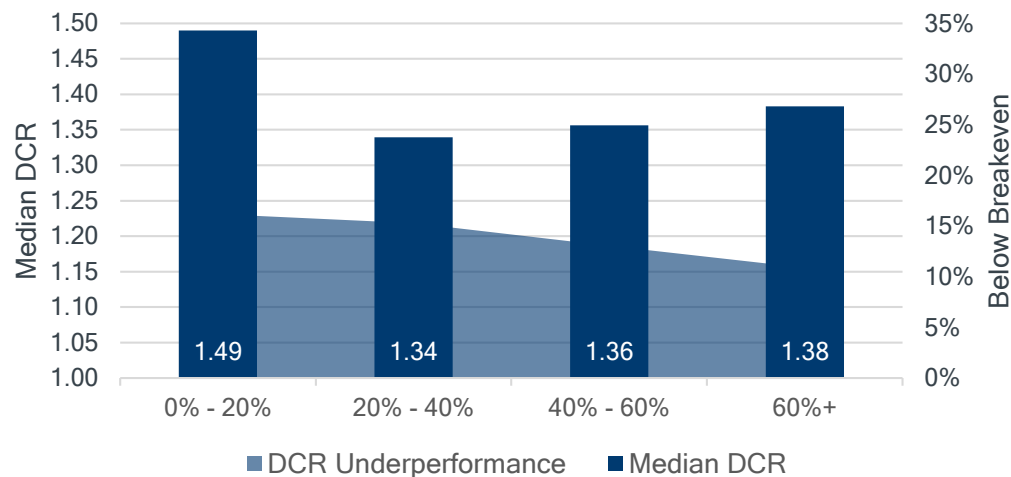


Economic Occupancy by Hard Debt Ratio

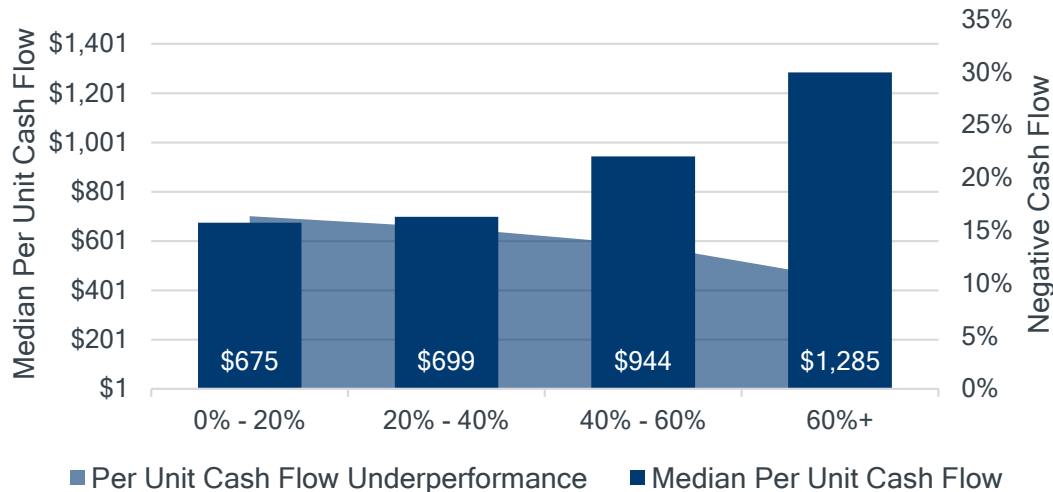




Debt Coverage Ratio by Hard Debt Ratio



Per Unit Cash Flow by Hard Debt Ratio



We found that the most highly leveraged properties also tended to be the largest by unit count. Properties with less than 20% leverage reported 62 units per property on average, versus 110 units among the 60%+ leveraged properties. Additionally, the most highly leveraged developments are likely to be 4% credit properties, which, if performing smoothly, could more easily generate significant cash flows.

Performance by Location Type – Metropolitan / Non-Metropolitan Counties

To consistently define location types, CohnReznick utilized the Rural-Urban Continuum Codes from the U.S. Department of Agriculture (USDA) as applied to official U.S. Census Bureau data. The Rural-Urban Continuum Codes classify metropolitan counties by the population size of their metro



area and nonmetropolitan counties by degree of urbanization and adjacency to a metro area. The official OMB metro and nonmetro categories have been subdivided into three metro and six nonmetro categories. Each county in the U.S. is assigned one of the nine codes. Descriptions of the nine codes are as follows:

Metropolitan Counties

Code	Description
1	Counties in metro areas of 1 million population or more
2	Counties in metro areas of 250,000 to 1 million population
3	Counties in metro areas of fewer than 250,000 population

Non-Metropolitan Counties

Code	Description
4	Urban population of 20,000 or more, adjacent to a metro area
5	Urban population of 20,000 or more, not adjacent to a metro area
6	Urban population of 2,500 to 19,999, adjacent to a metro area
7	Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area

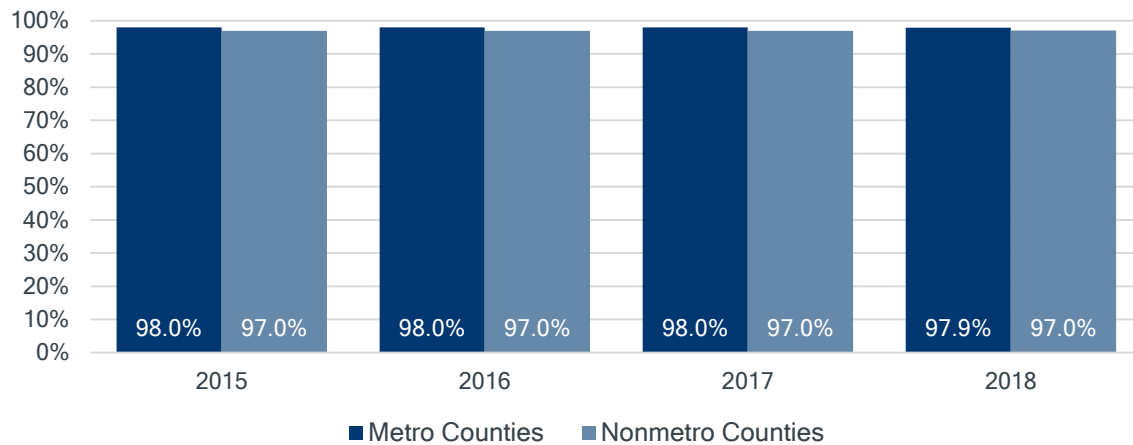
The nine codes allow the ability to break county data into finer groups, beyond metro and nonmetro; but for purposes of this report, we focused solely on the metro and nonmetro designations.

The data show that housing credit properties in metro counties historically accounted for roughly three-quarters of the overall portfolio. Not only did metropolitan properties outnumber nonmetropolitan properties by nearly 3:1, but there were also significantly more metropolitan housing credit units than nonmetropolitan because on average, metro housing credit properties contained 87 units, while nonmetro properties contained 47 units. While the smaller scale in rural developments is expected given the demographic patterns, it also presented some challenges in attracting efficient capital.

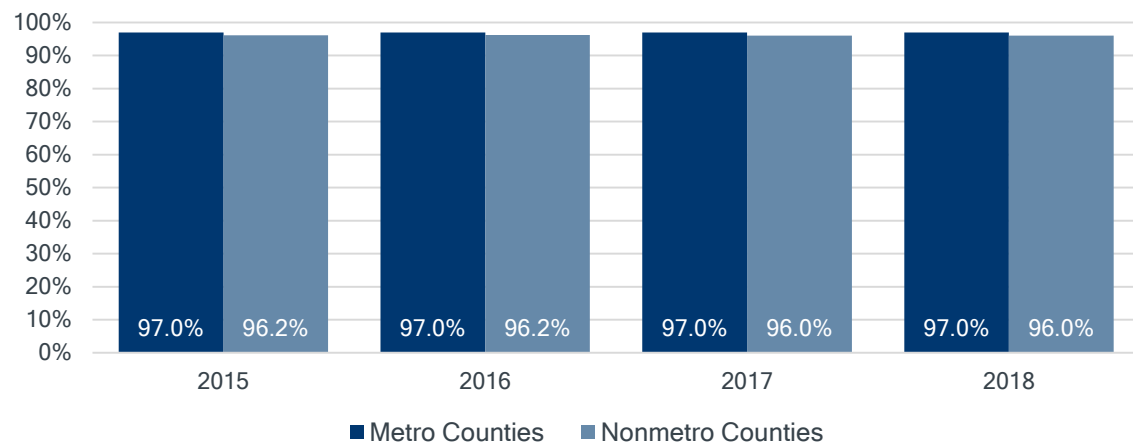
The data show that there is a 90-100 basis point variance between properties located in metro and nonmetro counties in terms of median physical occupancy in 2017 and 2018, respectively. Similarly, there is a 100-basis point variance between properties located in metro and nonmetro counties in terms of median economic occupancy in 2017 and 2018. While metro counties were on par with the national median economic occupancy rate, nonmetro counties lagged slightly behind.



Physical Occupancy by County Type: 2015-18



Economic Occupancy by County Type: 2015-18



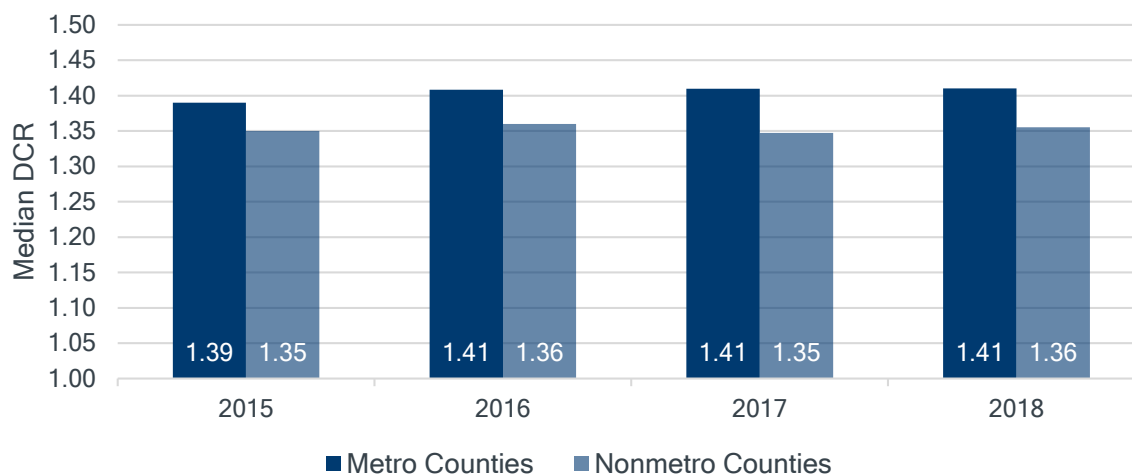
A few vacant units at smaller properties can easily drop occupancy into underperformance territory. Given that nonmetro properties were significantly smaller on average than metro properties, and therefore more sensitive to individual unit vacancies, it is not surprising that the median physical and

economic occupancy rates trailed their metro counterparts and national medians.

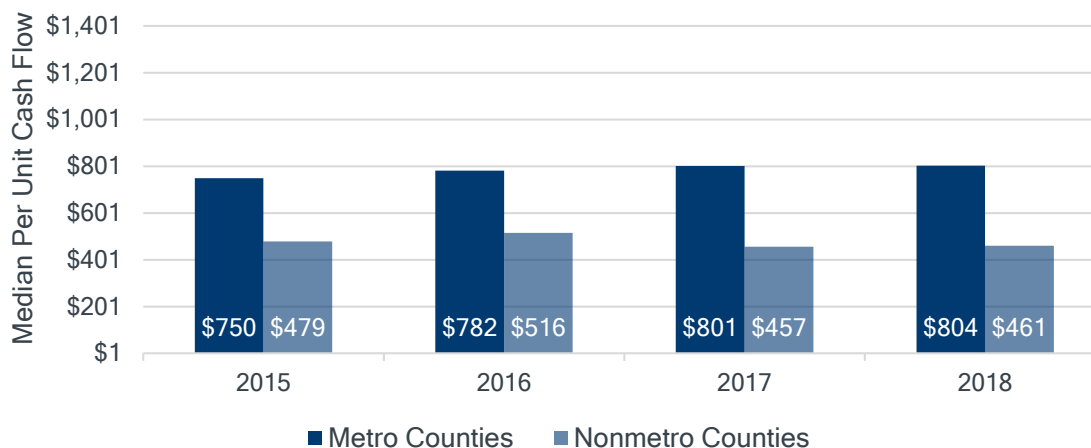
Similar to occupancy, nonmetro median DCR and per unit cash flow historically trailed behind metro counties.



Debt Coverage Ratio by County Type: 2015-18



Per Unit Cash Flow by County Type: 2015-18



There is an unmet and rising demand for affordable housing in every part of the country. Rural communities, while sharing similar challenges with distressed urban neighborhoods, also struggle with their own unique constraints. To that end, there have been numerous policy studies and initiatives to create solutions to address rural development-related challenges, a full analysis of which is beyond the scope of this report. For example,

many states have incorporated into their respective qualified allocation plan a set-aside for rural housing. The housing tax credit program, combined with other federal subsidies, has been the principal pool used by rural communities to provide decent, clean, and much-needed affordable housing. In an environment of continued federal budget constraints, it is increasingly critical to preserve and expand the affordable housing tax credit program.

