

Housing Tax Credit Investments:
*Investment and
Operational Performance*



A CohnReznick LLP Report
Tax Credit Investment Services

APRIL 2018

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ACCOUNTING • TAX • ADVISORY

Introduction

This is the seventh in a series of periodic reports issued by CohnReznick LLP that address the performance of properties financed with federal low-income 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 some of the nation's largest institutional investors. Thirty-three housing tax credit syndicators and two of the nation's largest investors participated in the survey. A complete list of study participants appears on the Acknowledgements page. This effort would not have been possible without the support of these organizations. CohnReznick analyzed data collected from more than 22,000 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

April 2018

Report Restrictions

CohnReznick has used information gathered from the housing credit industry participants listed on the Acknowledgements page of this report to compile this study. The information provided to us has not been independently tested or verified. As a result, we have relied exclusively on the study participants for the accuracy and completeness of their data. No study can be guaranteed to be 100% accurate, and errors may occur. CohnReznick does not guarantee the completeness or the accuracy of the data submitted by study participants and thus does not accept responsibility for your reliance on this report or any of the information contained herein.

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Executive Summary



Executive Summary

The federal low-income house tax credit (housing tax credit) 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 approximately 100,000 units of affordable housing that support roughly 96,000 jobs and generate \$3.5 billion in tax revenue.¹ No other local, state, or federal program comes close.

Through its 30-plus year history, the affordable housing built with housing tax credits has forged an impressive record of strong financial performance. The overwhelming majority of properties financed with housing tax credits are fully occupied, with strong net cashflows and foreclosure rates that are incredibly low.

Disproving some who may view housing credit properties as a drag on a local housing market, a 2016 Trulia report² focusing on the nation's 20 least affordable housing markets determined that housing credit properties had no negative effects on nearby home values. Indeed, the estimated one-year impact of building 100 housing tax credit units included: \$7.9 million in additional local income, \$827,000 in additional tax and other revenue for local governments, and 122 additional local jobs.

¹ <http://rentalhousingaction.org/>

² Young, Cheryl; Trulia; There Doesn't Go The Neighborhood; November 16, 2016

Beyond financial performance and the positive impact to local communities, housing credit properties first and foremost are safe and healthy housing options for the nation's most at-risk populations, the working poor and elderly.

CohnReznick produces the industry track record by surveying the owners of properties financed with housing tax credit properties. The latest research shows that housing tax credit properties are operating better than in any period during the program's history. In 2016, the surveyed portfolio, which consisted of approximately 23,000 properties, reported, on a median basis, **97.9%** physical occupancy rate, **1.40** debt coverage ratio, and **\$688** per-unit per annum net cash flow (cash flow available after paying for expenses, mandatory debt services, and required replacement reserve contributions).

Performance continues to be strong for many reasons, primarily:

- The growing need for affordable housing supports high rates of occupancy for housing tax credit properties and strong operating performance. There are 11.2 million severely cost-burdened renter households (i.e., those who spend more than 50% of their income on housing), which is projected to increase to more than 13 million by 2025³. Compounding the problem, there is an estimated national shortage of 7.4 million affordable rental homes for extremely low-income households.⁴ Not surprisingly, virtually all housing tax credit properties are fully occupied barring normal turnovers, many with lengthy waiting lists. From an operating performance perspective, it is not uncommon to see a favorable variance between the underwritten vacancy assumptions and actual vacancy. The better than projected performance bolsters rental revenue and provides a cushion against unexpected operating expense spikes, less than projected rent increases due to stagnant area median income growth, or other factors that could otherwise stress a property's operating performance.
- The unique public-private partnership structure of the housing tax credit program supports a very low rate of foreclosures compared to any other type of real estate. Authorized under the Internal Revenue Code Section 42, the administration of the housing tax credit program resides primarily with the state credit-allocating agencies. The real charm of the housing tax credit program, compared to most other federal affordable housing programs, lies in the reliance on sophisticated capital. In addition to underwriting reviews undertaken by the state agencies, housing tax credit developments are underwritten by privately held for-profit and non-profit lenders and syndicators who acquire, structure, and asset manage these investments for institutional investors. Ultimately, the success of housing tax credit investments is collectively "guaranteed" by stakeholders that share common goals.

³ Joint Center for Housing Studies of Harvard University; *The State of the Nation's Housing 2017*; http://www.jchs.harvard.edu/research/state_nations_housing; accessed July 14, 2017

⁴ National Low Income Housing Coalition; *Out of Reach 2017, The High Cost of Housing*; http://nlihc.org/sites/default/files/oor/OOR_2017.pdf; accessed July 14, 2017

- CohnReznick's industry experience and interviews with survey respondents allowed us to conclude that the housing tax credit industry has made significant strides in improving the quality of underwriting and asset management practices. For example, participants in the CohnReznick study indicated that the availability of benchmarked operating data from their own portfolios, state credit allocation agencies, and industry data providers have allowed them to improve their expense underwriting. The variability between underwritten and actual expenses that typified the first generation of housing credit properties has shrunk significantly, which, in turn, supports the favorable operating performance metrics reported by housing tax credit properties.

Some of these factors may change. Housing tax credit prices adjusted downward at the end of 2016. Long-term interest rates may also eventually rise to be closer to the historical level. Sources of soft financing are also becoming increasingly scarce. Two foundational factors that contribute to the success of the housing tax credit program that don't appear to be changing in the near term are the already high and increasing demand for affordable housing and the solid structure of the housing credit program.

The production power of the housing tax credit program is limited by statutory authorization, among other factors. The result is that housing tax credit production is unable to keep up with the rising demand for affordable housing.

In March 2018, Congress passed an omnibus spending bill which included two key improvements to the housing credit program. The additions to the bill provide a 12.5% increase in housing credit allocation for each of the four years 2018-2022, which would be a significant step toward addressing the rising national demand for affordable housing. The bill also includes an income averaging provision which would allow the 60% AMI ceiling to apply to the average of all apartments in a project rather than each individual Housing Credit apartment. These provisions were crucial additions to offset the impact of the reduced corporate tax rate enacted through the Tax Cuts and Jobs Act, which was projected to reduce tax credit equity.

Introduction



Congress created the low-income housing tax credit program in 1986 as part of a comprehensive federal tax code reform. Adopted amidst dramatic tax code changes, it was significantly improved by the Mitchell-Danforth Tax 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 has become the most significant resource for creating, rehabilitating, and preserving affordable housing in the United States. The National Council of State Housing Agencies estimated that nearly \$3 billion worth of affordable apartment units have been built under the housing tax credit program since inception, which have provided homes for roughly 6.7 million low-income families, seniors, veterans, Native Americans, farmworkers, and people with disabilities that they otherwise could not afford.

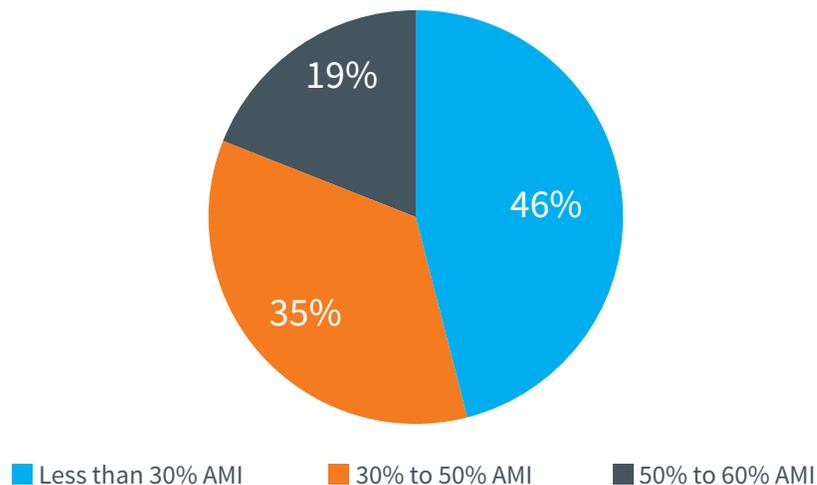
How do housing tax credits work?

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 area median income (AMI). While 60% AMI is the upper-income limit for tax credit residency, a 2012 report published by the U.S. Department of Housing and Urban

Development Office of Policy Development and Research¹ found that, of the households occupying housing tax credit units:

- 46% earned less than 30% of AMI, 35% earned between 30% and 50% of AMI, and the remaining 19% earned no more than 60% of AMI;

Tenant Income Profile



- Over 6% had at least one disabled resident;
- About one-third had at least one member over the age of 61.

Needless to say, the housing tax credit program serves the country's most vulnerable populations.

The IRS sets rules through the tax code, 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 the projects that 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.

Competition for the most valuable 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 must distribute is 3 to 1. Because of the highly competitive nature of the reservation process, many developers must submit and resubmit applications, modifying their development

¹ Horn, Karen M., and O'Regan, Katherine M.; U.S. Department of Housing and Urban Development Office of Policy Development and Research; What can we learn about the LIHTC program by looking at the tenants?; July 1, 2012

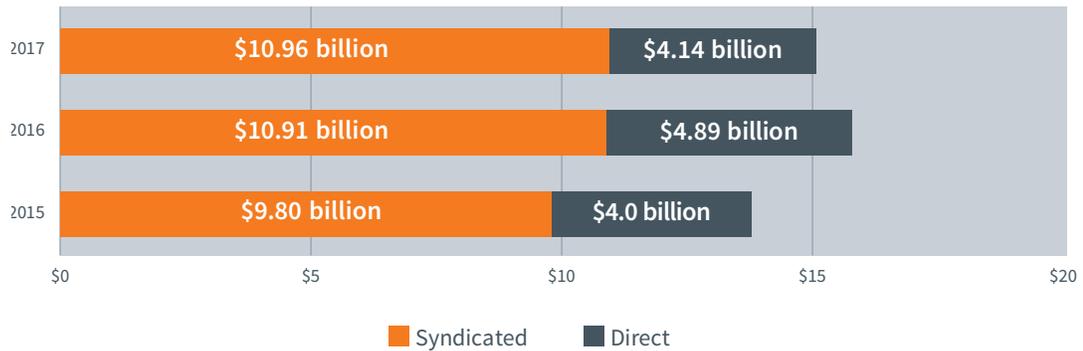
plans to better align their project proposal with stated policy goals, ultimately improving the competitiveness of their project, before receiving a credit reservation.

Because developers of property partnerships need capital to finance their housing credit developments (and because they typically have no use for the tax benefits), the 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 construction of the affordable housing development is completed, the private investor will receive tax credits at an agreed-upon rate. To keep all the tax credits, the affordable housing property must be maintained in accordance with the rules of the housing tax program for 15 years. 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 one of two primary investment approaches: direct investment or syndicated investment. Under the direct investment model, an investor directly owns a limited partner interest in a partnership that owns an underlying property, with the developer or an affiliate typically assuming the general partner role. The direct investment approach is usually feasible only for investors that have sufficient internal resources dedicated to the acquisition, underwriting, and asset management of housing tax credit investments. Consequently, this approach is favored by a handful of large institutional investors.