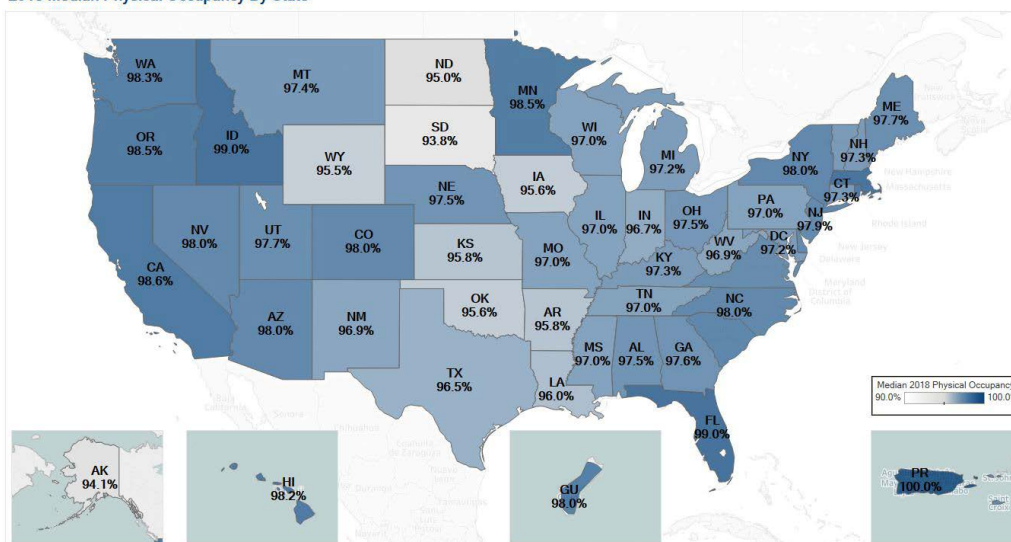


Performance by state

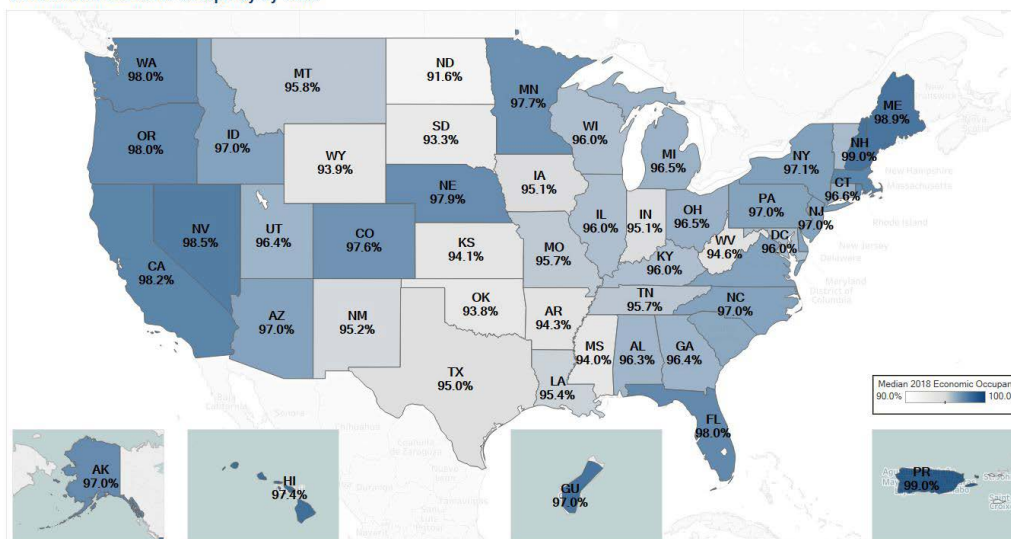
The following maps illustrate state performance and underperformance metrics for 2018. More detailed **state- and county-level operating performance and expense metrics** can be found at www.cohnreznick.com/ppi.

In 2018, median physical occupancy rates among surveyed stabilized housing credit properties on a statewide level ranged from 93.8% to 100%. In terms of economic occupancy, the surveyed results ranged from 91.6% to 99.0%.

2018 Median Physical Occupancy By State



2018 Median Economic Occupancy By State

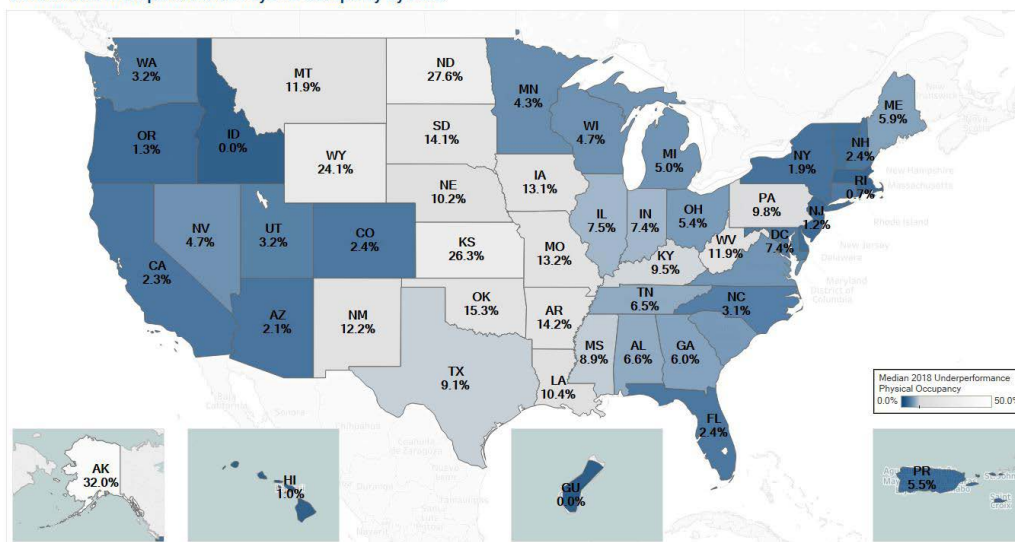




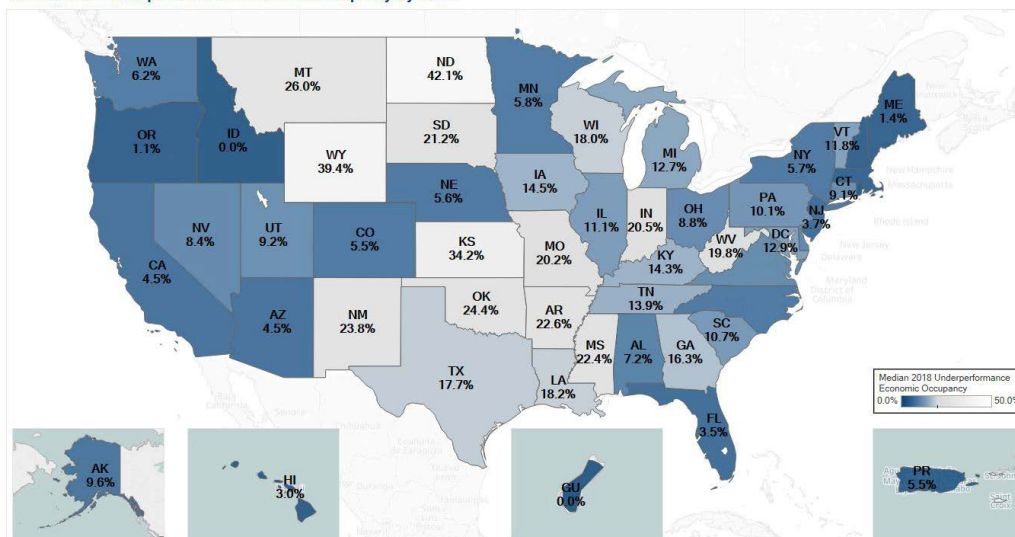
In 2018, four states reported more than 20% of their portfolios operating below 90% physical occupancy: Alaska at 32.0%, Kansas at 26.3%, North Dakota at 27.6%, and Wyoming at 24.1%. It should be noted, however, that these four states collectively

make up only 1% of the overall stabilized surveyed portfolio, measured by net equity. Furthermore, the elevated rate of occupancy issues reported by these states is partially due to a very limited sample of stabilized properties; 336 among all four states in total.

2018 Median Underperformance Physical Occupancy By State



2018 Median Underperformance Economic Occupancy By State

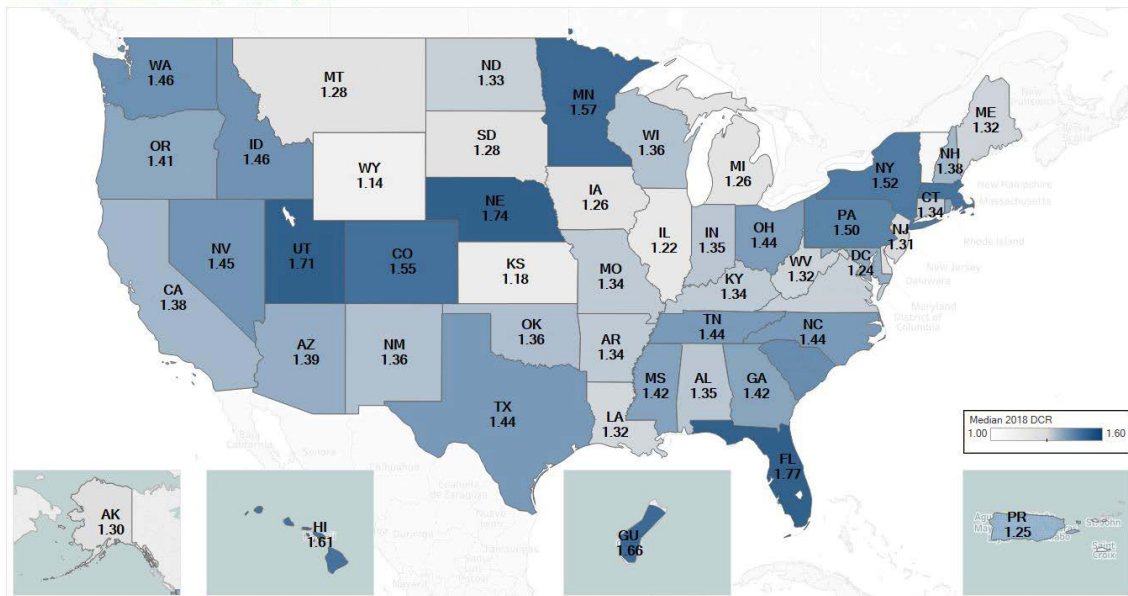




In 2018, the median debt coverage ratio among surveyed stabilized housing credit properties ranged from 1.07 to 1.77 on a state-by-state level. All but three states (Kansas, Vermont, and Wyoming) reported median DCR of 1.20 or

greater in 2018, which is a remarkable statistic and further proof that the demand for affordable housing is not confined to large urban centers or the East and West Coasts.

2018 Median Debt Coverage Ratio By State





UNDERPERFORMANCE DEEP DIVES

How frequently do syndicators override AHIC risk ratings?

Watch lists track properties through a set of defined performance measures to ensure that “problem” properties are more closely monitored. Watch list criteria vary from syndicator to syndicator. However, most respondents have adopted the criteria established by AHIC as a baseline for measuring underperformance. According to AHIC standards, a property investment reporting below 90% economic occupancy or below 1.00 DCR should be placed on a watch list for close monitoring, in addition to being observed for other performance matters. Nevertheless, some syndicators utilize watch list “overrides” to either remove an underperforming property from the watch list or to add an otherwise performing property to the watch list, which is more rare. We focused on the use of overrides to remove or exclude underperforming properties from the watch list.

In 2018, risk rating overrides were applied to approximately 15.9% of all stabilized properties; individual syndicator override rates ranged from 4.8% to 28.7%. Of the nearly 11,000 properties favorably risk-rated “A” or “B” by the survey respondents, approximately 4.2% reported less than 90% physical occupancy; 6.4% reported less than 90% economic occupancy; 8.6% reported a DCR of less than 1.0; and 12.6% reported less than \$0 per unit cash flow. Overall, risk ratings were more likely to be overridden in events of cash flow deficits or DCR shortfalls; this is possibly a reflection of one-time events, such as those that caused a temporary increase in operating expenses at an otherwise performing property.

Overridden properties were, on average, 11.6 years into their 15-year compliance life, indicating a willingness on behalf of syndicators to override AHIC risk ratings for underperforming properties as they age. There are two reasons that we believe drive the tendency to override risk ratings on older properties: the credits have been claimed, and depreciation, the primary remaining investor benefit, is not at risk. While we understand the reasoning behind overriding AHIC criteria on post-Year 10 properties, the fact remains that underperforming properties, especially those operating below breakeven, will still generate deficits that must be funded.

Another common explanation from survey respondents for watch list override was that certain properties, especially those with deep income or special need targeting, were underwritten to operate around breakeven and to rely on funded operating reserves. As such, below-breakeven operations are more or less by design instead of reflecting unexpected surprises.

Chronic property underperformance

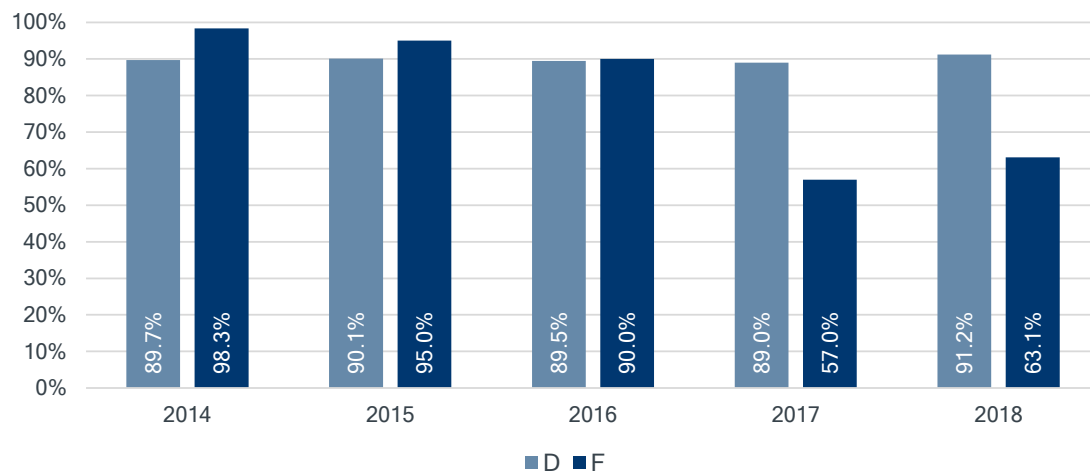
To account for the fact that housing tax credit properties, like other types of real estate, are vulnerable to operating volatility in varying degrees, CohnReznick assessed the incidence of underperformance in consecutive years. An underperforming property is one that is operating with below 90% physical occupancy, below 90% economic occupancy, less than 1.0 DCR, or less than \$0 per unit cash flow. We isolated the 299 properties risk-rated “D” or “F” in 2018 and tracked their performance over a five-year period.



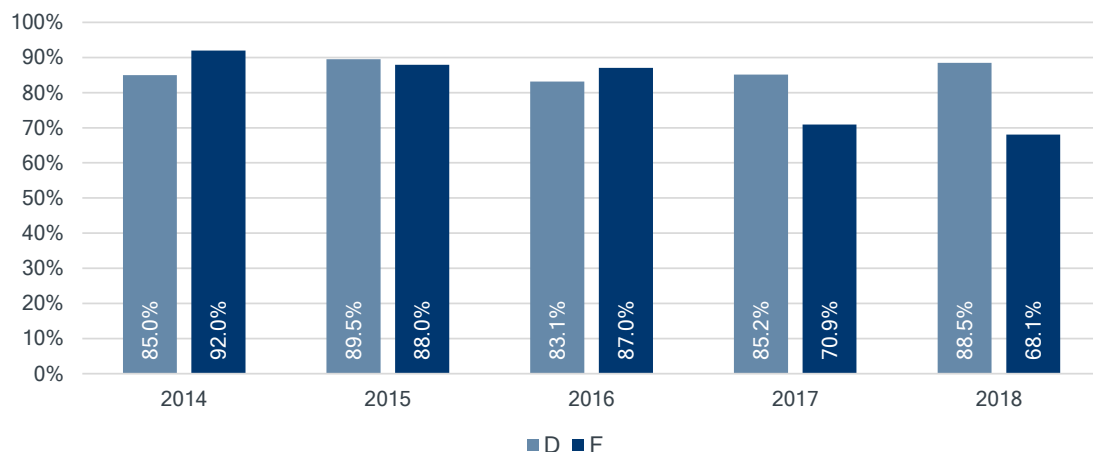
The six properties risk rated “F” in 2018 reported, on a median basis, 68.1% economic occupancy, -1.75 DCR and -\$2,616 per unit cash flow. Five of the six properties have underperformed at least since 2015; the sixth property has underperformed since 2016. The properties exhibited signs of more recent, severe troubles. F-rated properties reported significant drops in economic occupancy (-25.9%), DCR (-358.8%) and per unit cash flow (-234.4%) over the past five years. Performance at all six F-rated properties declined in nearly every metric over the five-year period.