In a syndicated investment, a syndicator provides a limited amount of 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 investment to investors. 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. Based on CohnReznick's survey, we estimate that, in recent years, roughly 75% of all housing credit investments were acquired through syndication.

Total Housing Credit Equity Volume

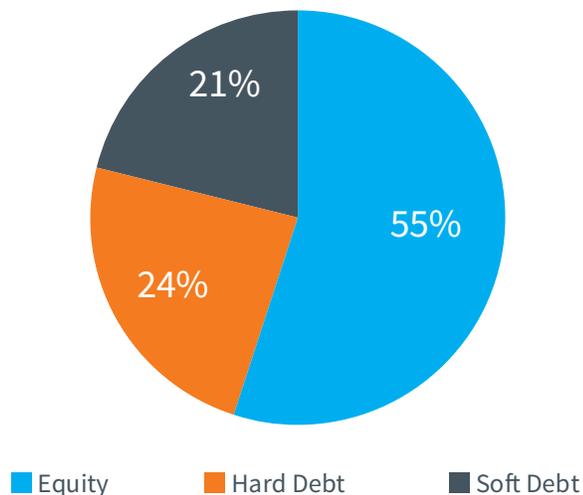


How is a typical housing tax credit project financed?

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 in the context of a lower corporate tax rate. 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 75%-80% with investor equity, with the balance coming from conventional mortgage financing and, in some cases, “soft” financing from government lenders.

The following graph illustrates the average capital stack of all the housing credit properties (9% and 4% included) closed since 2012.

Average Capital Stack: All Housing Tax Credit Projects Since 2012



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 these 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 public private partnership foster an efficient use of the capital subsidy?

The housing tax credit program has proven 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 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, 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.

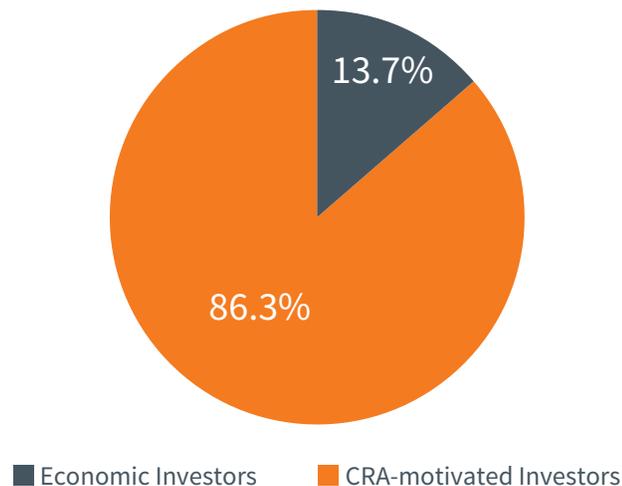
Over time, numerous mechanisms have been built into the development and management processes to hold different participants accountable for their performance, such as payment and performance bonds for general contractors, development completion guarantees for developers, operating deficit guarantees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

Why do institutional investors invest in housing tax credit investments?

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 exited the housing credit market in 2007 and 2008. CohnReznick estimates that on average, approximately \$15 billion of capital was committed to housing tax credit investments in the last three years, and that the banking sector was the source for approximately 85% of that amount. The following chart illustrates the 2017 housing credit equity market composition.

Housing Tax Credit Equity Market: CRA vs. Economic Volume



Multiple factors make housing tax credit investments attractive to banks:

- **Increasing after-tax earnings and lowering 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 passive 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 a 15-year period but is claimed over an accelerated 10-year timeframe, 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 last 30 years, except for rare recession-driven disruptions.
- **Satisfying CRA lending and investment test objectives:** Banks are obligated, under the Community Reinvestment Act (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 potential loss of capital. The strong financial performance 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.

How much does the housing tax credit program cost?

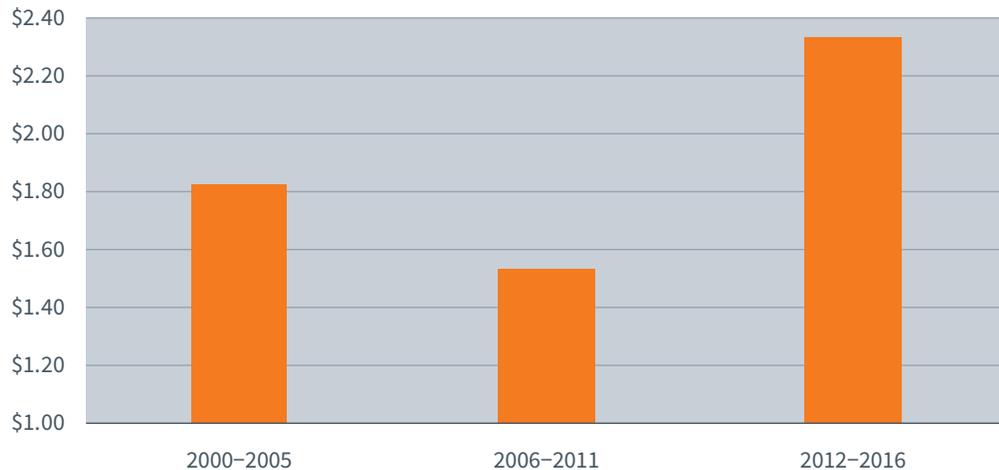
Unlike most other tax expenditures, the cost of the housing tax credit program can be calculated with precision because the program’s funding authority is subject to a volume cap. The Joint Committee on Taxation estimated the costs of more than 230 tax expenditures for fiscal years 2016-2020. The housing tax credit program does not rank among the 25 most expensive tax expenditures for the federal government.²

² Joint Committee of Taxation; Estimates of Federal Tax Expenditures for Fiscal Years 2016-2020; January 30, 2017; JCX-3-17

More important, 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 2000.³ Between 2000 and 2005, the ratio of tax credits to dollars of private funding was 1.82; however, if we view the most recent period, 2012-2016, this ratio increased to 2.33.

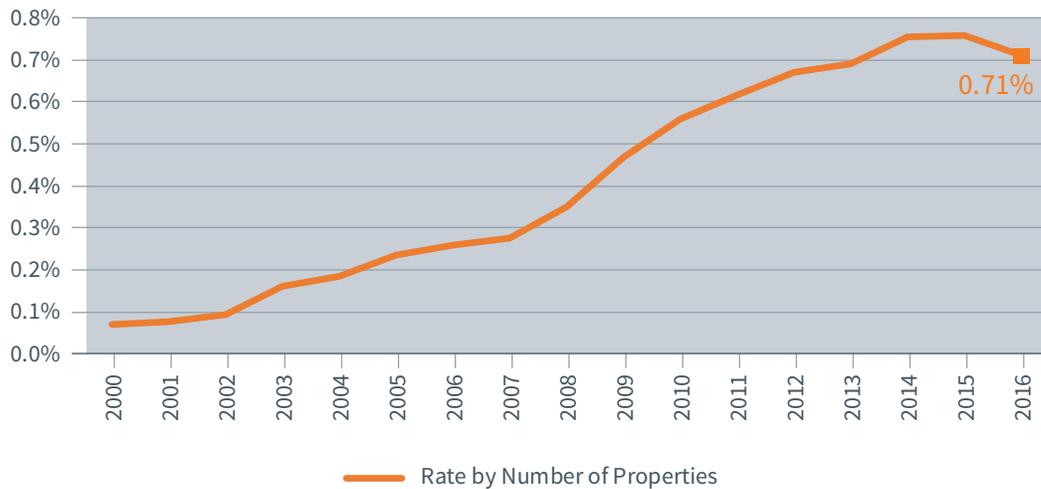
Average Dollars of Additional Private Equity and Debt Raised per Dollar of Credit Allocated



- By 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 0.71% cumulative foreclosure rate, speaks to the extremely low "bad" debt cost of government tax expenditure.

³ 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 fee, seller notes and other forms of debt are from private sources.

Cumulative Foreclosure Rate



- The cost of the program is effectively offset by the following: Per the National Association of Home Builders, the estimated one-year impact of building 100 housing tax credit units included: \$7.9 million in local income, \$827,000 in taxes and other revenue for local governments, and 122 local jobs. The estimated annual recurring impact includes: \$2.5 million in local income, \$441,000 in taxes and 30 local jobs.
- Disproving NIMBY sentiments of some who view housing credit properties as a drag on a local housing market, a 2016 Trulia report⁴ focusing on the nation's 20 least affordable housing markets showed that housing credit properties built had no negative effects on nearby home values.
- In addition to the program's crucial role in creating much needed affordable housing rental housing, the program has generated numerous savings through reduction in Medicare, Medicaid, and other spending.⁵

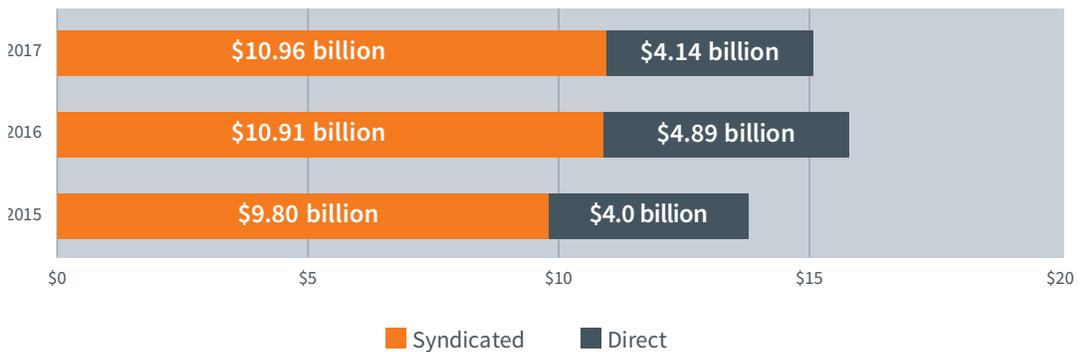
⁴ Young, Cheryl; Trulia; *There Doesn't Go The Neighborhood*; November 16, 2016

⁵ Sturtevant, Lisa and Viveiros, Janet; *How Investing in Housing Can Save on Health Care*; January 2016

Fund Performance

In years 2015-2017, on average \$15 billion in equity was funneled into housing credit financed developments annually. After reaching a historical high in 2016, housing tax credit equity volume decreased by 10% in 2017 amidst the nearly year-long prospect of reduced corporate tax rates.

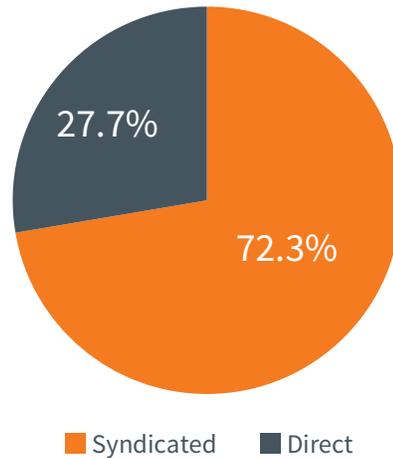
Total Housing Equity Credit Volume



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 interest in a partnership that in turn owns an underlying property; the developer or an affiliate typically assumes the general partner 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. 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 interests in funds organized by the syndicator, and the fund in turn owns the limited partner interests in underlying property partnerships.

Of the \$15 billion total equity closed in 2017, 73% (\$11.0 billion) was syndicated and 27% (\$4.1 billion) was directly invested. While representing nearly one third of the total industry volume, direct investment is traditionally concentrated amongst a small number of investors. The vast majority of investors participate through the syndicated platform.

Housing Credit Equity Investment Method — Three Year Average (% , 2015–2017)



The Role of the Syndicator

There are approximately 40 active housing credit syndicators, many of which date back to the inception of the housing tax credit program 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 2016.

To accommodate the demand for housing credits and to take advantage of economies of scale, a syndicator typically acquires equity interests in several property partnerships. Because property developers need capital to finance their housing credit developments (and because they typically have no use for the tax benefits), the developers assign the rights to the future benefits (housing credits and losses) 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 investment, 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 investment to investors. 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 fee payments referred to as the “load.” A fund’s load is the percentage of the total equity investment used as reimbursement and/or compensation for various services, including organizational and offering expenses, acquisition fees and expenses, and asset and partnership management fees. The size of a fund’s load can vary from fund to fund and can be sensitive to market conditions.

We have observed a 5.00%- 8.00% 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. As housing credit pricing has increased over the last 5-7 years prior to the tax-reform related market adjustment, syndicators have either had to reduce or defer their loads to attract investor capital.

Fund Investment Options

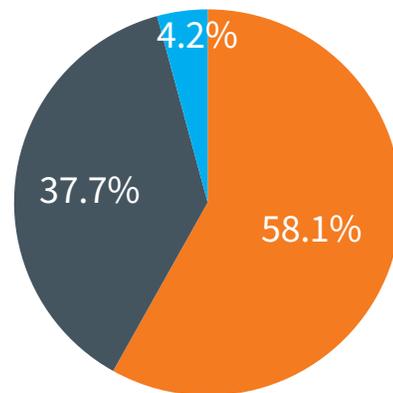
There are two primary investment options when working with a syndicator: **proprietary funds** and **multi-investor funds**. Proprietary fund investments are designed to manage the equity capital of a single investor. Multi-investor funds, as their name suggests, look more like mutual funds, since they are organized to raise capital from a handful of investors 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 Community Reinvestment Act (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 investment is to earn CRA credit through their housing credit investments. The principal advantage of a multi-investor fund is risk diversification.

Investors had a third option in the years between 1995 and 2013 — they could invest in either a proprietary fund or a multi-investor fund and have their yield 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 part because the proportional amortization method essentially put guaranteed and non-guaranteed investments on the same footing for accounting purposes, the guaranteed investment execution has limited application in today’s market. Because of the small number of recent guaranteed yield investments, we have omitted their inclusion in the following discussion of investment yield and credit delivery.

The following graph illustrates more than 1,400 surveyed housing tax credit funds (closed in 2000 or later) organized by fund type and presented as a percentage of total gross equity.

- Between 2000 and 2016, approximately 58% 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 under-representation of proprietary investments, due to some data providers not consistently reporting proprietary investments.

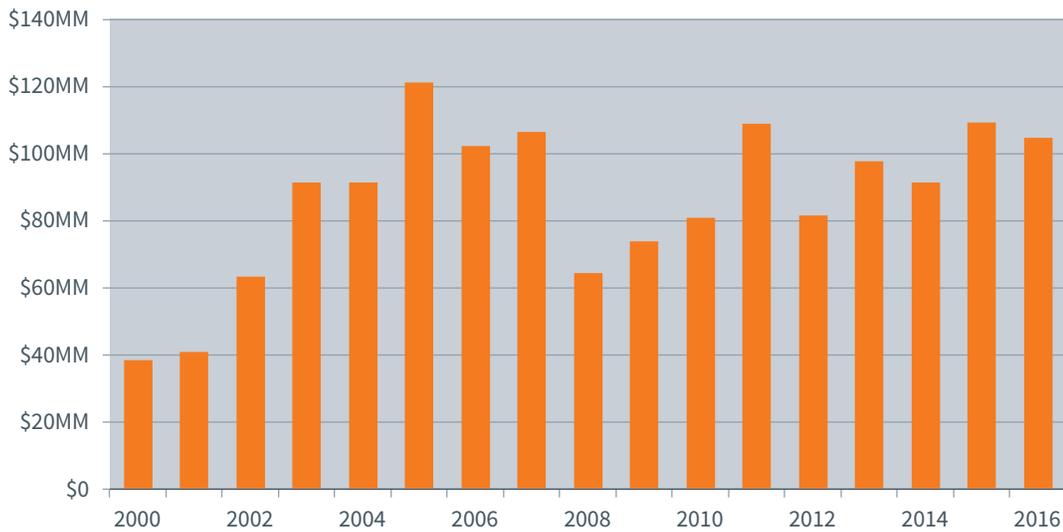
Portfolio Composition by Fund Type



■ Multi-Investor ■ Proprietary ■ Guaranteed

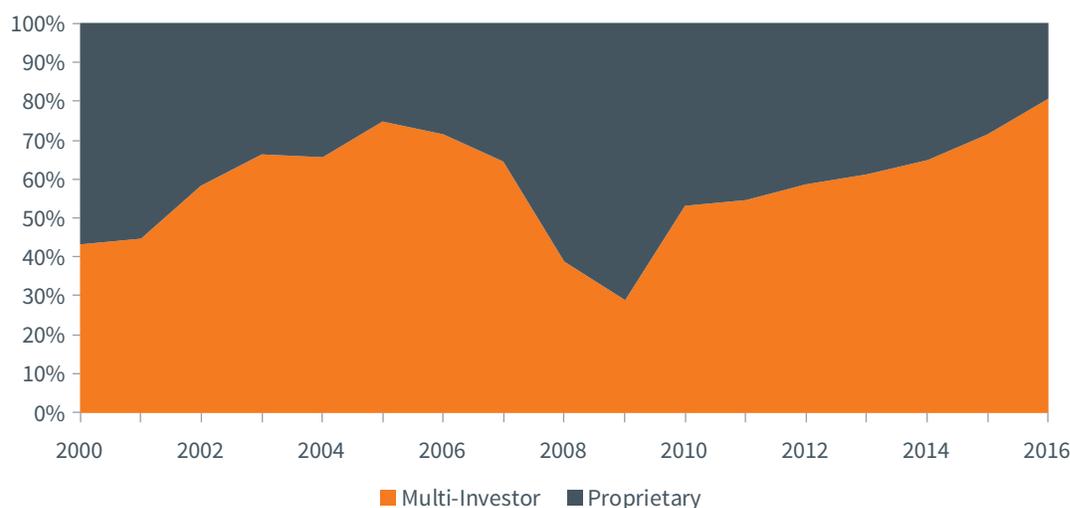
- On average, surveyed multi-investor funds represented over \$89 million in total equity; while surveyed proprietary funds represented \$51 million in total equity. The average size difference between multi-investor and proprietary funds is driven by the fact that multi-investor funds are typically larger to accommodate multiple investors.
- The size and characteristics of multi-investor funds have evolved over time. Multi-investor funds generally increased in average size between 2000 and 2007, in the lead-up to the recession. In 2008, when proprietary funds dominated the equity market, the average multi-investor fund was \$64 million. In the intervening years, however, the multi-investor fund market has rebounded, and the average fund size is once again at pre-recession levels. In 2016, the average multi-investor fund was closed with \$104 million in equity.

Average Multi-Investor Fund Size Since 2000



- Investment decisions that influence fund composition have become much more complicated over the years. There tends to be a shift towards proprietary investing when market demand is not as strong. This is best illustrated by the 2008-2009 recessionary period when over 61% of the syndicated equity was executed through proprietary investments. This market behavior is due to CRA considerations, compared to economic returns, are less directly influenced by market conditions. 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.

Syndicated Fund Market Composition Since 2000



- In recent years, multi-investor funds increasingly using 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 over half of the multi-investor fund offerings in the last several years to contain the popular tier pricing structure.

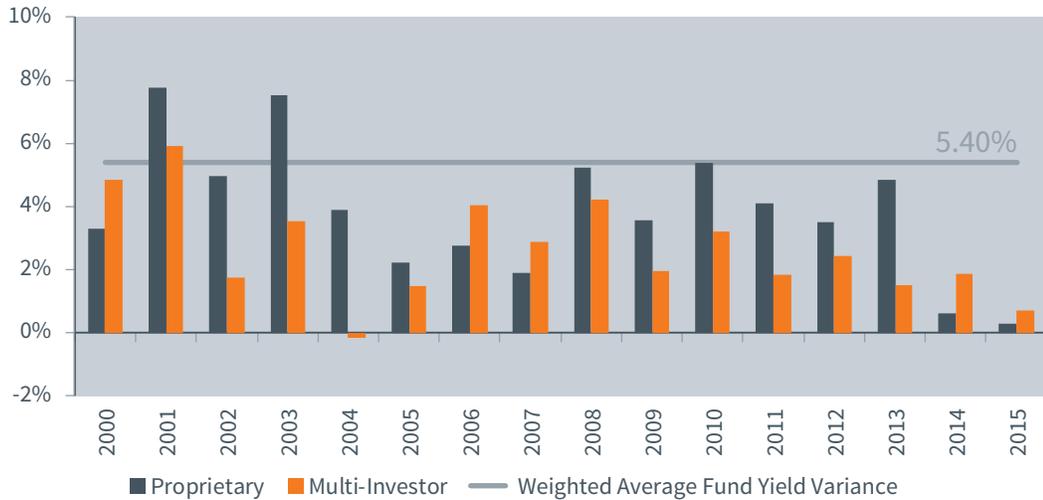
Fund Yield Variance Analysis

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. It is important to consider the performance of housing tax credit funds in terms of actual income tax benefits realized versus the originally projected benefits. We have chosen to present investment performance in terms of yield, overall tax credit delivery, and the initial years of tax credit delivery relative to originally projected amounts.