The properties risk rated “D” in 2018 reported 88.5% economic occupancy, 0.39 DCR and -\$1,019 per unit cash flow. Between 2014 and 2018, the D-rated properties have shown modest improvements in economic occupancy (+4%), DCR (+5.7%) and per unit cash flow (+11.8%); however, the fact that the D-rated properties have remained underperforming for the past five years indicates that despite good efforts, turn-around can be difficult.

Physical Occupancy - 2014-18 D & F Rated Properties

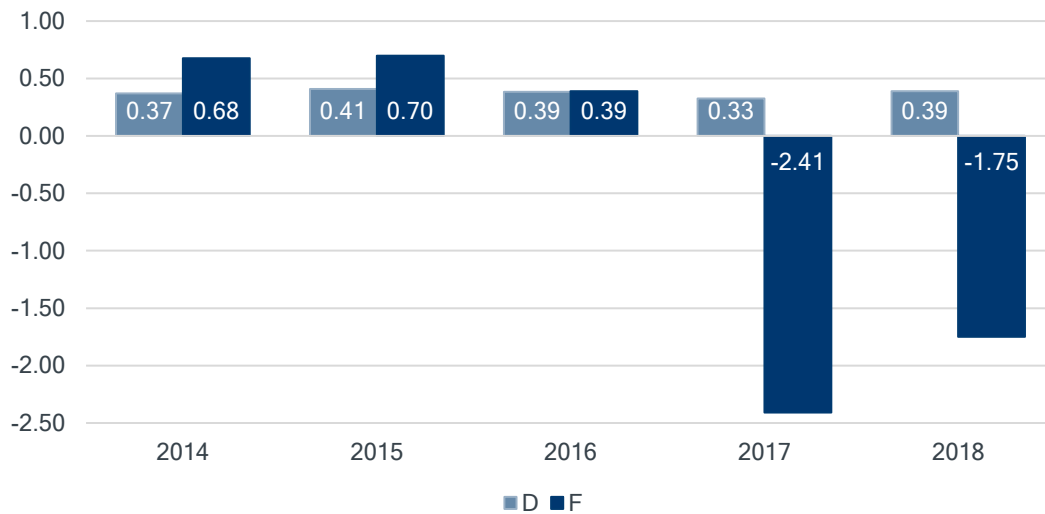


Economic Occupancy - 2014-18 D & F Rated Properties

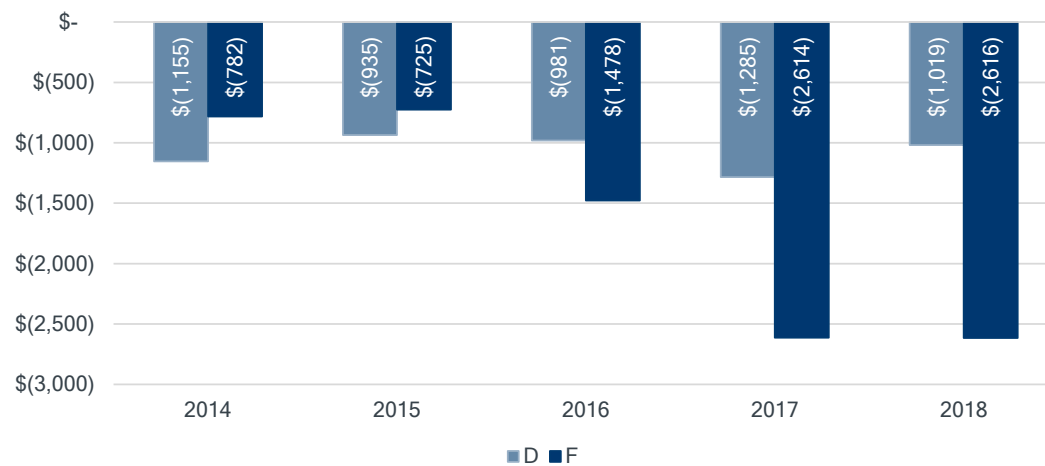




DCR - 2014-18 D & F Rated Properties



Per Unit Cash Flow - 2014-18 D & F Rated Properties





Are there certain factors that make a property more likely to underperform?

Underperforming properties span the affordable housing landscape, but are there certain factors that make a property more likely to underperform? In 2018, there were over 3,400 properties that reported underperformance in at least one of the four categories, many of which underperformed in more than one category.

Overall, the average underperforming property was two years older than the national housing credit portfolio; 8% more likely to be a 9% credit deal; 5% more likely to be in a nonmetro area;

and 65 units, 13 fewer than the 78-unit national average. Again, we isolated the 299 properties risk-rated “D” or “F” in 2018, to determine if there were common traits that made a property more likely to severely underperform. The “D” and “F” rated properties were 13% more likely to be 9% credit deals and 8% more likely to be in nonmetro locations.

While there were some commonalities among underperforming properties, it is difficult to isolate any single or combination of factors to avoid. Given the widespread nature of property underperformance, it appears the best defense is solid underwriting and pre-closing due diligence.





FORECLOSURE

CohnReznick asked survey respondents to report the number of properties ever lost to foreclosure, including circumstances in which a deed may have been tendered in lieu of foreclosure. Respondents provided data that resulted in a 0.65% cumulative foreclosure rate since the inception of the housing credit program. The rate came down slightly from prior years as a function of a larger denominator as more housing credit property investments were made.

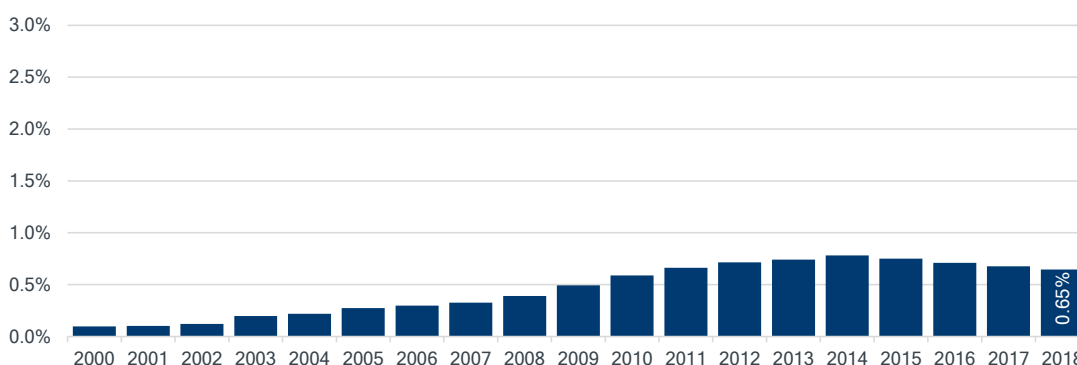
A lender's ultimate recourse for dealing with a distressed property is to foreclose on the project. A remarkably low number of housing tax credit properties have fallen victim to foreclosure in any given year and throughout the program's history. That is largely because relatively few housing tax credit properties suffer from severe underperformance. In many cases, underperforming properties can fund their operating deficits through fee deferrals, operating deficit guarantee and reserves, or advances from the general partner or syndicators. The owners of housing tax credit properties have a variety of options to financially support or recapitalize their properties.

Also, the consequences for these owners are very harsh; owners are highly motivated to keep their properties in

compliance with rules of the housing tax credit program and avoid foreclosure at all costs. If an owner forfeits title to a housing tax credit property because of foreclosure or by tendering a deed in lieu of foreclosure while the property is still within its 15-year initial compliance period, the transfer will, in most cases, trigger the recapture of the project's tax credits. Generally speaking, during a recapture event, investor limited partners lose any future housing credits not yet earned from the foreclosed property, as well as having to repay up to one-third of the tax credit previously claimed from the foreclosed property plus additional interest and penalties. All the financial loss may or may not be covered by a recapture guarantee backstopped by the guarantors of the transaction.

The less than 1% foreclosure rate has proven to be a very meaningful data point for regulators who rate the risk of housing tax credit investments. The favorable risk rating affects the amount of capital that regulated financial institutions like banks hold in reserve to offset the risk of their investments. The low foreclosure rate of housing tax credit properties is also important as investors seek credit approvals to make equity investments in housing tax credit transactions.

Cumulative Foreclosure Rate





The number of foreclosures may be understated because CohnReznick was unable to obtain data from syndication firms that have left the business or become inactive. CohnReznick has reason to believe, strictly on an anecdotal basis, that the incidence of property foreclosure has been higher among these firms than the rest of the industry. Nevertheless, CohnReznick believes that the inclusion of defunct syndicators' data would not materially affect our conclusion on the overall safety of housing tax credit investments. Moreover, the firms we surveyed represent the core of the housing tax credit industry, and the care with which they finance and manage their investments is an important part of why the foreclosure rate of housing tax credit properties continues to be so low.

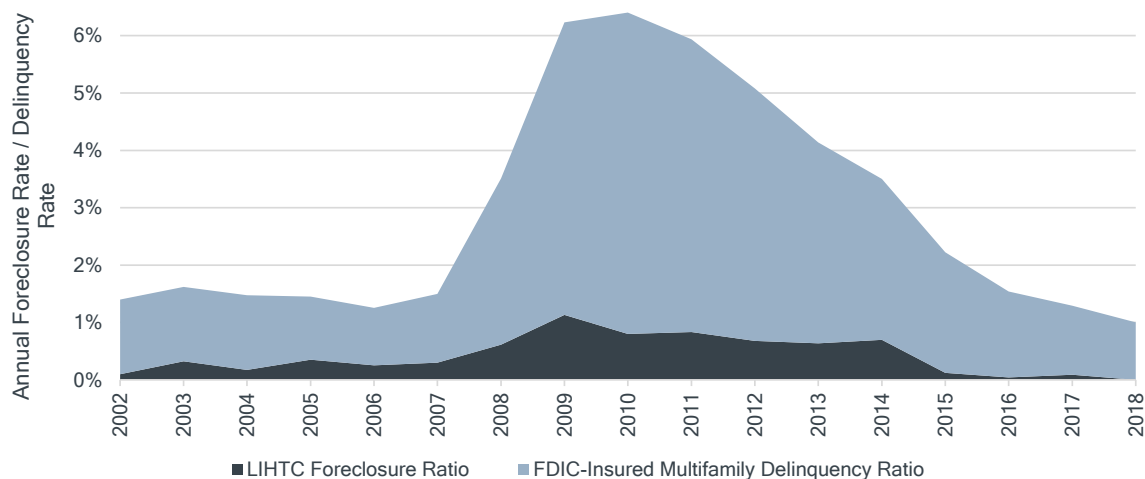
Moreover, the cumulative foreclosure rate was calculated based on the total number of properties in survey respondents' collective portfolio, rather than the total number of properties the respondents have ever syndicated or invested in to date. As

such, including a larger base of properties could at least partly offset the impact of missing data from defunct syndicators.

While housing tax credit properties have a cumulative foreclosure rate by property count of just 0.65%, the cumulative rate by net equity is even smaller. When the total foreclosed net equity is divided by the total net equity reported to us in the national database, the cumulative foreclosure rate is only 0.35%.

Further, the annual rate of foreclosure is even lower than either cumulative rate – typically less than 0.1% in any year since 2000. Conventional apartment properties are much more likely to suffer foreclosure. The chart below shows the annual housing tax credit foreclosure rates compared to the rate at which conventional multifamily loans were seriously delinquent by more than 90 days or in foreclosure, as reported by FDIC-insured institutions according to the Mortgage Bankers Association.

Annual LIHTC Foreclosure Rate vs. Conventional Multifamily Delinquency Rate





When did foreclosures tend to occur?

Of the reported incidences of foreclosure, 51% were during the period 2008–2013; 24% were between 2013 and 2018. While the data might suggest a spike in foreclosure activities during 2008–2013, it is important to note that on average, a foreclosed property was in its 11th year of credit delivery period when lost to foreclosure. Properties lost to foreclosure in 2008–2013 were underwritten 15–20 years ago when the industry’s collective underwriting and asset management quality was understandably not close to where it is today.

The fact that the average foreclosed property was in its 11th year is not a coincidence. Foreclosure timing is often the result of housing credit syndicators’ effort to minimize the financial impact to investors. Syndicators will often encourage their general partners to fund a deal’s deficits above and beyond their guarantee to ensure that the property limps along through the credit delivery period, thereby minimizing the impact to investors. It is not uncommon for syndicators to tap into fund level reserves to alleviate property issues, and further come out of pocket to keep a deal afloat.

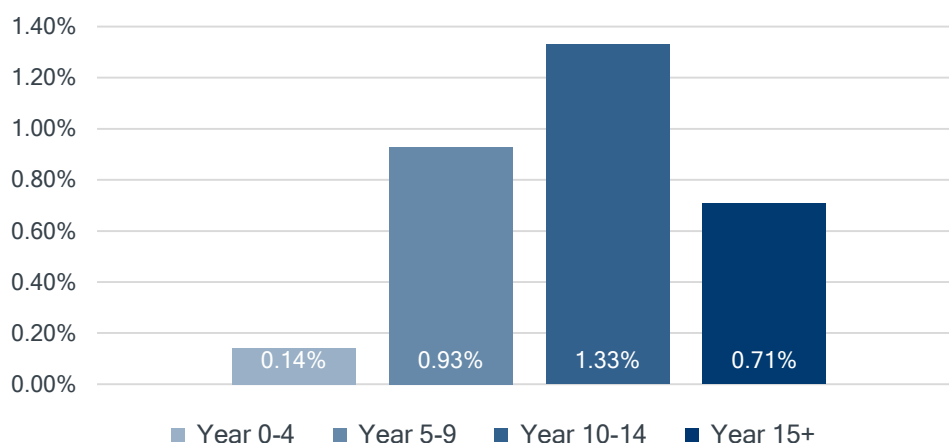
Did foreclosed properties share any common traits?