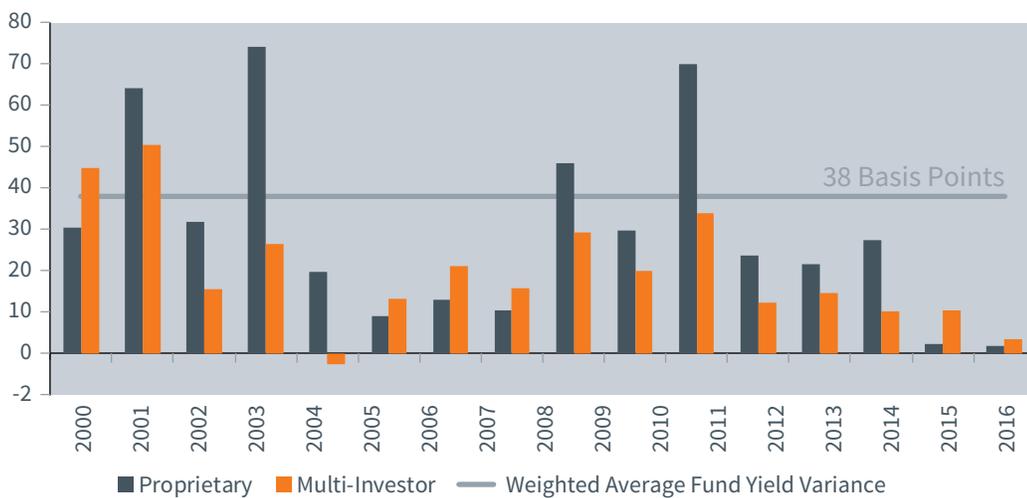
As we have defined the term, yield variance measures the difference between the originally projected yield at investment closing and the most current yield projection (December 31, 2016, for purposes of our survey). A positive variance indicates a greater than originally projected yield. We removed housing credit funds with credit enhancement (“guaranteed funds”) from this analysis because guaranteed funds are structured with yield maintenance mechanisms that ensure a predictable yield to investors.

Since 2000, on a weighted average basis (where yield variances for individual funds are aggregated and weighted by equity), survey respondents reported a positive 5.4% variance, or a positive 38 basis point variance between actual and projected yields.

Weighted Average Fund Yield Variance (%) by Fund Type

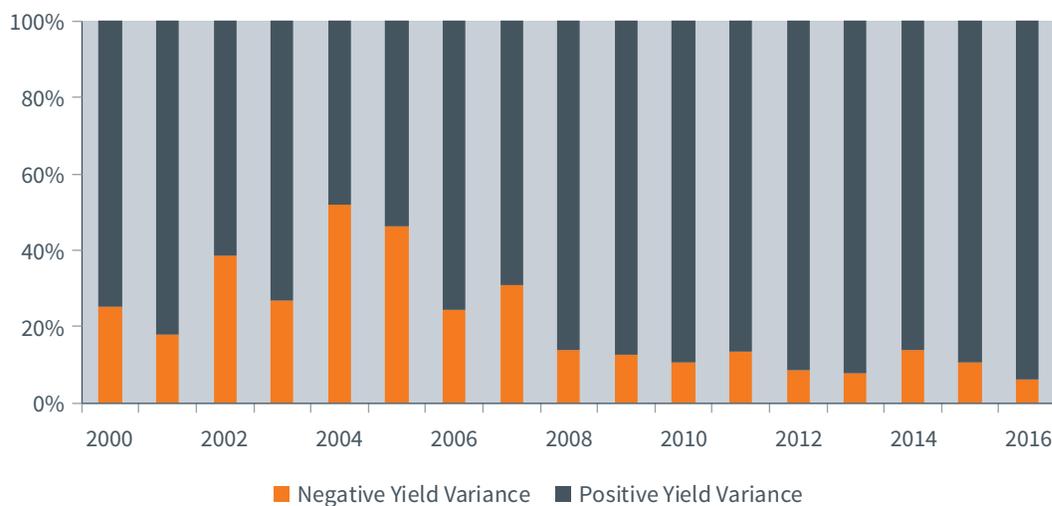


Weighted Average Fund Yield Variance (Basis Points) by Fund Type



- Proprietary funds, in general, have reported larger weighted average yield variances than their multi-investor counterparts. The magnitude of the variance between the two fund types was likely affected by the way syndicators define “original” yields for proprietary funds, that tend to be much less specified at closing than a multi-investor fund. Given the differing methodologies that syndicators employ to track proprietary investment performance data, we focused on multi-investor fund performance only for the remainder of this section.
- Aside from 2004, yield variance reported by multi-investor funds has been positive in each year on a weighted average basis. With rare exceptions, surveyed respondents collectively delivered investment return, through December 31, 2016, that exceeded the original projected level by 0.7% to 4.2% (by fund closing year) in the last ten years.
- Over the years, the incidence of funds reporting negative yield variance has also steadily declined.

Incidence of Multi-Investor Fund 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, or if equity pay-in schedules are adjusted to postpone capital contributions, or if under the so-called adjustor provisions, remaining investor capital contributions are reduced to the extent necessary to re-establish the target yield.
- Investment yield reporting for 2017 will be affected by the most sweeping tax reform in the last 30 years, including incorporating a 21% corporate tax rate. Because of this, we anticipate the future investment yield variance reporting will bifurcate yield variance arising from economic performance from that solely based on change in corporate tax rate assumptions.

Fund Credit Delivery Variance Analysis

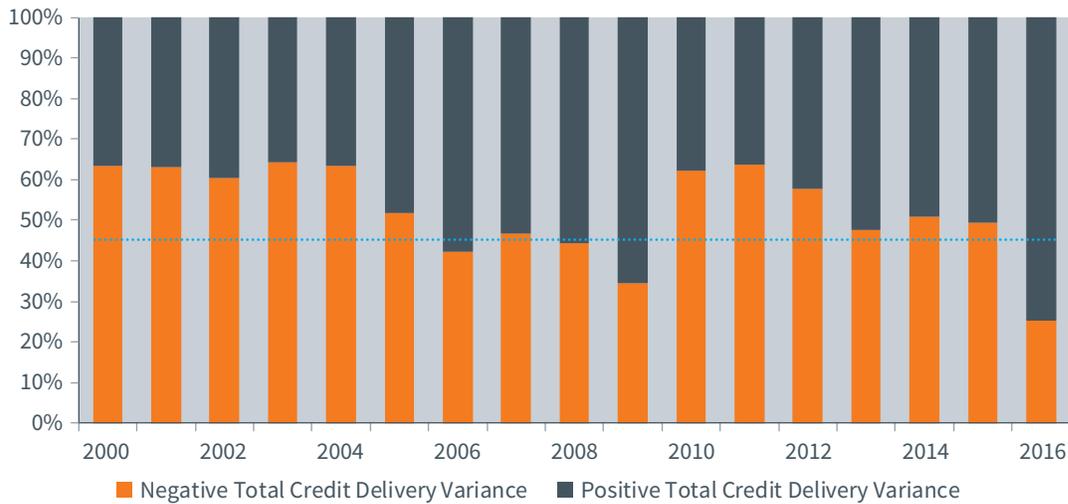
The average housing credit investment derives approximately 75% of its net investment benefits from housing credits, with the balance originating from passive losses. Because housing tax credits are calculated based on qualified development costs, a property's future delivery of tax credits is somewhat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

Most 9% credit investments are underwritten with significant excess eligible basis and are likely to have sufficient basis to support the allocated credits. In this context, the timing of tax credit delivery is more likely to create variances, because delays in the construction and lease-up of housing credit properties typically result in delayed delivery of housing credits. Our data suggest that such delays, while not uncommon in the early years of the program, have become less common over time.

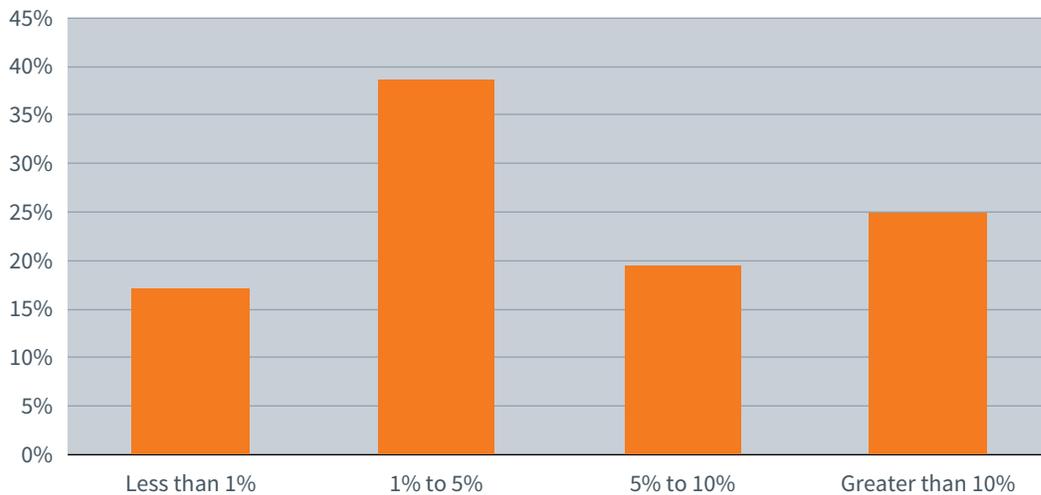
On a weighted average basis (where total credit variances for individual funds are aggregated and weighted by equity), survey respondents reported a negative 1.41% variance across all their multi-investor funding offerings closed in 2000 or later. We suspect that total credit delivery was in part caused by the change in fund property composition.

The following illustrates the incidence of negative total credit variance, by fund closing year. While approximately half of the surveyed multi-investor funds reported a shortfall in total credits, we note that only 25% of the those experienced a 10% or greater total credit delivery shortfall.

Incidence of Multi-Investor Funds Total Credit Delivery Variance



Magnitude of Multi-Investor Fund Negative Total Credit Delivery Variances



As noted, the timing of tax credit delivery during the lease-up period is more likely to create variances. Survey respondents, in general, have historically overestimated their delivery of tax credits in the first few years. Our data suggest that such delays, not uncommon in the early years of the program, have become less common over time. 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.

Property Performance

Each section of this report will present the performance and underperformance of the national housing credit property portfolio using the following operational and financial metrics:

- **Physical occupancy**, defined as the number of occupied units divided by 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 a 90% physical occupancy rate for the year.
- **Economic occupancy**, defined 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 a 90% economic occupancy for the year.
- **Debt coverage ratio (DCR)**, defined as net operating income net of 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 operating with negative per unit cash flow.
- 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 in many ways to further analyze the results, including by **project age, project size, tenancy type, credit type, development type, availability of subsidy** and **level of hard debt**.