The following are various presentations of the foreclosed portfolio using categories such as fund type, credit type, hard debt ratio, and size, among others. While there are no combinations of factors that statistically predict foreclosure, there are characteristics that have produced more foreclosures than others.

Foreclosures by fund type

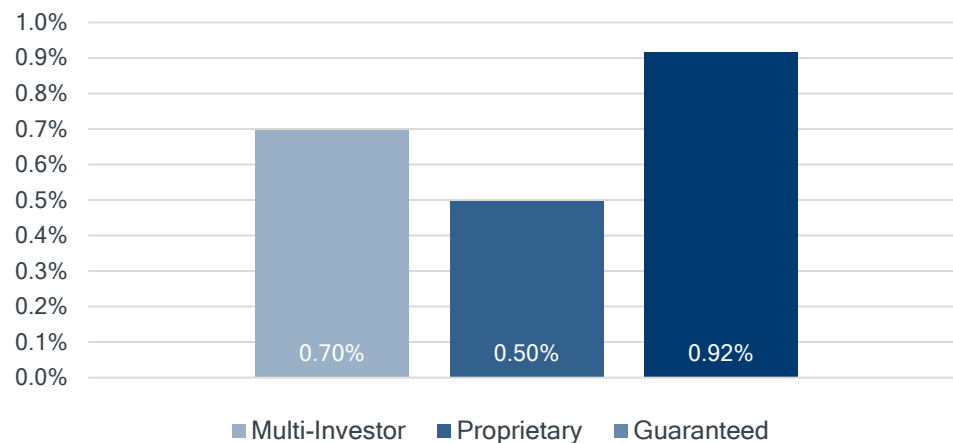
Over 60% of the reported foreclosures were closed into multi-investor funds. Foreclosures in proprietary funds account for approximately one-third of the foreclosed portfolio and guaranteed and public funds account for the remaining share, less than 10%. The cumulative foreclosure rates by fund type are illustrated by the graph on the next page.

Foreclosure Rate by Property Age





Cumulative Foreclosure Rate by Fund Type



Multi-investor and guaranteed funds reported foreclosure rates that are largely consistent with the overall national housing credit foreclosure rate. While the 0.92% rate reported on the guaranteed portfolio might appear to be significantly higher than the rest of the portfolio, it is a function of the relatively small guaranteed portfolio size where a single incidence of foreclosure could cause a much more pronounced impact on the foreclosure rate.

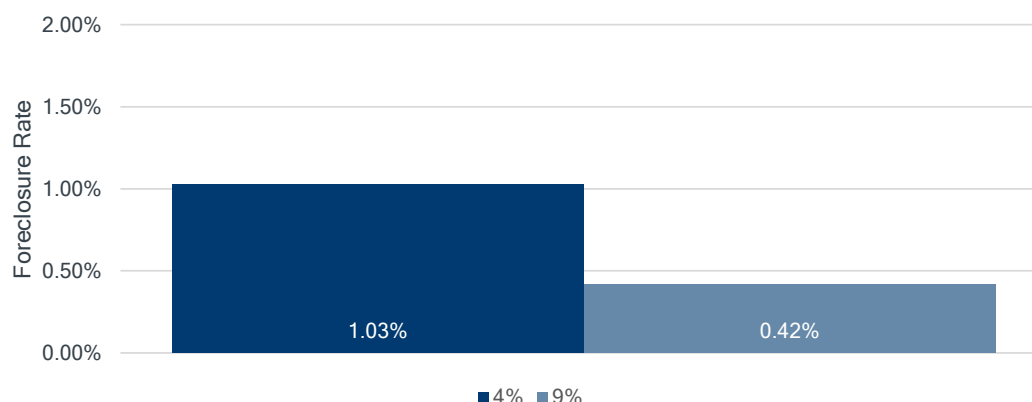
Interestingly, the proprietary fund foreclosure rate is notably lower than the other categories, at only 0.50%. The data show

that the underlying properties in proprietary funds do not differ materially from a composition perspective (size, tenancy, leverage, etc.), nor do they outperform their multi-investor counterparts. We suspect that the main driver behind the low foreclosure rate among proprietary fund investments is the added motivation of a single investor to support troubled properties to minimize any impact to neighborhoods they serve.

Foreclosures by credit type

The cumulative foreclosure rates by credit type are illustrated in the following table.

Cumulative Foreclosure Rate by Credit Type





Despite accounting for just over 30% of the total surveyed housing credit portfolio, 4% credit projects reported nearly half of the total number of foreclosures. The credit-type specific foreclosure rate was 1.03% for 4% credit projects, 2.5 times the rate reported on the 9% credit portfolio.

In addition, 4% credit projects tend to be larger, 122 units per property on average vs. 60 units on average at 9% credit projects. The 4% credit properties in the foreclosed portfolio were on average 200 units, even much larger than the typical 4% project in the national portfolio. Thus, the number of apartment units foreclosed is significantly higher among the 4% cohort.

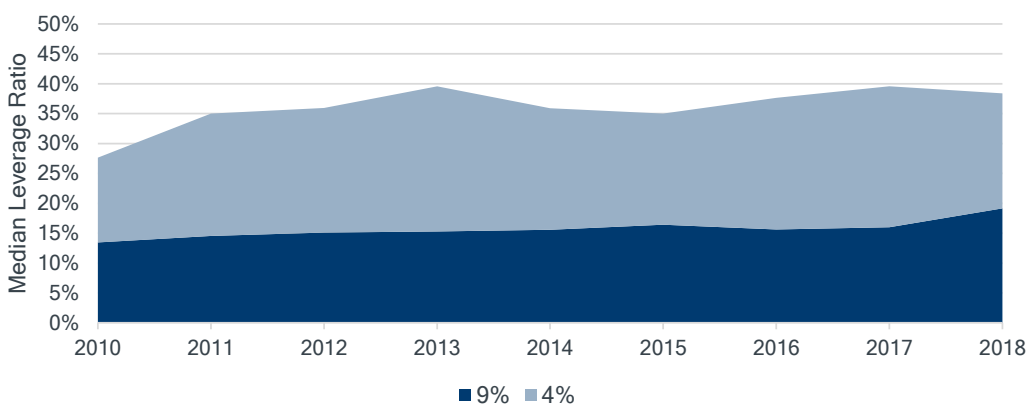
As a general matter, 9% credit projects are more heavily financed by investor equity and thus have a more modest level of hard debt service. Tax-exempt bond projects that qualify for 4% credits generate significantly lower levels of tax credit

equity and thus require higher debt levels (albeit at lower tax-exempt interest rates). Median annual 4% vs. 9% hard debt leverage ratio in the national portfolio since 2000 was 38% and 16%, respectively. The foreclosed subset of the national portfolio reported 48% and 29% leverage for the respective 4% and 9% property types.

As noted elsewhere in this report, 9% and 4% properties perform relatively identically from a physical and economic occupancy and median DCR perspective. Four percent credit properties, however, produce nearly double the median per unit cash flow of their 9% counterparts.

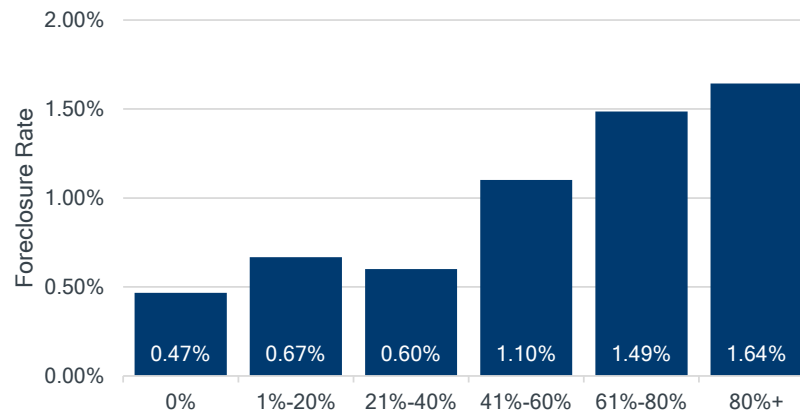
But 4% credit properties' larger size (122 units on average vs. 60 at 9% projects) and higher leverage can be trouble when operating issues arise. Deficits tend to be larger and more difficult to bridge.

Historical Median Leverage Ratio by Credit Type





Foreclosure Rate by Hard Debt Level



Foreclosure by hard debt level

The data show that there is a strong correlation between higher leverage and foreclosure. No category of leverage in the graph below has historically been immune to foreclosure, but the trend in foreclosure rates generally increases as hard debt burden increases.

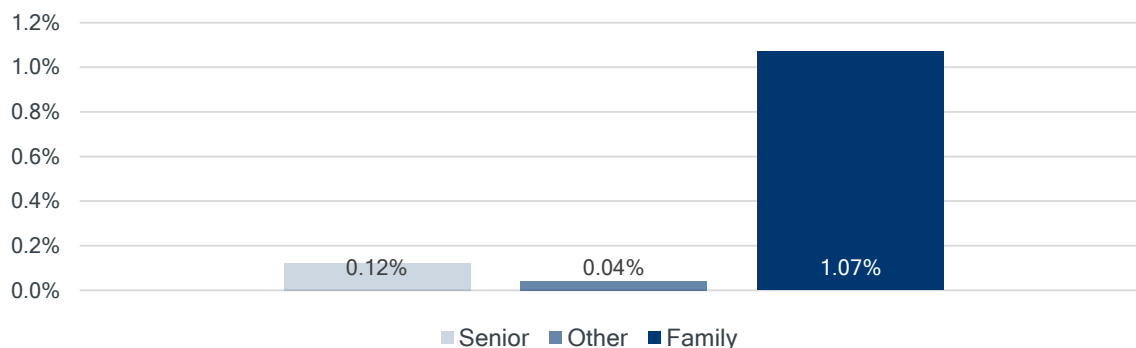
It is important to note that while foreclosure rates increase as leverage increases, this is partially due to the smaller number of properties in the higher leverage categories. For instance, there were fewer than 250 properties in the national portfolio with greater than 80% hard debt leverage; four of which had been foreclosed. By the same token, more than 60 foreclosures occurred among properties with between 21% and 60% hard debt leverage, although those are among a portfolio of more than 8,000 properties nationwide.

Foreclosures by tenancy

The vast majority (95%) of all reported foreclosures occurred among properties with family tenancy. Only 5% of reported foreclosures were either senior or other tenancy. The following table illustrates the tenancy-type-specific foreclosure rates.

Consistent with prior studies, properties with age-restricted tenancy, representative of approximately 27% of the overall portfolio, reported the strongest median physical and economic occupancy rates and debt coverage ratios. Given their historical exemplary performance, it is not surprising that senior projects reported a 0.12% foreclosure rate, significantly more favorable than the overall national foreclosure rate.

Foreclosure Rate by Tenancy Type



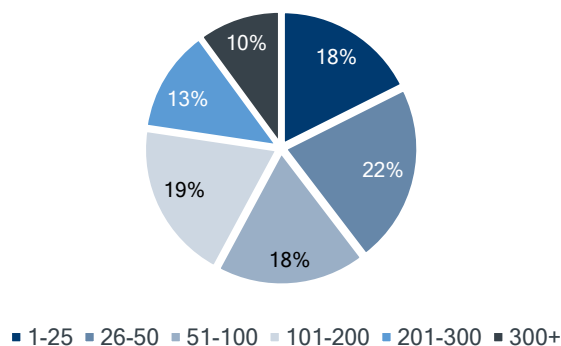


Foreclosures by property size

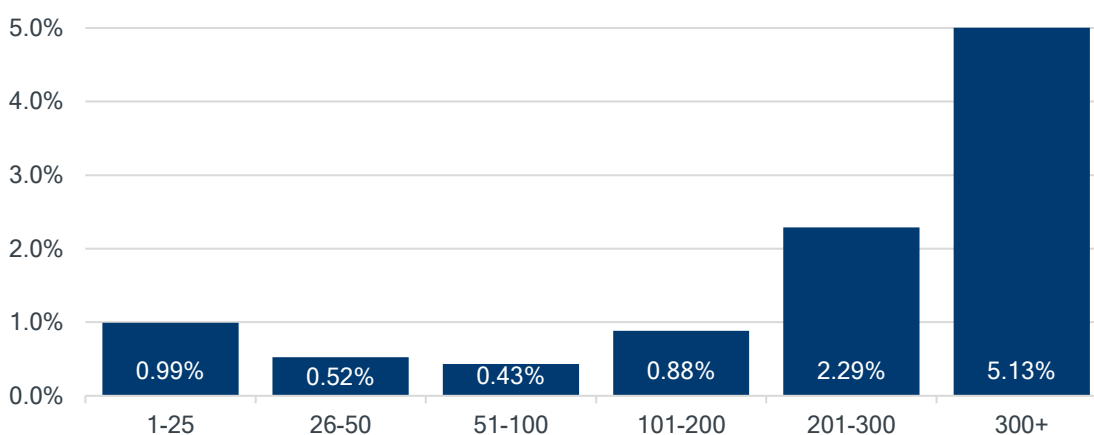
While economies of scale could support performance, surprisingly, the smallest cohort of properties (under 25 units per property) did not report the most foreclosures. The number of foreclosures was most concentrated among properties with between 26 and 50 units, accounting for 22% of the total foreclosed portfolio.

Perhaps more telling than the nominal foreclosures by number of units is the foreclosure rates calculated for each cohort. The following graph illustrates the individual foreclosure rates by property size.

Foreclosure by Size



Foreclosure Rate by Size



In conjunction with property size, we looked into the leverage ratios associated with the largest properties in the dataset. Not surprisingly, foreclosed properties with more than 200 units reported 64% average leverage.

Foreclosure rate of mixed-income properties

Eighteen percent of the foreclosed properties in the dataset had a market rate component (greater than 15% of total units

are non-LIHTC). Including market rate units in a housing tax credit development has many benefits from a social impact and an underwriting perspective. However, some mixed-income properties have difficulty attracting market-rate tenants at the desired rent levels, especially when combined with soft local market conditions. In our experience, we prefer to see that market rents in a mixed-income property be underwritten at 10% below market as an underwriting practice.



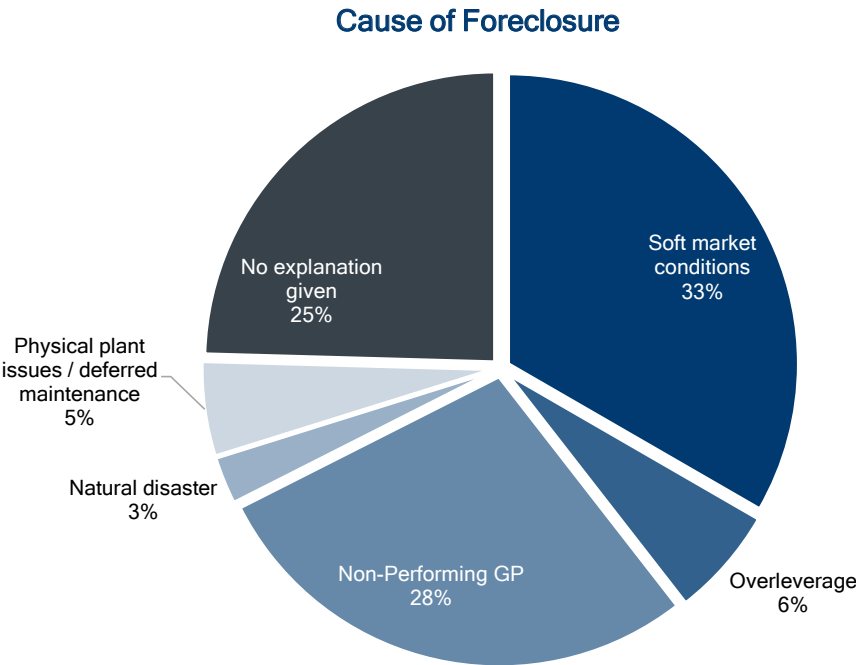
The mixed-income specific foreclosure rate, the number of mixed-income foreclosures divided by the total number of mixed-income properties in the overall portfolio was 1.47%, which was higher than the national housing credit rate.

What are the leading causes for foreclosure?

We also requested that respondents provide the leading cause of each foreclosure. The level of detail provided varied, and there were often multiple interconnected causes for

foreclosure. For instance, a soft market could create higher than projected vacancy, which, in turn, leads to operating expenses and deficits. We also viewed multiple instances of “non-performing general partner” tied to other property issues. Where possible, we simplified the description of the cause of foreclosure to the core issue.

The top leading cause of foreclosure indicated by respondents was soft market conditions, accounting for 33% of all responses.



The data show that 48% of the foreclosures with no cited cause had leverage ratios of greater than 40%, perhaps indicating that overleverage was the cause of some of them.

Foreclosure is by no means the sole cause of credit recapture. Tenant compliance issues, downed units, and natural disaster (among others) can result in credit recapture if left uncorrected. We focus on foreclosure because it is the most easily tracked and measured negative outcome.

Finally, while it is not within the scope of this study to trace what happens post-foreclosure, foreclosure typically terminates a property’s Land Use Restriction Agreement, which contains the rent and occupancy restrictions. However, the lender or new owner is required to comply with the so-called “decontrol period,” a three-year period that is designed to minimize any disruptive impact to existing tenants by prohibiting the owner from either evicting income-qualified tenants other than for good cause or increasing the rent beyond the state agency’s limit.



MIXED-INCOME HOUSING CREDIT PORTFOLIO

Increasingly, housing finance agencies are looking for ways to effectively implement mixed-income development strategies. Efforts to foster mixed-income developments are driven by a practical desire to align the income requirements of housing credit properties with other state and federal programs that encourage the production of affordable rental housing for moderate-income residents. More importantly, mixed-income developments broaden the affordability of housing markets, helping to attract and retain a diverse base of residents. Diversity of backgrounds and lifestyles is thought to encourage population growth, a resilient workforce, and a vibrant culture – necessary ingredients for a robust local economy.

To encourage mixed-income developments under the housing tax credit program, historically, state housing finance agencies had to get creative. Because the housing credit program traditionally requires a “minimum set-aside” election to be made to restrict either 1) 20% of units to tenants at or below 50% of AMI, or 2) 40% of units to tenants at or below 60% of AMI, the convention has been to restrict 100% of units to tenants at or below the 50% or 60% AMI threshold. This conventional approach maximized the capital raised under the program and simplified the compliance burden.

Current national economic and demographic conditions appear to be conducive to increasing the affordability mix of affordable rental properties. According to the Harvard Joint Center for Housing Studies’ [2019 State of the Nation’s Housing report](https://www.jchs.harvard.edu/state-nations-housing-2019), the share of cost-burdened U.S. households paying more than 30% of their income for housing declined for the

seventh straight year in 2018.⁸ While this sounds encouraging, most of the improvement is among homeowner households, whose overall cost burden rate declined to 22.5%; conversely, 47.4% of renter households remained cost-burdened, improving by far less than the homeowner cohort since the recession. As a result, renters today account for 10.8 million of the 18.2 million severely burdened households that pay more than 50% of their income for housing.

It comes as no surprise, then, that the affordable housing industry and its proponents in Congress have advocated for the broadening of income requirements under the housing credit program. A third occupancy set-aside option was made available under the Consolidated Appropriations Act of 2018, known as the average income minimum set-aside or income averaging. Income averaging allows affordable projects to utilize higher area median income thresholds up to 80% AMI provided that they are offset by lower AMI thresholds and that the weighted average AMI set-aside does not exceed the applicable percentage (i.e., 60% AMI). The concept of income averaging allows for affordability under the program to increase to a maximum income of 80% AMI (which aligns with the HOME program, another primary means of funding affordable housing in the country), while maintaining the ability to create rental housing at affordability levels much lower than 60% AMI. The income averaging concept maximizes a development’s revenue potential while providing affordable rents to a broad segment of the population in need of housing without compromising the capital subsidy.

⁸ <https://www.jchs.harvard.edu/state-nations-housing-2019>



Still, some in the affordable housing industry would argue that income averaging will not be able to fully resolve the “donut hole” in the rental housing market. The donut hole is the widely observed trend that moderate-income households earning 60% to 120% AMI are increasingly rent-burdened because of myriad factors: 1) wage stagnation coupled with increased costs of higher education, childcare, and transportation; 2) limited first-time homeownership opportunities; 3) conversion of “naturally occurring” affordable housing in secondary markets to market-rate units; 4) market-rate developments focused on luxury and high-end renters; and 5) as previously noted, the lack of rental subsidy programs for households earning more than 80% AMI.

These demographic and market trends have not gone unnoticed by state and local governments and their constituents who are grappling with housing shortages, explosive rent growth, and, in some cases, dislocation. To address the effects of these market forces on local economies, state housing finance agencies are awarding points through their 4% and 9% housing tax credit qualified allocation plans for mixed-income housing.

With so much demand for multifamily housing across various tenant types and markets, one might think mixed-income housing would be an easy concept to support. But the general perception is that mixed-income developments have a varied track record. Commonly held concerns include:

- Section 42 of the IRS code is conducive to the development of 100% affordable properties, such that industry expertise and comfort with constructing, marketing, leasing, managing, and maintaining the compliance of mixed-income properties can be challenging.
- Housing tax credit property investors assume limited market risk during the 15-year compliance period because the rent advantage offered by housing tax credit units sustains

demand. Market-rate units may not be able to attract and sustain demand because of location, conditions, and tenancy for a similar period, ultimately undermining rent realization and the property’s overall financial condition.

- The investor’s ability to realize the stream of tax credits (which make up the majority of the tax benefits driving yield) is contingent upon program compliance and the ability to service hard debt (avoid foreclosure) at each property. It is common for mixed-income properties to be much more heavily leveraged than a strict affordable housing properties.

The following aims to:

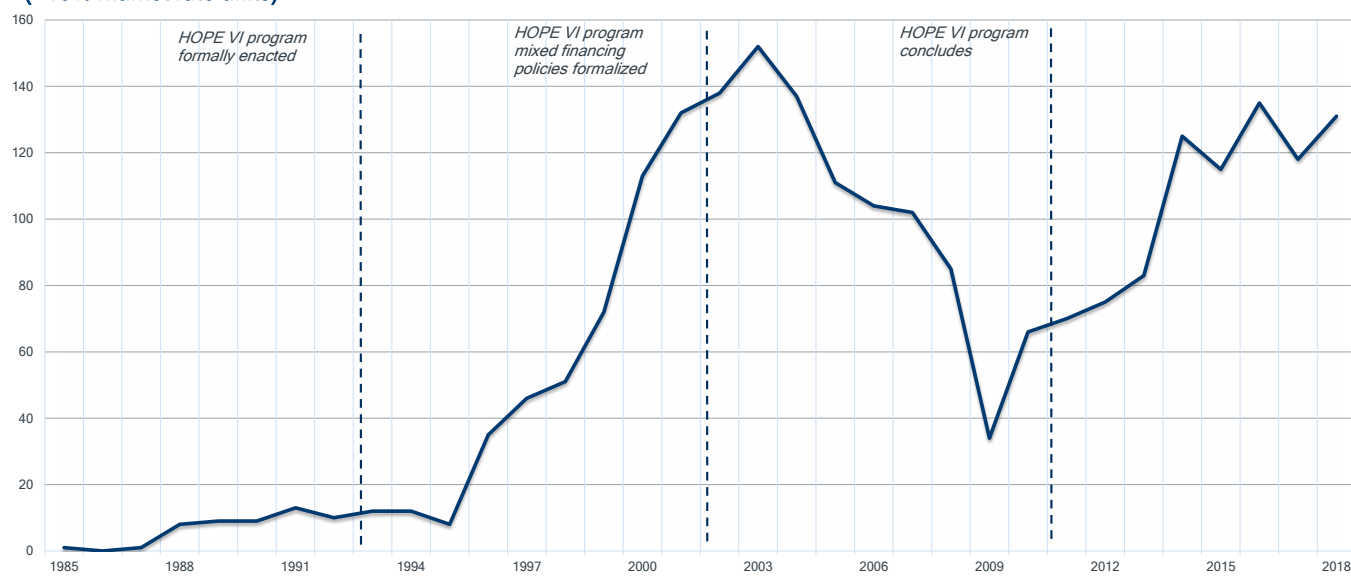
- Present the historical profile of mixed-income housing tax credit properties – what do they look like from a development, affordability, and market perspective?
- Understand how mixed-income (15% or more in market rate) properties have historically performed relative to 100% affordable housing tax credit properties.

Mixed-income housing credit property profile

While market machinations have resurrected the focus on mixed-income developments, they are an established product type within the housing tax credit industry. The CohnReznick housing credit database includes approximately 21,000 housing tax credit properties, roughly 1,900 of which are mixed-income properties. For purposes of our analysis, CohnReznick classified mixed-income properties as those with at least 15% of the units restricted for households with incomes greater than 60% AMI. Given the historical lookback, all developments included are prior to the enactment of Income Averaging. No distinction was made between housing tax credit properties with “true” market-rate units and those with moderate-income (often characterized as “workforce”) units with income or rent restrictions above 60% AMI.



**Number of Mixed-Income Housing Credit Properties Closed Annually
(>15% market rate units)**



Consistent with production trends seen across the affordable housing industry, the production of mixed-income housing tax credit properties is concentrated in the early-to-mid 2000s. General mixed-income housing tax credit project production growth coincided with HUD's Hope VI Program. Enacted in 1992, most HOPE VI revitalization grants were awarded between 1993 and 2010. The first few years of the program focused on the planning and permitting of communities, permanent and temporary relocation of tenants, and demolition. Formal programmatic guidance – both written policies and forms – was made available in 2001, making sources of permanent financing, including housing credit equity, available to Hope VI properties.

Reporting limitations hampered our ability to pinpoint the exact representation of HOPE VI properties within the mixed-income portfolio. Still, mixed-income housing tax credit properties closed by survey respondents jumped from 113 in 2000 to 152 in 2003 before declining to less than 70 properties in the final year of the HOPE VI program.⁹ The correlation between mixed-income housing tax credit property production growth and the tenure of the HOPE VI program at the very least

⁹ We note that the HOPE VI program focused on the development of mixed-income communities. As such, we acknowledge that housing production under the program resulted in mixed-income properties as well as 100% affordable housing developments co-located in a neighborhood with 100% market-rate or moderate-income developments. CohnReznick's database captures those housing tax credit properties with a mixed-income component in a single property; it does not consider mixed-income components across multiple buildings and phases of the same development.



indicates that the national housing policy promoting mixed-income developments was reflected in the priorities of the housing tax credit allocations made by state housing finance agencies during the same period.

Upon the conclusion of the HOPE VI program in 2010, the annual production of mixed-income housing tax credit developments dropped 57% from peak production in 2003. Between 2010 and 2013, our survey respondents reported that the housing tax credit program closed only 74 mixed-income properties annually on average. Then, in 2014, production increased precipitously by 51% over the prior year to 125 properties, a number that increased again by 18% two years later. In 2016, survey respondents reported closing 135 mixed-income properties, a production level that hasn't been seen in more than a decade. Though mixed-income deal closings notably dropped to 118 in 2017 across the survey respondents' portfolios, the number climbed back up to 131 in 2018.

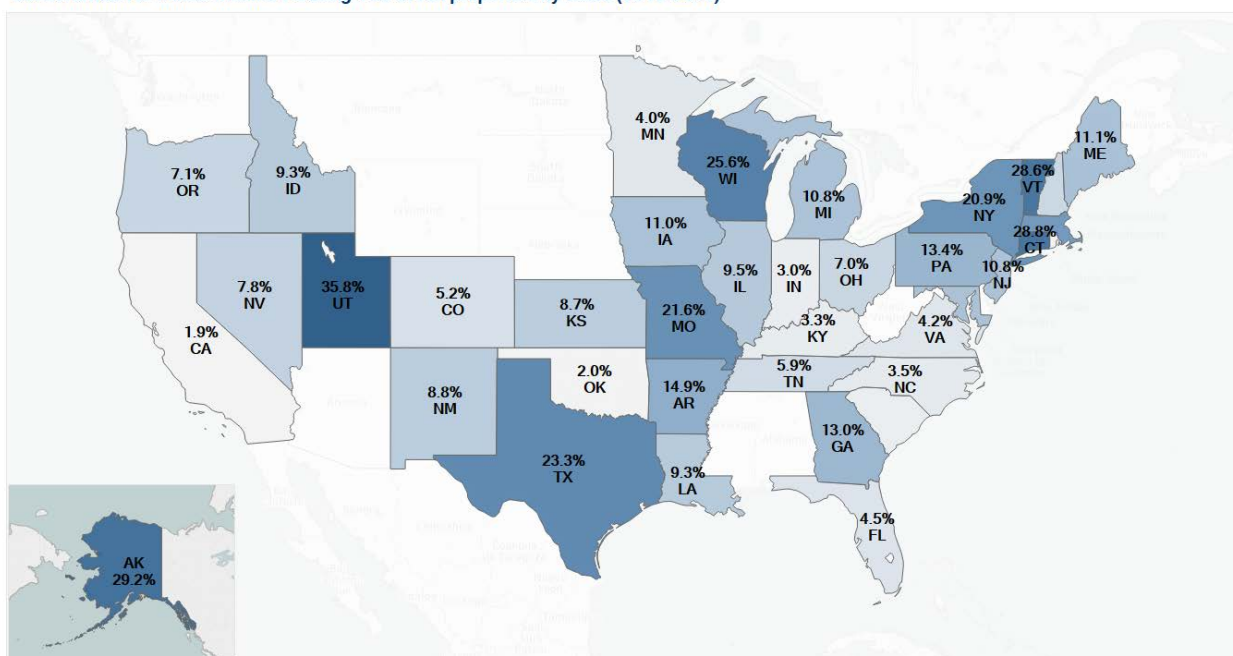
Mixed-income housing tax credit properties have an average unit count (103) that is greater than the average unit count

across the portfolio (78). While more research is needed to substantiate this trend, we expect it may be due in part to the benefit of inclusionary zoning laws, which provide density bonuses for developments serving a range of income affordability.