State-level performance metrics and operating expense results along with **county-level performance and expense metrics** can be found on CohnReznick’s TCIS portal:

www.cohnreznick.com/tcis

Operating Performance

This following summarizes the operating performance data for approximately 23,000 surveyed properties (67.5% 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	22,993	15,523	67.5%
Number of Units	1,793,810	1,229,065	68.5%
Number of LIHTC Units	1,692,314	1,167,956	69.0%

The national stabilized portfolio continued to show strong operating performance in both 2015 and 2016 on a national median basis for every metric.

Overall Portfolio Performance (2015-2016)

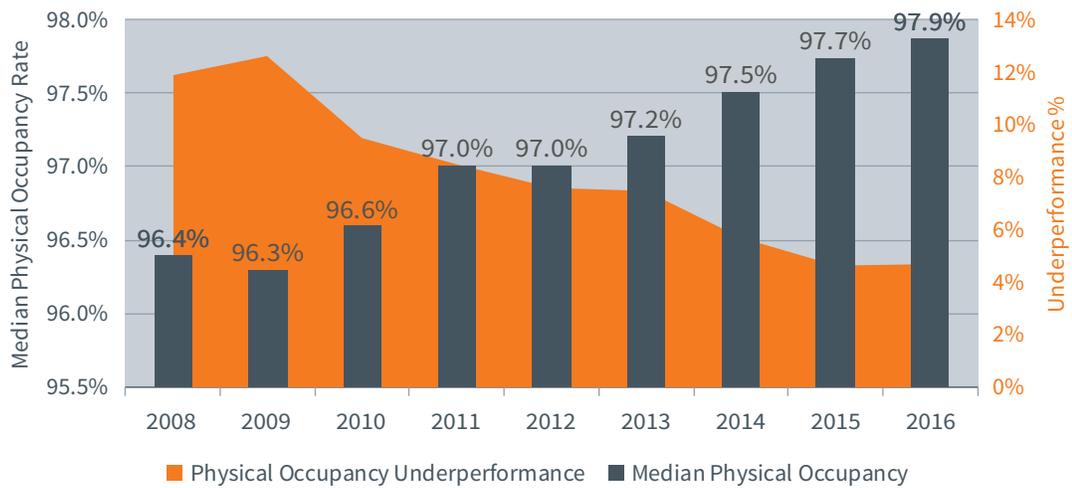
	2015		2016	
	Performance	% Underperformance	Performance	% Underperformance
Median Physical Occupancy	97.7%	4.6%	97.9%	4.7%
Median Economic Occupancy	96.9%	10.0%	97.0%	9.0%
Median Debt Coverage Ratio	1.38	14.7%	1.40	14.3%
Median Per Unit Per Annum Cash Flow	\$660	15.4%	\$688	14.9%

The national low-income housing tax credit property portfolio has consistently illustrated strong performance over the last decade. The following are a series of graphs illustrating property performance for each of the nine years since 2008, the first year CohnReznick began reporting performance data.

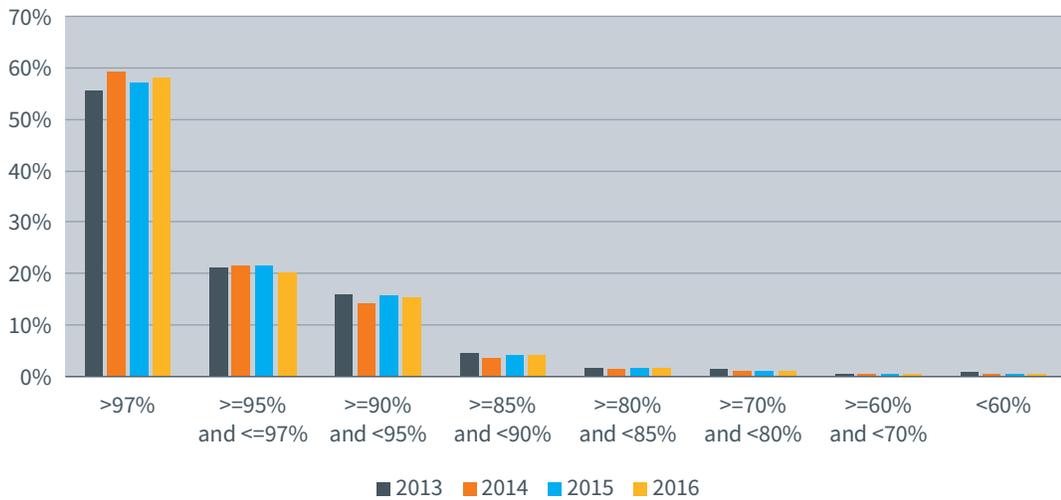
Few Empty Apartments at Housing Tax Credit Properties

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. It can be easy to become complacent about the consistently strong national median physical occupancy rates reported by housing credit properties, but the corresponding underperformance statistic speaks volumes. Physical occupancy underperformance has steadily decreased over the same period, falling from 11.9% in 2008 to only 4.7% in 2016. This means that upwards of 95% of all the surveyed properties in our dataset reported occupancy greater than 90% in 2016.

National Physical Occupancy Trend: 2008–2016



National Distribution of Physical Occupancy: 2013–2016



The high physical occupancy rate for units financed with housing tax credits has confirmed, 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.

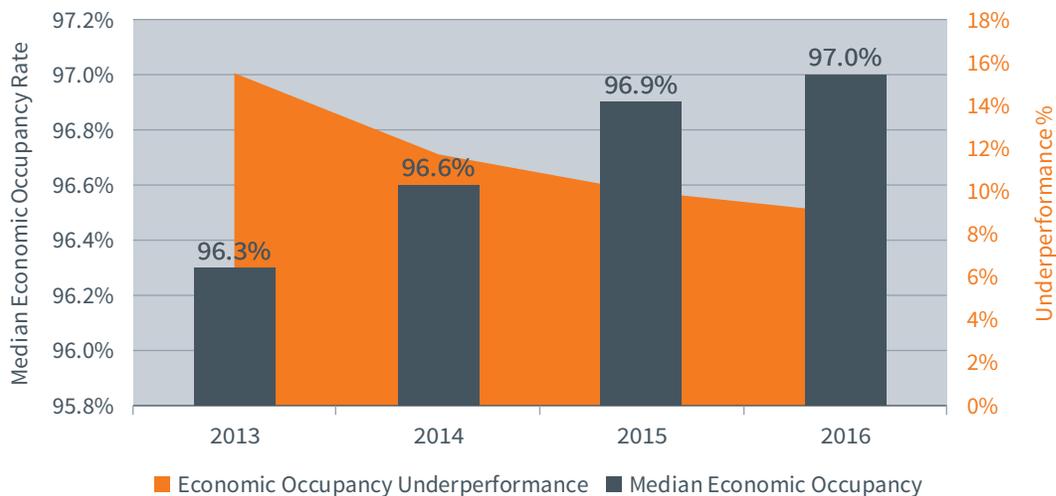
Economic Occupancy Also Strong

Properties financed with housing tax credits also perform well in terms of the rent collected compared to the rent potential. The income from an apartment property depends on more than simply whether its apartments 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 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 have continued to narrow since 2013. Since the economic vacancy rate includes the impact of the periodic turnover of units, the ability to re-lease such units, and losses from rent skips and/or collection problems, the narrowing spread suggests less economic losses from turnover at the national level.

National Economic Occupancy Trend: 2013–2016



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 associate with rent skips.

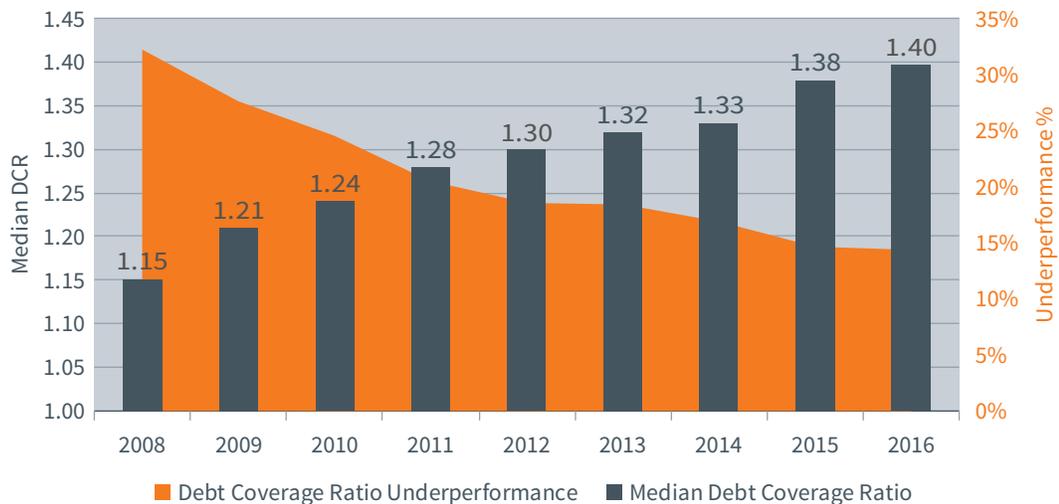
This high rate of economic occupancy supports strong performance for these properties in terms of debt service ratios and cash flow.

Tax Credit Housing Reported Improved DCR

Surveyed properties reported a steady increase in median DCR between 2008 and 2016. National median DCR historically hovered around 1.15 between 2000 and 2008, increased to 1.21 in 2009 and has taken off since then. As a result, the national median DCR was 1.40 in 2016, representing another high-water mark for the asset class.

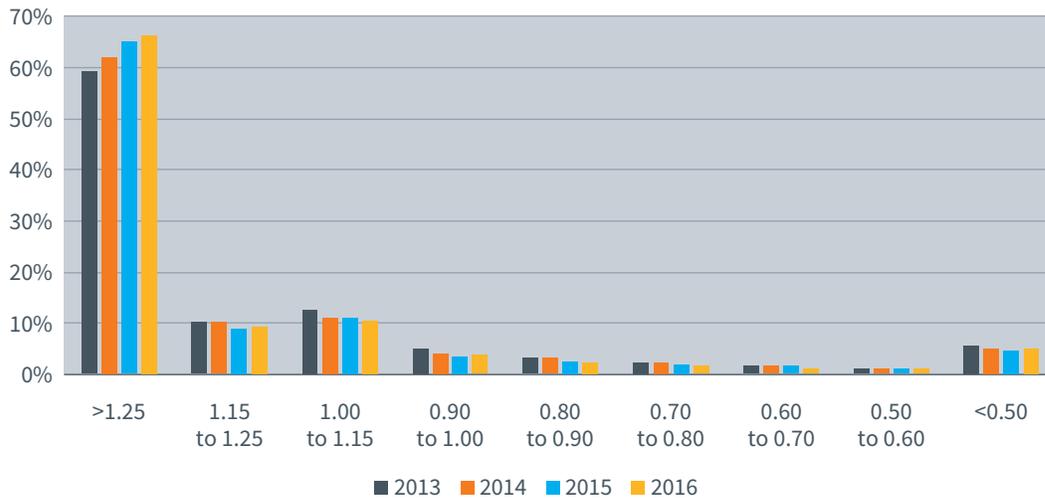
This analysis includes only properties with loans that require regular payments. It does not include properties that carry no debt or that are financed with only “soft” debt. Soft debt refers to mortgage loans made by government agencies or other lenders that require current payments only to the extent 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 DCR Trend: 2008–2016



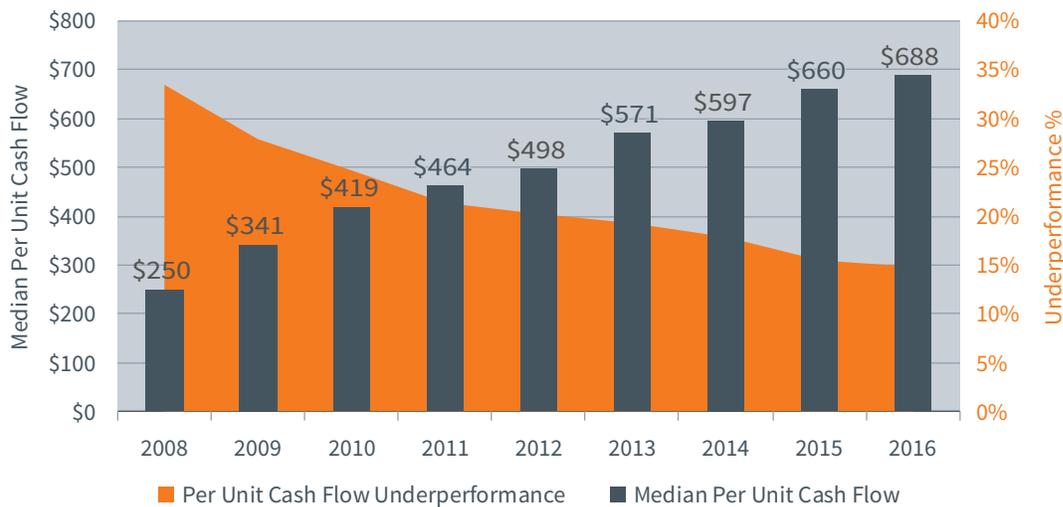
DCR underperformance, properties with DCR’s of less than 1.00, has declined from 32.2% in 2008 to just 14.3% in 2016. Perhaps even more remarkable than the universe of properties operating below breakeven being halved since 2008, the magnitude of DCR underperformance has also improved. The following graph illustrates that the incidence of properties with less than 0.80 DCR has decreased from 10.2% to 8.4% over the same time-period, and properties with less than 0.50 DCR has also decreased from 5.4% to 4.9%. The bottom line is that far fewer properties in the national portfolio in 2016 have issues paying their mortgage, and those that can’t, are operating with far smaller deficits than in 2008.

National Distribution of DCR: 2013–2016



National median per unit cash flow increased in parallel fashion with DCR. As recently as 2008, median cash flow per unit among surveyed housing credit properties was \$250, which has more than doubled since, reaching \$688 per unit in 2016.

National Per Unit Cash Flow Trend: 2008–2016



While per unit cash flow has significantly increased, the upward trend needs to be put into context. Because the median tax credit project was comprised of 78 units in 2016, the total sum of positive cash flow per property—also on a median basis—is less than \$55,000 per year.

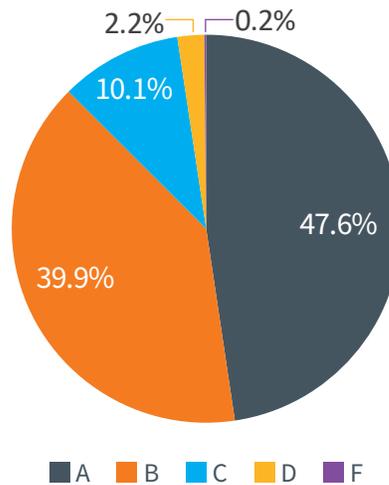
Further, any excess cash flow is typically run through the cash flow waterfall specified under the property’s partnership agreement to pay deferred developer fees, asset management fees, and/or interest on soft loans rather than distribute to the partners.

Only 12.5% of Properties on the Watch List

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 the Affordable Housing Investors’ Council (AHIC) as a baseline for measuring underperformance.

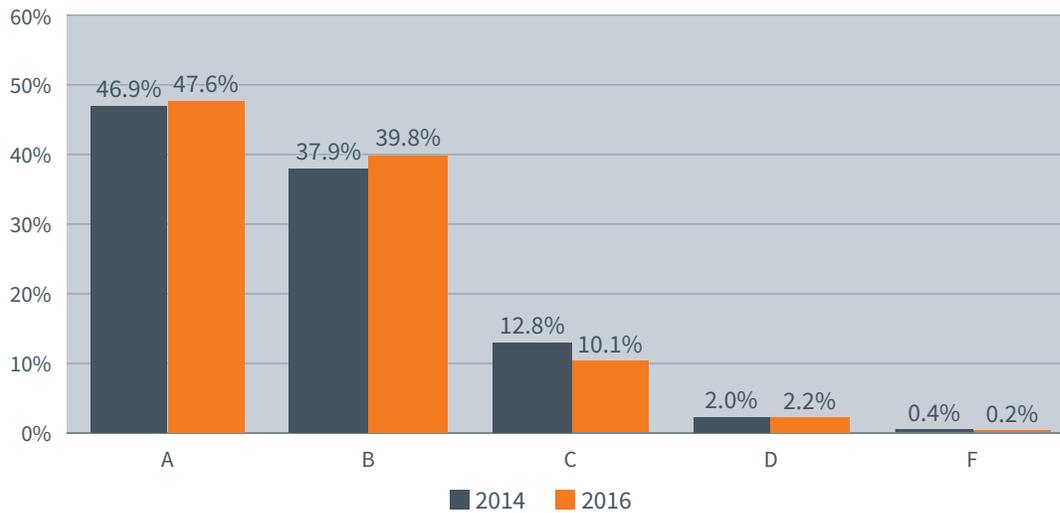
Risk ratings are assigned to properties based on this criterion using an A through F grading scale. Properties rated “C” or worse are considered watch list properties. The following graph demonstrates the distribution of properties in the national portfolio by risk rating.

Distribution by 2016 Risk Rating



Across the national portfolio, roughly 12.5% of properties were on the watch list as of year-end 2016, which is down significantly from previous years. The following graph illustrates the improvement from the 2014 results to the 2016 watch list distribution of the national portfolio.

Distribution by Risk Rating (2014 vs. 2016)

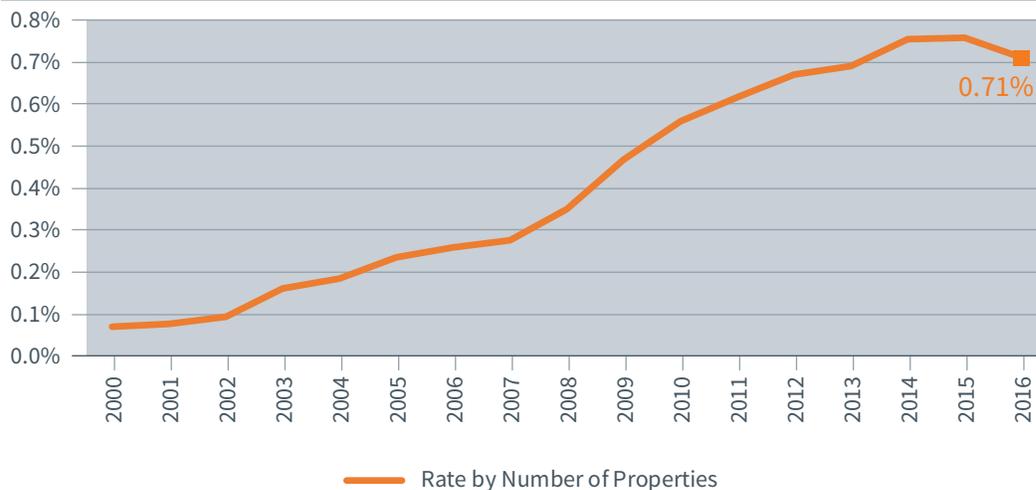


Taking the grading analogy further, CohnReznick tied traditional grade point average scoring to the risk rating concept to arrive at a Property Performance Average (PPA). Properties rated “A” are worth 4.0, “B” properties are worth 3.0, and so on. Using this methodology, the national housing credit portfolio reported, on an equity weighted average basis, a 3.4 PPA. Using the CohnReznick PPA grading system, the housing credit portfolio has achieved a “B+” average nationwide.

Cumulative Foreclosure Rate Far Below 1%

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 0.71% cumulative foreclosure rate, measured by the number of foreclosed properties divided by the total number of properties in respondents’ portfolios.

Cumulative Foreclosure Rate



Properties lost to foreclosure reported large and sustained cash flow deficits. These properties typically suffered low occupancy levels, poor sponsorship, or defective construction, among other issues.

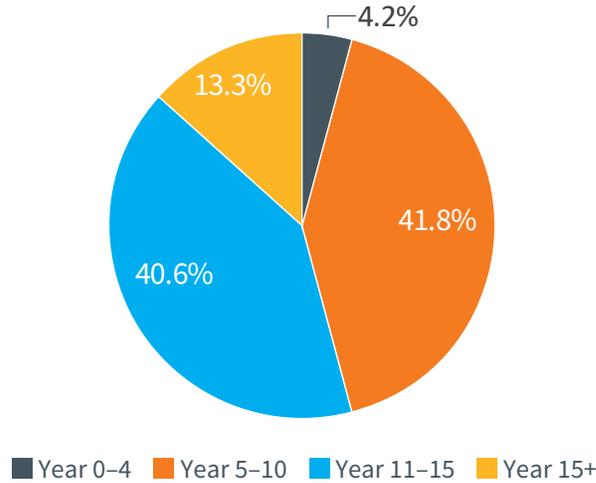
A remarkably low number of housing tax credit properties fall victim to foreclosure in any given year and through the program's history. That is largely because relatively few housing tax credit properties suffer from severe underperformance. In many cases, underperforming properties can fund their operating 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 would, in most cases, trigger the "recapture" of the project's tax credits. During such a recapture event, the owner loses any projected future housing tax credits from the foreclosed property. The owner is also forced to repay one-third of the tax credit previously claimed from the foreclosed property. Additional interest and penalties may apply, which 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 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.