Across the approximately 1,900 mixed-income housing tax credit properties, 91.2% of properties (measured as a percentage of net equity) were in metro areas. The state that reported the most mixed-income housing tax credit properties was New York, followed by Texas, Georgia, and Ohio.

We took a closer look at the production of mixed-income housing tax credit properties closed in the past five years. As displayed in the following map, Utah took the lead with respect to the share of mixed-income development produced between 2013 and 2018. Of the 53 housing credit properties closed in Utah during the five-year period, 19 (35.8%) were mixed-income developments. Utah provides competitive points in their QAPs that encourage the inclusion of market-rate units of up to 20% of total units.

Concentration of Mixed-Income Housing Tax Credit properties by State (2013-2018)





While mixed-income development continues to be a priority in states like New York, Texas, Massachusetts, and Georgia, Midwestern states Wisconsin, Michigan, Illinois, and Missouri also have mixed-income housing tax credit development concentrations ranging from 11%-26%.

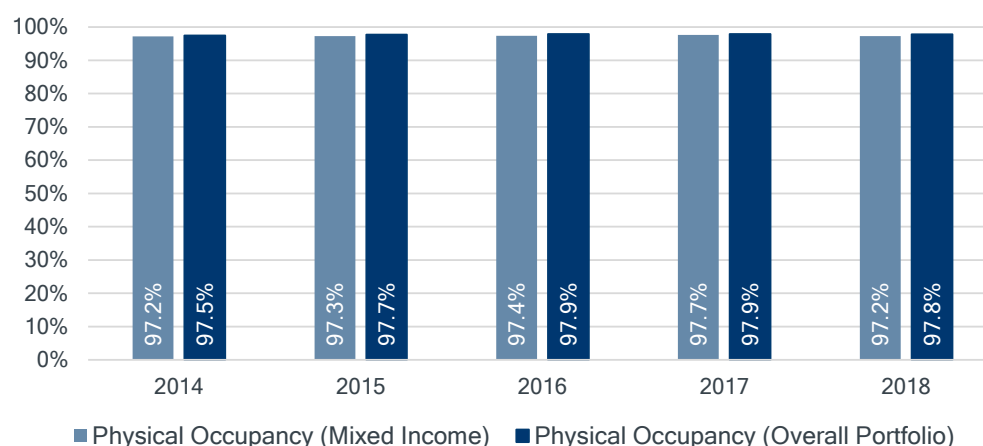
Most (67%) mixed-income housing credit developments are new construction. This is not surprising given that one of the risk factors in mixed-income properties is their ability to achieve the underwritten moderate-income or market-rate rents. It is assumed that investors prefer new construction because of the superior amenity package and overall condition that product type could offer relative to existing properties in the market. That said, housing tax credit properties being acquired and rehabilitated with an existing mixed-income tenancy in place would likely help to mitigate market concerns related to establishing initial rent levels and minimize any disruption to their existing tenant base.

Most (79%) mixed-income housing credit developments are general occupancy properties. Because of the perceived market risk associated with the upper-bands of income affordability – due to competition from entry-level homeownership opportunities and geographic mobility – stakeholders would prefer to target a broad base of potential tenants that is not limited by age restrictions. As a result, a greater percentage of mixed-income properties offer general occupancy tenancy than the overall housing tax credit portfolio.

Mixed-Income housing tax credit property performance

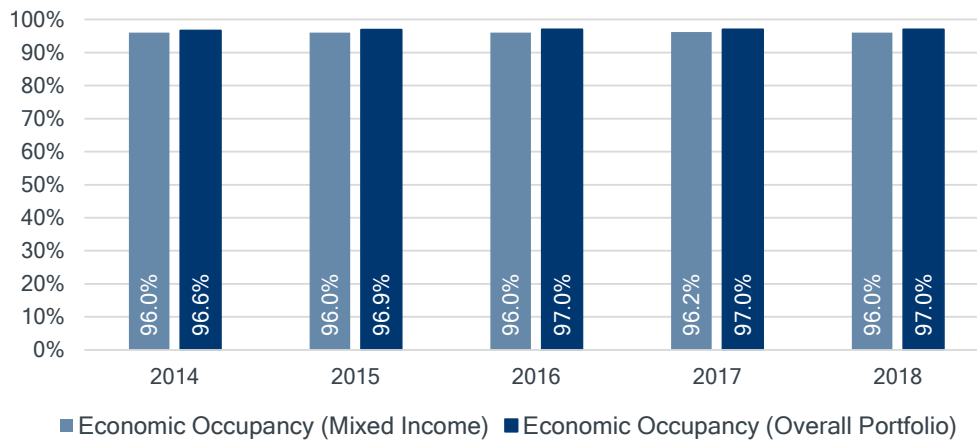
Mixed-income property performance is generally on par with the overall housing tax credit portfolio. Both physical and economic occupancy rates are only slightly less favorable than strict affordable housing credit properties.

Physical Occupancy Comparison 2014-18





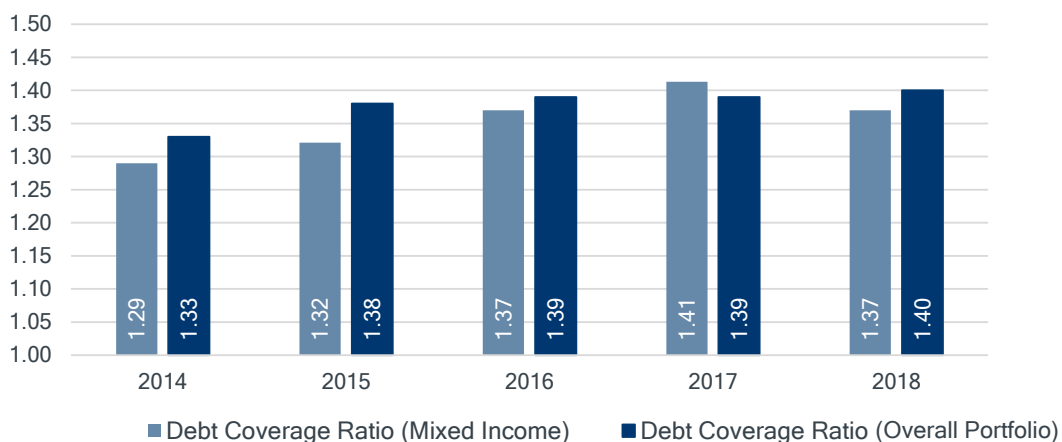
Economic Occupancy Comparison 2014-18



While the median debt coverage ratio for a mixed-income property is slightly less than the median DCR for the average housing tax credit property, the median per unit cash flow amount is 20.5% greater on average for the past three

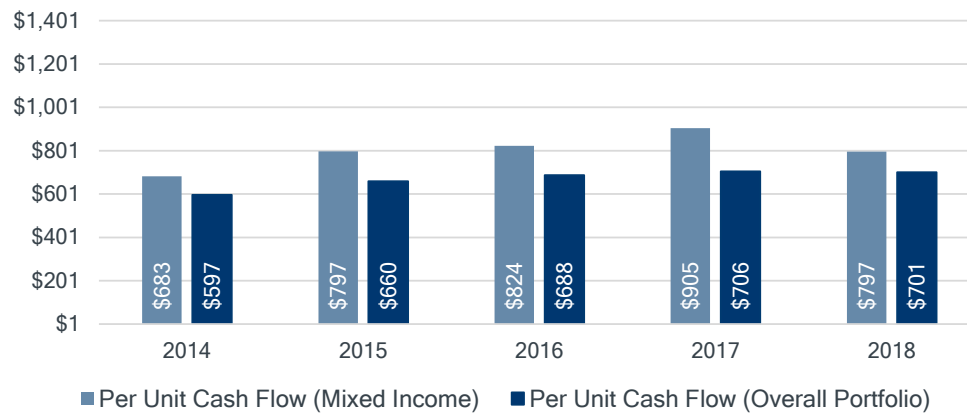
years. Similar to the general population housing tax credit properties, operating trends for mixed-income development have been consistent or have improved since 2016.

Debt Coverage Ratio Comparison 2014-18





Per Unit Cash Flow Comparison 2014-18



Of the 1,906 mixed-income properties, 225 (11.8%) were on the watch list as of Dec. 31, 2018, which corresponds to the watch list representation across the national housing tax credit portfolio.

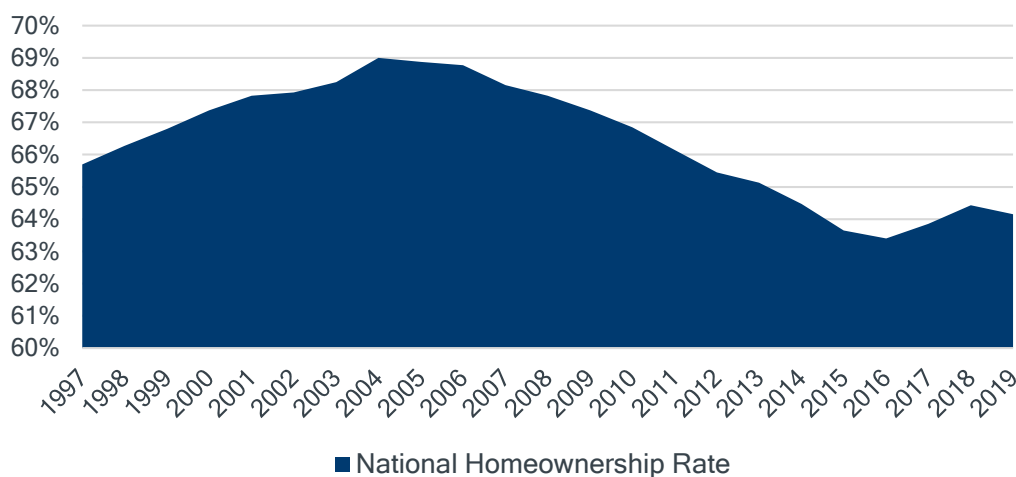
While we have no evidence that suggests mixed-income developments underperformed the general housing tax credit

portfolio, it is worth noting that 18% of the foreclosed properties reported by survey respondents were mixed-income. The mixed-income specific foreclosure rate (the number of mixed-income foreclosures divided by the total number of mixed income properties in the overall portfolio) was 1.47%, which was higher than the national housing credit rate.



KEY HOUSING CREDIT PERFORMANCE INFLUENCES

National Homeownership Rate



Why did housing credit property performance continue to improve?

For the past several years, we had the delight of commenting on successive new operating performance high-water marks, and all-time low instances of underperformance and problem properties. While continued performance improvement is largely supported by the 2017 and 2018 data in this report, we question what aspects of the past decade's progress may begin to swing in the opposite direction, potentially impacting the performance of housing credit properties.

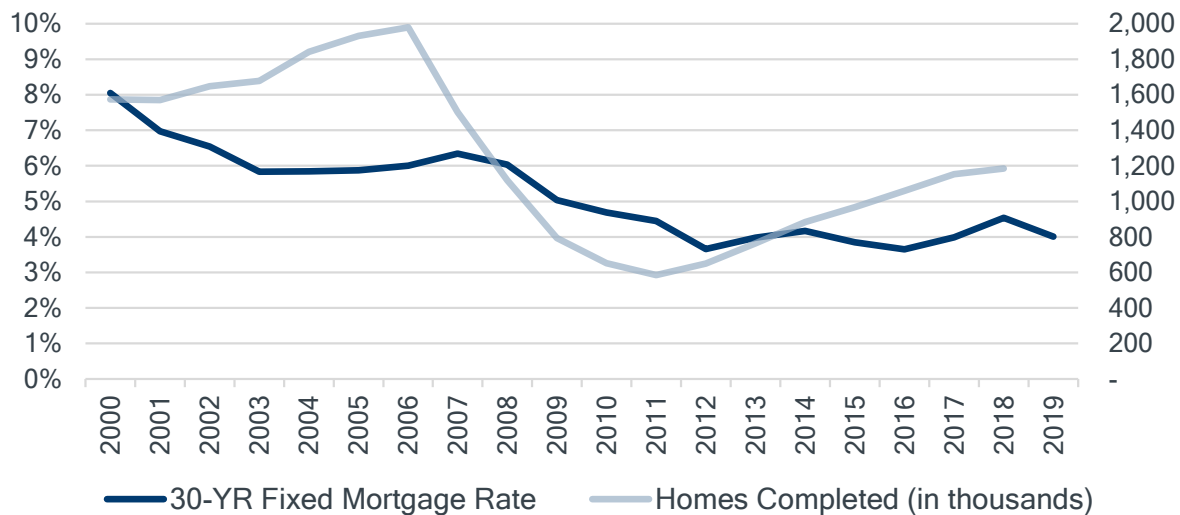
Affordable housing shortage: All those intimately involved in the housing credit program are cognizant of the seemingly unlimited demand for affordable housing. Steadily climbing national median physical occupancy rates among housing credit properties suggest that affordable housing in the U.S. is essentially full at a 97.8% median in 2018, the remaining 2.2% vacancy attributable to natural unit turnover.

Macroeconomic and real estate metrics show no signs of relief in the demand for rental housing, even as the national homeownership rate increased in 2017 and 2018, after falling for 12 consecutive years.¹⁰

¹⁰ <https://www.census.gov/housing/hvs/files/currenthvspress.pdf>



Interest Rate Trend vs. Home Completions



Historically low interest rates are enticing new homeownership, but the new homes being built can barely keep pace with the households demanding them.¹¹ The glut of supply caused by the housing bubble and subsequent burst at the beginning of the new century has run its course, and today developers are wary of making the same mistake – overbuilding in the lead-up to a potential recession. Rising construction costs and labor shortages compound the supply of new homes by focusing developers’ efforts on the luxury end of the development spectrum, concentrating on more profitable endeavors to the detriment of affordable housing supply.