The recession certainly put pressure on housing tax credit properties however, and this is reflected in the sample of foreclosures in our dataset. Of the reported incidences of foreclosure, 77% were foreclosed during the period 2008–2016; 34% were foreclosed between 2012 and 2016. The timing of foreclosure is also the result of housing credit syndicators' effort to minimize the financial impact to investors. This is evidenced by the fact that, on average, a foreclosed property was in its 10th year of credit delivery period when lost to foreclosure.

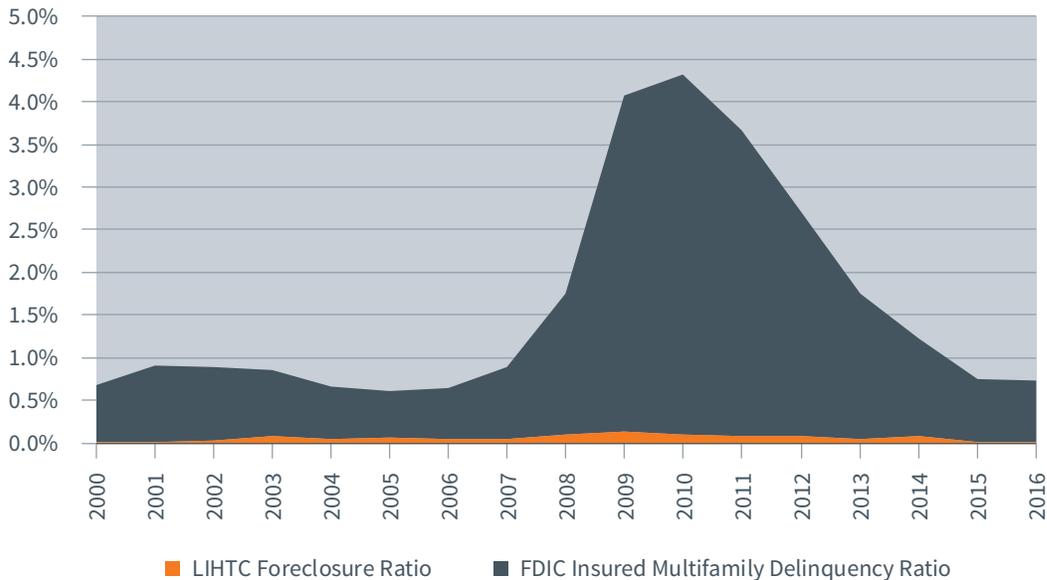
Foreclosures by Year



While housing tax credit properties have a cumulative foreclosure rate of just 0.71%, 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 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 of America.

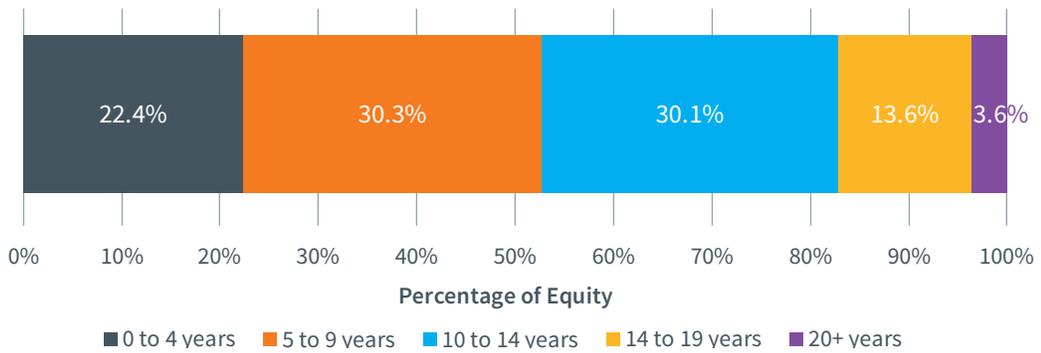
Annual LIHTC Foreclosure Rate vs. Conventional Multifamily Delinquency Rate



Performance by Property Age

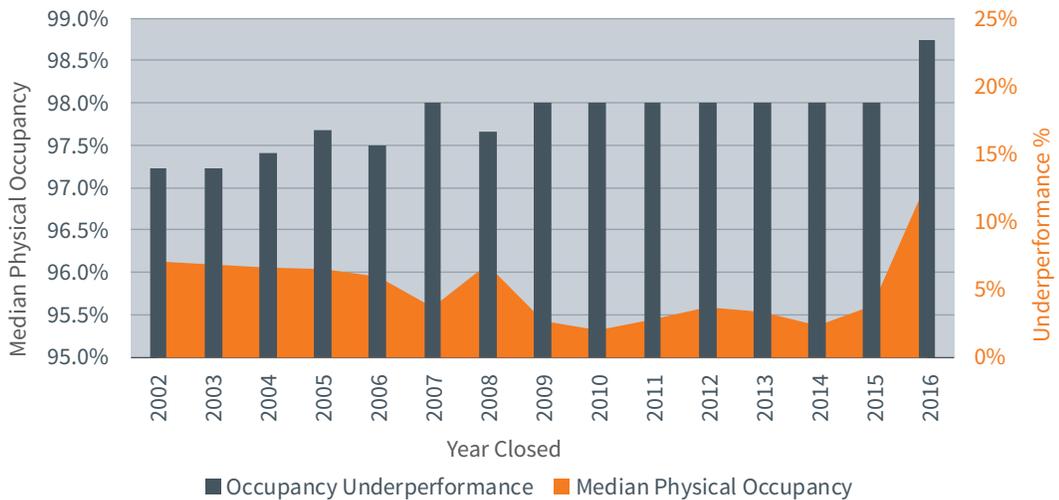
Most properties in the national dataset were between five and 14 years old. Ninety-six percent of the properties in the portfolio were 20 years or younger. While all properties were included in the national median calculations, we focused our analysis on those within their tax credit compliance period.

Portfolio Composition: Equity by Property Age (%)

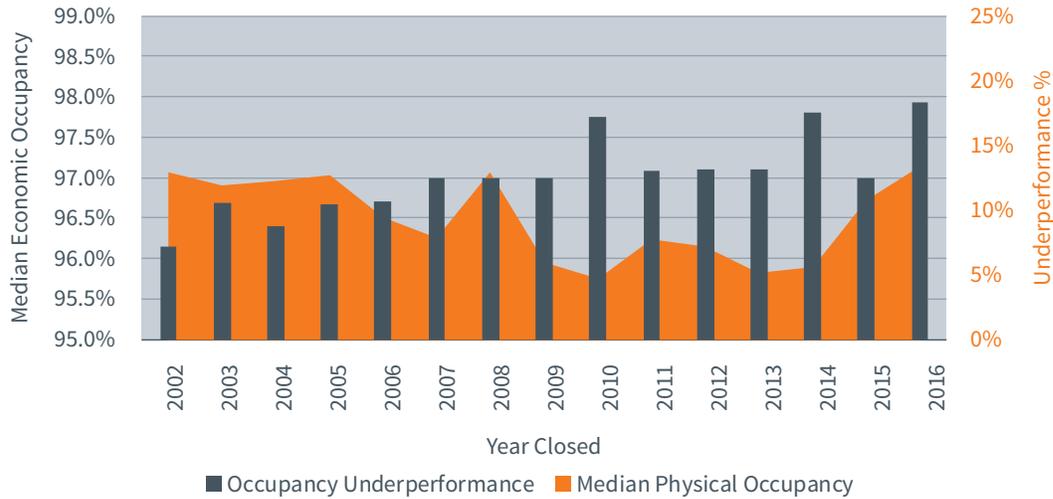


While median physical occupancy rates generally tend to decrease over time as properties in the portfolio age, economic occupancy rates are more erratic. As the graphs below illustrate, occupancy underperformance is most volatile in the early and later years of a property's life. This is likely because deferred maintenance in later years contribute to additional turnover and vacancy losses. As the graphs illustrate, economic occupancy underperformance is more prevalent than physical occupancy underperformance in the post-credit period years.

Physical Occupancy by Property Age

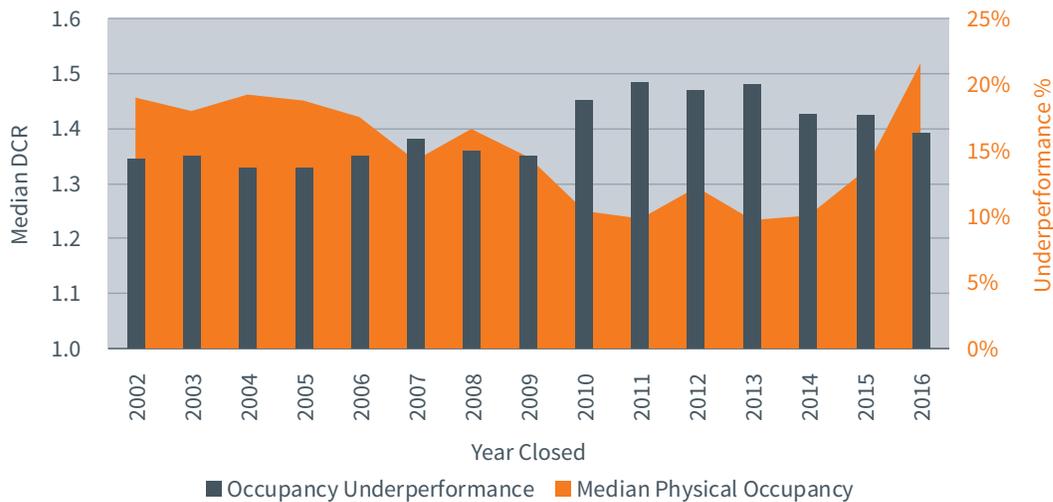


Economic Occupancy by Property Age

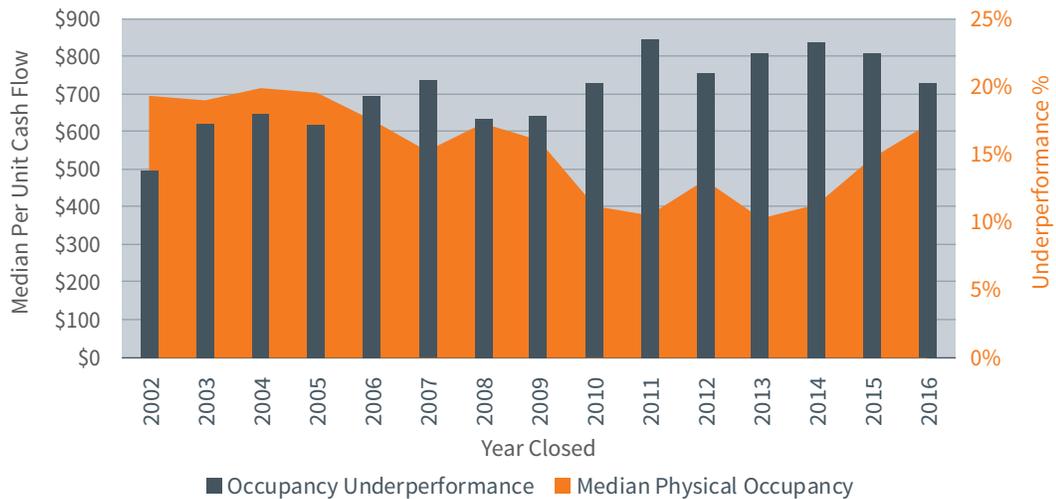


Like occupancy, median DCR trended downward following the credit period, but hovered in a favorable band between 1.35 and 1.50 over the 15-year lookback period shown in the graph below. At no point does the data show median DCR approaching breakeven. The DCR trend is expected as property operations normalizes and achieves steady occupancy, underperformance gradually decreases, and as a property ages, and newer more attractive housing options become available, underperformance increases. Per unit cash flow underperformance followed a similar trend.