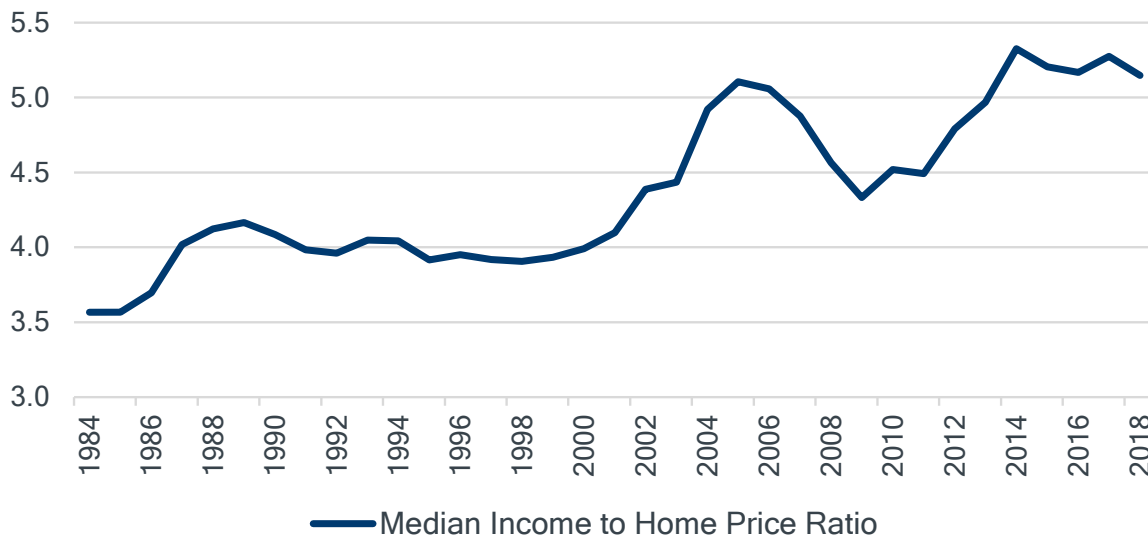
Despite low interest rates, short supply has increased median home pricing nationwide, further placing homeownership out of reach for many low-income families. The ratio of national median home price versus national median household income measures a typical prospective homebuyers’ ability to afford a typical home at any point in time. This ratio increased from 4.5 in 2011 to 5.3 in 2017; it previously peaked in 2014 at 5.3.¹² Using this single metric as an indicator, this means that the current homebuying market is approaching the least affordable levels to date.

¹¹ https://census.gov/construction/nrc/historical_data/index.html

¹² <https://fred.stlouisfed.org>



Median Income to Home Price Ratio



According to the Harvard Joint Center for Housing Studies' [2019 State of the Nation's Housing report](https://www.jchs.harvard.edu/state-nations-housing-2019), the share of cost-burdened U.S. households paying more than 30% of their income on housing declined for the seventh straight year in 2017.¹³ While this sounds encouraging, most of the improvement is among homeowner households, whose overall cost burden rate declined to 22.5%, an improvement of 800 basis points between 2010 and 2017, the lowest level since 2000. Conversely, 47.4% of renter households remained cost burdened, improving just 340 basis points since 2010. As a result, cost-burdened renter households now outnumber cost-burdened homeowner households by more than 3.0 million. Homeowners reaped much of the benefit of the past decade of economic expansion, as renters today account for 10.8 million of the 18.2 million severely burdened households that pay more than 50% of their income for housing.

A March 2018 HUD report, [Understanding Whom the LIHTC Serves](#), shows that the LIHTC continues to serve those most in need of affordable housing. Extremely low-income tenants, those making 30% or less of area median income, were the largest share of housing credit tenants at 44.5%. The percentage of tenants earning between 30% and 40% of AMI was 18.2%. The housing credit program continues to serve the most income burdened households in the country.

While incomes are increasing, and unemployment is at decade-low levels, the need for affordable housing is more prevalent than ever. The data show that demand for affordable housing does not appear to be weakening nationally.

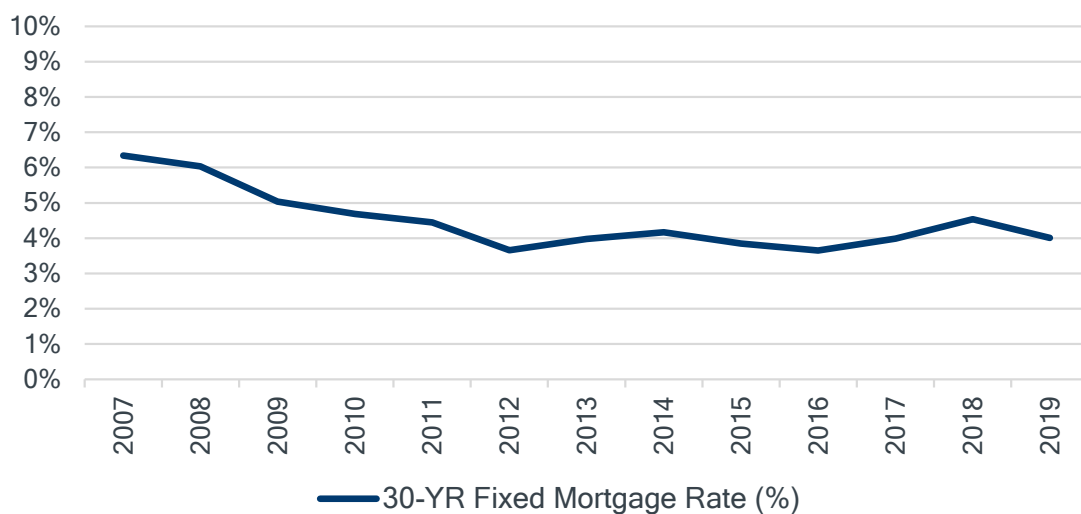
¹³ <https://www.jchs.harvard.edu/state-nations-housing-2019>



Favorable interest rates vs. construction cost: Among the Federal Reserve’s toolbox of quantitative easing methods, a traditional approach to stimulate economic growth is to adjust the federal funds rate (the rate at which banks lend money to one another), which, in turn, influences interest rates nationwide. Lowering interest rates stimulates borrowing during periods of recession by enticing borrowing activity and investment. This course of action was employed by the Fed in the last recession, and the result has been a general declining interest rate environment over the past decade.

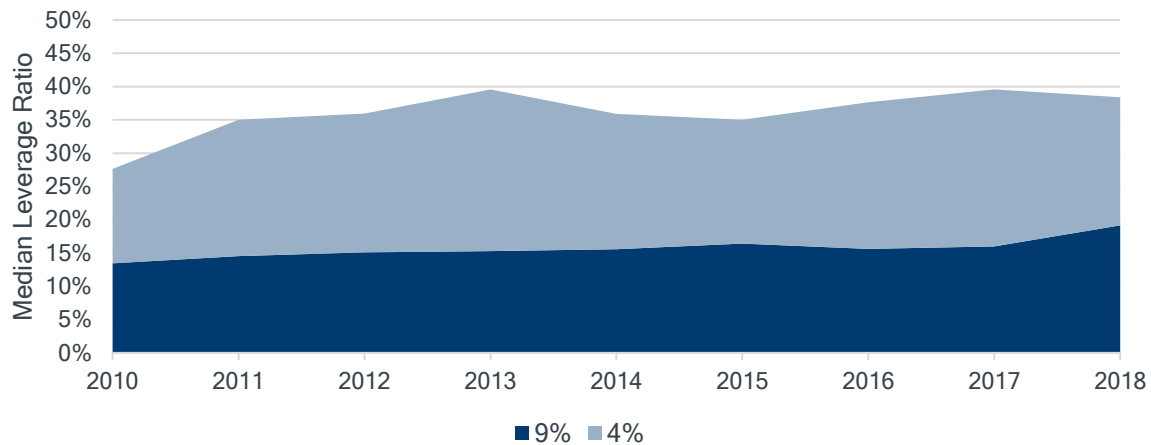
Low interest rates are advantageous for affordable housing properties because they are financed with only enough housing credits to be feasible. Lower annual debt service means less additional financing resources required to help deals “pencil out.” Lower hard debt burdens for housing credit properties mean that they need fewer housing credits to be developed, which in theory means that there are more credits to be allocated to additional properties. The reality of the past decade, however, is that rising construction costs have more than overtaken the structuring benefit afforded by low interest rates.

Interest Rate Trend





Historical Median Leverage Ratio by Credit Type

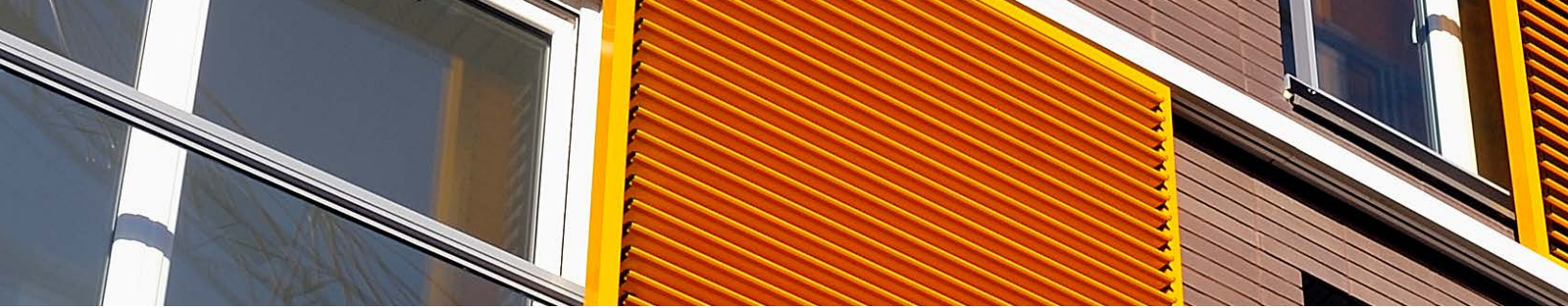


While interest rates may remain low in the near term, the construction cost issue is not going away. The national median total development cost for housing credit properties in the CohnReznick database has increased by 5% annually since 2000. The “hard” costs of construction inputs like timber and steel are increasing due to scarcity and they are being impacted by tariffs on foreign supply despite states’ best efforts at cost containment.

There is no way to predict what will happen with tariffs, and what that means for construction materials, but there is another inherent issue, labor shortage. The National Association of Home Builders (NAHB) analysis of the 2017 American Community Survey (ACS) data indicated that the median age of construction workers in the United States is 42, a year older than the overall national labor force.

Shifting capital stack: As the above graph illustrates, as soft sources of financing have become more and more scarce since the recession, median hard debt ratios among both 4% and 9% properties have increased across the national portfolio. Median leverage at 9% properties increased from 13% in 2010 to 19% in 2018; even more strikingly, median leverage at 4% properties increased from 28% in 2010 to 38% in 2018.

There is no doubt that there are challenges facing the housing credit program, not least of all, rising construction costs and scarcity of soft funding. However, the data show that the overwhelming unmet demand for affordable housing continues to buoy the performance of housing credit properties. While structuring individual properties may prove to be more difficult in the coming years for all the reasons discussed in this section of the report, macroeconomic and demographic data suggest that once complete, units will be absorbed quickly and perform well. Time will tell how overall national median performance metrics are impacted.



APPENDIX A: STUDY METHODOLOGY & DATA APPENDIX

This report is the eighth in a series of studies undertaken by CohnReznick concerning the LIHTC Program. In March 2019, CohnReznick transmitted data requests to all active housing credit syndicators known to the firm and the nation's largest direct housing credit investors. Direct investments are investments made by a single corporate investor directly into a project partnership as opposed to investing through a fund managed by a third-party syndicator. Investor respondents were asked to provide data limited to direct property investments to mitigate what would otherwise be a large overlap of properties' data assembled from participating syndicators' portfolios.

CohnReznick believes that the more than 21,000 properties represented in this study exceeds 70% of the housing credit properties placed in service since the inception of the program that are being actively asset-managed by syndicators and/or investors. By "actively" managed, we refer to those properties that are within their compliance periods (or just beyond), for which an asset manager would produce quarterly or annual reports. We suspect that the gap between CohnReznick's data set and 100% of all properties is largely a result of defunct syndicators, as well as properties placed in service in the earlier years of the housing credit program that have reached the end of their compliance periods, have been disposed of, and have "cycled out" of the program. Additionally, direct investments account for a smaller portion of our data set than we would have expected because of incomplete information. We believe that the sample size represented in the study provides a statistically meaningful basis for our analysis and findings.

Data collection

A participant solicitation email and data collection template were sent to participating organizations in March 2019. Respondents were initially asked to return the data collection template no later than July 2019. However, a few participating respondents indicated that they lacked sufficient time to complete the survey properly, and they were offered a deadline extension. All contacts, whether made by telephone or email, were recorded in response contact logs.

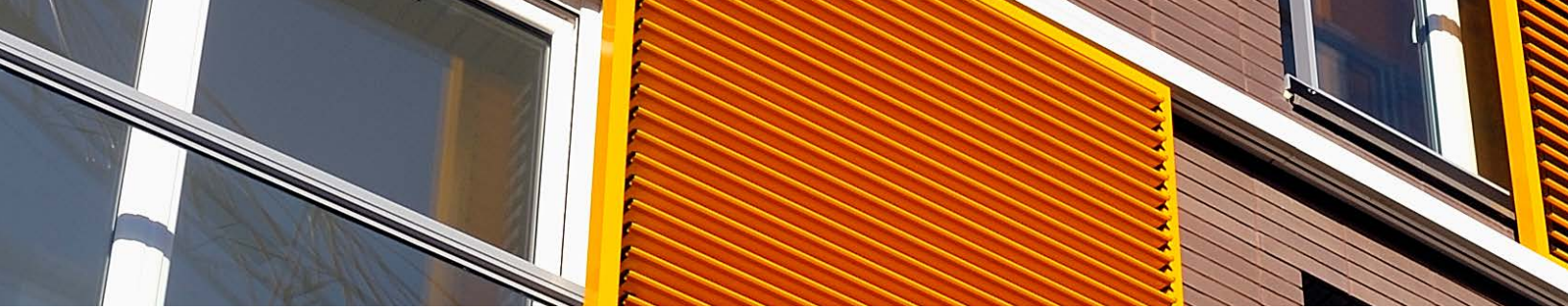
Data collection template

The following shows the main data points requested from each participating investor and syndicator. Instructions were attached to each collection field to minimize interpretation and to confirm each participant's fund-level assumptions. Contact information for CohnReznick professionals was supplied along with the collection template for questions related to the data request. Where applicable, audited financial data were requested and were represented as having been furnished in that form. However, CohnReznick did not perform any independent validation as to whether the data were indeed audited.

A "locked" template provided that the following questions were required to be answered by each respondent prior to their populating any individual property or fund data. CohnReznick also held kick-off calls with all respondents prior to their populating the templates to walk through the following questions, and to note new data requests since our last report.



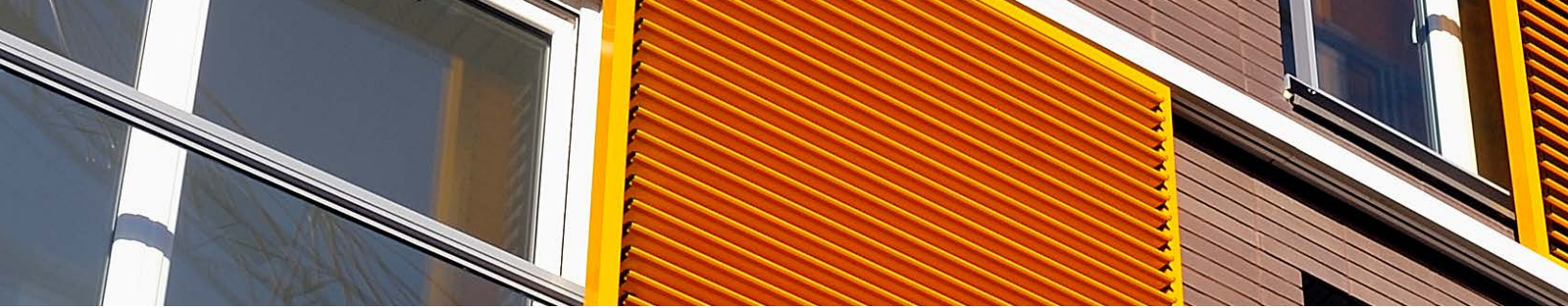
Data Fields	Definitions
Static Data	
CohnReznick Property ID	Property ID that will be populated or used by CohnReznick.
Your Database ID (Number)	Provide the unique identification from your database which permits future identification, if in number format
Your Database ID (Text)	Provide the unique identification from your database which permits future identification, if in text format.
Property Name	Provide the name of the property.
Street Address	Enter the street address of the property.
City	Enter the city of the property.
State	Enter, or select from the dropdown list, the capitalized two-letter state abbreviation. Valid data includes 50 states plus DC for District of Columbia, PR for Puerto Rico, VI for US Virgin Islands, and, GU for Guam.
5-digit ZIP code	Enter the five-digit ZIP code.
Credit Type	Select either 4% or 9%.
Total Development Cost	Enter the total development cost.
Total LP Net Equity (Federal LIHTC only)	Enter total net equity contributed for federal LIHTC credits only. Do not combine state or any other credits. Use closing projected amount and enter the full dollar amount (eg., \$2,000,000 instead of \$2 million).
Total Projected Federal LIHTC to LP	Enter total federal LIHTC credits projected to be delivered to LP at closing. Do not combine state or any other credits.
Calculated Price Per Federal LIHTC	Confirm that the calculated Price per Credit is consistent with your records. If not, please confirm your entries for Total Net Equity amount and Total LIHTC amount.
Development Type	Select from: New Construction, Acq/Rehab, Historic Rehab, and Other
Tenancy Type	Select from: Family, Senior, Special Needs, and Other. Enter "Special Needs" for properties predominantly serving special needs population
Developer Type	Select from: For Profit, Non-Profit, Joint Venture
Affiliated Management Company	Enter whether the management company is affiliated with the developer or general partner. Select from: Yes, No
Total Number of Units	Enter the total number of units.
Total Number of LIHTC Units	Enter the total number of LIHTC units, including manager's unit that is treated as tax credit unit for the applicable fraction purposes.
Project-based Rental Assistance (Yes/No)	Enter "Yes" for properties benefiting from project-based rental assistance either partial or full. Enter "No" if there are no project-based rental subsidies.
Hard Debt (Yes/No)	Enter "Yes" if the property is financed with hard debt. Enter "No" if the property has no hard debt
Hard Debt Leverage Ratio	Enter % (hard debt / total development costs")



Data Fields	Definitions
Variable Data	
Property Status	Select from: Pre-Construction, Construction, Lease-up, Pre-stabilization (leased-up but not yet stabilized), Stabilization (converted to perm loan and met the “stabilization” milestones specified in the LPA), Disposition, Foreclosure, Deed-in-lieu, and Other.
Closing Date	Enter the approximate date when the property was closed.
Placed in Service Date	Enter 4-digit year; enter projected PIS year if not yet in service. If there are multiple buildings on a property with multiple PIS dates, enter the year when the first building was placed in service.
Year Placed in Service	Calculated column.
Date Stabilized	Enter the approximate date when the property was stabilized.
Physical Occupancy	Enter the physical occupancy rate for the year specified. For projects that did not have a full year of stabilized operation, enter the occupancy rate during the stabilized period only.
Economic Occupancy	Enter the economic occupancy rate for the year specified, based on audited financials. Economic occupancy is defined as actual collected rental income divided by gross potential rental income.
DCR (all hard debt)	Enter the debt coverage ratio for the year specified, based on audited financials. Debt coverage ratio is defined: (net operating income – required replacement reserve contributions) / mandatory debt service payments. Leave the cell blank if property has no hard debt.
Net Cash Flow Per Unit Per Annum	Enter the per unit cash flow for the year specified, based on audited financials. Per unit cash flow is defined: (net operating income - required replacement reserve contributions - mandatory debt service payments) / total number of units. For projects that did not have a full year of stabilized operation, enter the annualized per unit cash flow during the stabilized period only.
AHIC Watch List (Yes/No)	Enter “Yes” if the property is on your organization’s current watch list based on AHIC standards.
AHIC Rating	Enter the property’s corresponding AHIC rating: A, B, C, D, F
Operating Deficit Funding Source (if on watch list)	If the property was on your watch list as of 12/31/2018, please enter the prevailing source of deficit funding. Choose from: lower tier operating reserve, operating deficit guarantee, fee deferral, upper tier reserves, syndicator advance, GP advance, project cash surplus, or other.
Operating Expenses	CohnReznick transmitted custom templates to each data respondent using their proprietary chart of accounts. Differences in naming conventions and groupings were mitigated by CohnReznick upon data intake.
Fund Name	Provide the name of the fund each property belongs to. Ensure that fund names are consistent between the fund and property tabs.
CohnReznick Fund ID	Column filled out by CohnReznick.
Fund Type	Select from: Direct, Proprietary, Multi-investor, Guaranteed, Public. Ensure the fund types are consistent between the fund and property tabs.
Fund Interest	Column to identify split properties that are owned by multiple funds. If Property X was split equally among 2 funds, denote two funds in the same line in Fund 1 and Fund 2, with interest of 50% / 50%. The Fund Interest should always add up to 100%.



Data Fields	Definitions
Static Data	
Fund Name	Provide the name for the fund or a unique identification number from your database which permits future identification. Ensure that fund names are consistent with fund names provided in the property tab.
Fund Type	Select from: Direct, Proprietary, Multi-investor, Guaranteed, Public
Year Closed	Enter 4-digit year of fund closing.
Total Gross Equity	Enter the gross ILP equity amount projected at closing. Use the full dollar amount (i.e., \$2,000,000 instead of \$2 million).
Total Net Equity Projected to be Invested in Properties	Enter the net equity amount projected at closing.
Calculated Fund Load	Fund load is automatically calculated based on total gross equity and total net equity.
Original Projected IRR	Enter IRR projected at fund closing with necessary adjustment for property removal/addition, using tax rate assumptions used for closing, e.g., 35%.
Closing Tax Rate Scenario	Enter closing tax rate assumption
Total Projected LIHTC at Closing	Enter the total federal LIHTC projected at fund closing.
Total Projected Other Credits at Closing	Enter the total other credits, i.e., any other credits other than federal LIHTC, projected at fund closing.
Originally Projected 1st Year LIHTC	Enter the first year federal LIHTC projected at fund closing. Do not combine state or any other credits.
Originally Projected 2nd Year LIHTC	Enter the second year federal LIHTC projected at fund closing. Do not combine state or any other credits.
Originally Projected 3rd Year LIHTC	Enter the third year federal LIHTC projected at fund closing. Do not combine state or any other credits.
Maximum Working Capital Reserve Per LPA	Enter the maximum dollar amount of working capital reserve stipulated in the LPA. For funds with a segregated property needs reserve, enter the property needs reserve in a separate column and do not include here.
Calculated Percentage of Original Working Capital Reserve to Total Gross Equity	Reserve percentage is automatically calculated based on original working capital reserve balance and the total gross equity amount.
Maximum Property Needs Reserve Per LPA	Enter the maximum dollar amount of property needs reserve stipulated in the LPA.
Calculated Percentage of Original Property Needs Reserve to Total Gross Equity	Reserve percentage is automatically calculated based on original property needs reserve balance and the total gross equity amount.



Data Fields

Definitions

Variable Data: IRR, Credit, Reserve

Fund Status	Select from Pre-Stabilization, Active and Dissolved.
Performance Current IRR	Enter the most currently projected IRR as of 12/31/2018, as if tax reform had not occurred; aka: the Performance Current IRR.
Economic Current IRR	Enter the most currently projected IRR as of 12/31/2018 including all the implications of tax reform (actual tax rates and impact of RPTOB election); aka: the Economic Current IRR.
Total Projected LIHTC Current	Enter the actual, or currently projected, federal LIHTC.
Total Projected Other Credits Current	Enter the actual, or currently projected, total other credits, i.e., any other credits other than federal LIHTC.
Total Actual 1st Year LIHTC Current	Enter the actual, or currently projected, first year federal LIHTC. Do not combine state or any other credits.
Total Actual 2nd Year LIHTC Current	Enter the actual, or currently projected, second year federal LIHTC projected. Do not combine state or any other credits.
Total Actual 3rd Year LIHTC Current	Enter the actual, or currently projected, third year federal LIHTC projected. Do not combine state or any other credits.
Current Working Capital Reserve Balance as of 12/31/2018	Enter the current balance for the working capital reserve as of 12/31/2018. Include all reserves except for the reserve that is specifically restricted to fund property deficits.
Calculated Percentage of Current Working Capital Reserve to Total Gross Equity	Reserve percentage is automatically calculated based on current working capital reserve balance and the total gross equity amount.
Working Capital Reserve Balance Withdrawn as of 12/31/2018	Enter the working capital reserve balance withdrawn as of 12/31/2018.
Current Property Needs Reserve Balance as of 12/31/2018	Enter the current balance for the property needs reserve as of 12/31/2018. If there are no reserves restricted for funding property deficits, enter \$0.
Calculated Percentage of Current Property Needs Reserve to Total Gross Equity	Reserve percentage is automatically calculated based on current property needs reserve balance and the total gross equity amount.
Property Needs Reserve Balance Withdrawn as of 12/31/2018	Enter the property needs reserve balance withdrawn as of 12/31/2018.
Number of Disposed Properties	Enter the number of underlying properties that have been disposed.
Net Disposition Sales Proceeds	Sales proceeds from all dispositions in the fund, net of all legal, third-party costs, and any applicable local, state, and federal fees and taxes.
Net Disposition Sales Proceeds Distributed to Investors	Portion of sales proceeds from all dispositions in the fund that was distributed to investors, after all current or accrued fees owed to the sponsor have been paid.



Data Fields	Definitions
Name of General Partner	Enter the name of the general partner, or the developer.
Year of GP Removal	If applicable, provide the year when the general partner was removed.
Year of Foreclosure	Enter the year when the property was foreclosed.
Calculated Year of Compliance Period	Automatically calculated based on the First Year of Credit Delivery and the Year of Foreclosure.
Reason For Foreclosure	Enter the reason for foreclosure.
Total Recaptured and Lost Federal LIHTC	Enter the sum of the recaptured federal LIHTC amount and the future federal LIHTC amount that was foregone due to the foreclosure
Was the LP covered by recapture guarantee? (Yes/No)	Enter “Yes” if the investors were covered by recapture guarantee; otherwise, enter “No”.
Describe negative financial impacts to the investors	Describe negative financial impacts to the investors in terms of IRR, penalty, etc.
Describe negative financial impacts to you as syndicator	Describe negative financial impacts to your organization as syndicator. Describe how much you had to contribute from your own pocket in your effort to save the property. Describe your funding source.

Data processing

The receipt of a completed survey questionnaire and any relevant comments made by the respondents were recorded in the contact logs. All questionnaires were first analyzed for data completeness and systematic errors for reasons such as misinterpretation. If questionnaires were returned with incomplete data, respondents were contacted immediately to determine the possibility of providing missing data and, in limited circumstances, the consequences of participants being unable to accommodate the entire data request. Other follow-up activities were conducted to ensure data integrity. Upon completion of the first-round processing, data were compiled, filtered, and normalized.

Each data element provided was then uploaded to an Access database maintained by CohnReznick. The database was built in a completely confidential manner to ensure that no

individual data points or groups of individual data points could be attributed to any data provider. The data were loaded into the database to ensure the consistency of field data types and to allow for flexible and repeatable calculation.

Data entered into the database were checked for arithmetical errors and flagged for any large discrepancies between the current and previous years’ data for trend warnings. Based on industry standards and a lengthy programmatic filtering system designed by CohnReznick, outliers that could skew the study results were screened and later removed from the affected calculations. Based on predefined data outputs and calculation definitions, CohnReznick ran queries and wrote scripts to perform calculations and group datasets (e.g., linking ZIP codes to applicable counties) for segmentation analysis. Aggregated data and outputs were re-exported into a Microsoft® Excel template for further testing and quality control analysis.

About Us

The Tax Credit Investment Services Group

CohnReznick's Tax Credit Investment Services (TCIS) is a dedicated business unit within CohnReznick that provides strategic advisory and due diligence services to help institutional investors make informed decisions on acquiring and managing tax-advantaged investments. Not only do community development tax credit investments help banks meet their obligations under the Community Reinvestment Act (CRA), but they also offer institutional investors a competitive rate of return and a very low risk profile.

The TCIS team is composed of a multi-disciplinary group of professionals including CPAs, financial analysts and other professionals with real estate, banking, and public-sector experience. Working with commercial real estate, compliance, and corporate tax personnel, TCIS provides advisory services related to equity market conditions, investment options, investment due diligence, regulatory requirements, and investment impacts to financial statements.

In addition to the professional experience of TCIS team members, the group's clients benefit from the knowledge and experience of hundreds of CohnReznick audit, tax, and consulting professionals working on investment tax credit transactions on a daily basis.

For more information about TCIS, please visit our website.

Cindy Fang

Partner

617.603.4524

cindy.fang@cohnreznick.com

Matt Barcello

Senior Manager

617.603.4514

matthew.barcello@cohnreznick.com

CohnReznick – TCIS

One Boston Place, Suite 500

Boston, MA 02108

617.648.1400

TCIS@cohnreznick.com



About CohnReznick

As a leading advisory, assurance, and tax firm, CohnReznick helps forward-thinking organizations achieve their vision by optimizing performance, maximizing value, and managing risk. Clients benefit from the right team with the right capabilities; proven processes customized to their individual needs; and leaders with vital industry knowledge and relationships. Headquartered in New York, NY, with offices nationwide, the firm serves organizations around the world through its global subsidiaries and membership in Nexia International.

For more information, visit
www.cohnreznick.com



For more information, visit
www.cohnreznick.com

CohnReznick 
ADVISORY • ASSURANCE • TAX