Debt Coverage Ratio by Property Age



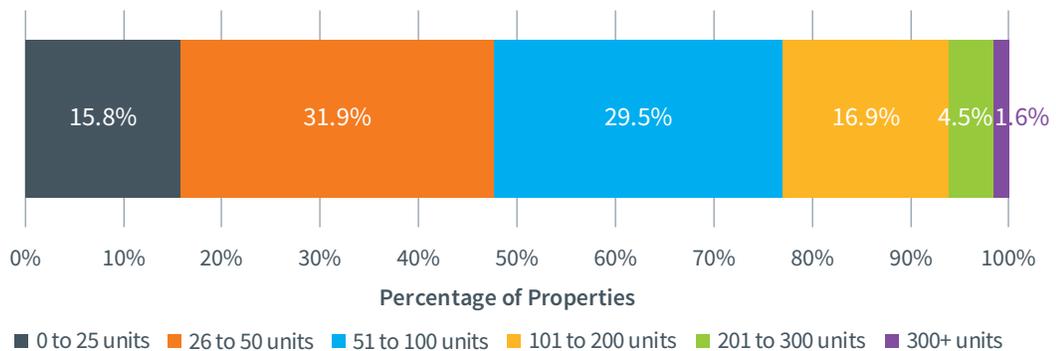
Per Unit Cash Flow by Property Age



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 comprised of properties 100 units or less; the average property contained 78 units.

Portfolio Composition: Property Count by Property Size (%)



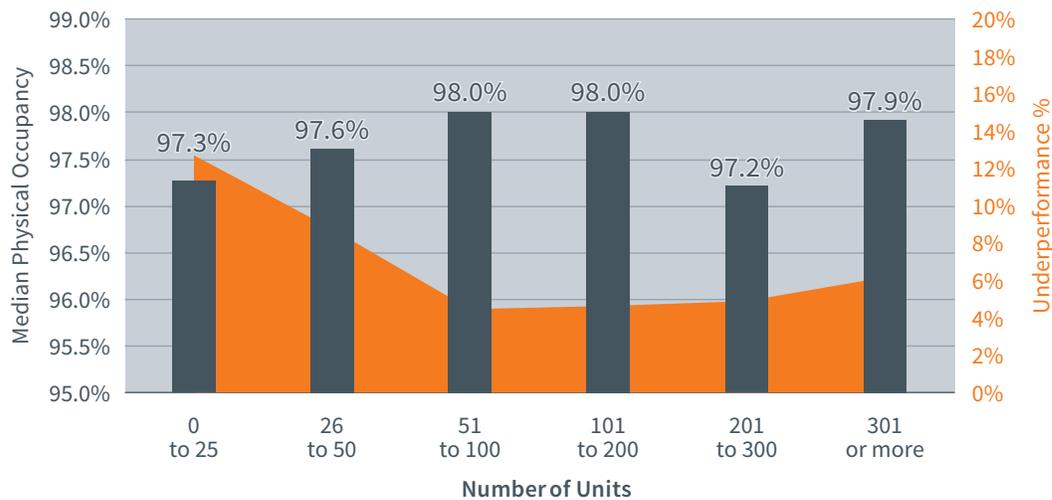
The distribution of median physical occupancy rates trend upward from the smallest properties to a “sweet-spot” of properties containing between 51 and 200 units, which exhibited the highest median occupancy rates or 98.0%. Properties containing between 201 and 300 units reported the lowest nonetheless strong median physical occupancy rate at 97.2%. Additionally, we found that 16.2% of the projects (measured by net equity) with 200+ units were mixed-income developments that consist of at least 15% market rate units.

The smallest properties in the surveyed portfolio (properties with 25 units or less) reported less favorable physical occupancy relative to other property sizes, which is not surprising given that a few vacant units at small projects can easily drop occupancy below the 90% underperformance threshold.

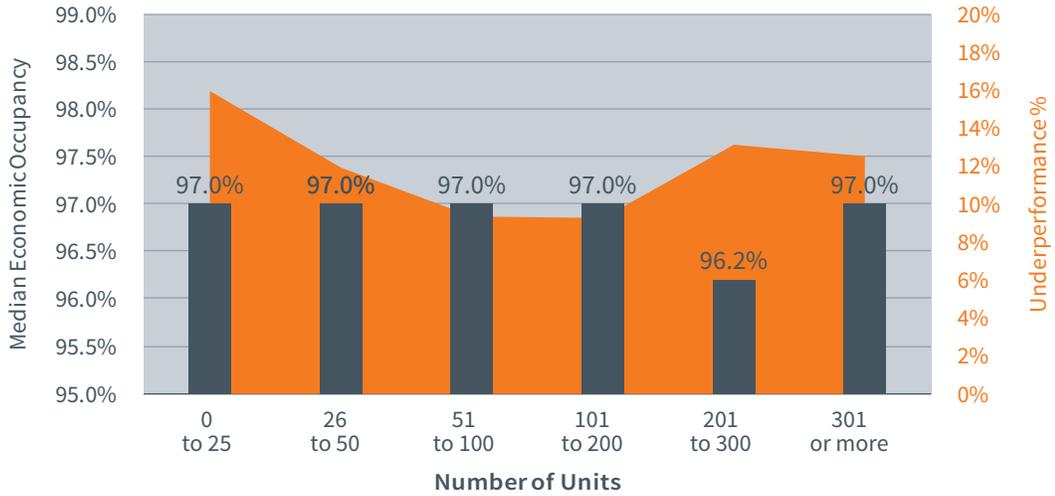
Individual categories' variation aside, all physical and economic occupancy rates reported were uniformly favorable, all greater than 96.2%.

Economic occupancy underperformance was generally more pronounced among properties with fewer units; a similar trend was observed with respect to physical occupancy underperformance. For most calculations of underperformance in this report we measured as a percentage of net equity. However, since larger 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

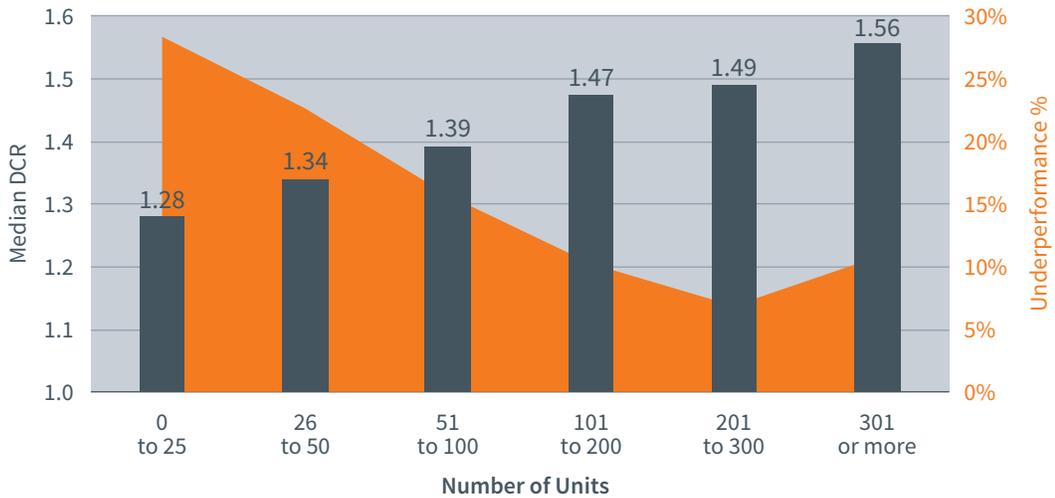


Economic Occupancy by Property Size

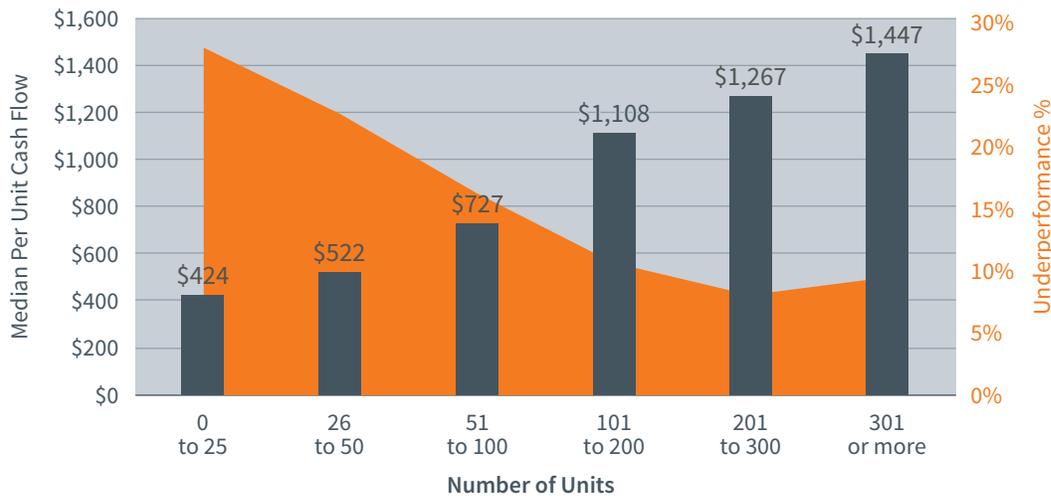


Consistent with prior years' results, both median DCR and per unit cash flow trend upward as the number of units increases. DCR and cash flow underperformance also largely decreases as properties increase in size.

DCR by Property Size



Per Unit Cash Flow by Property Size

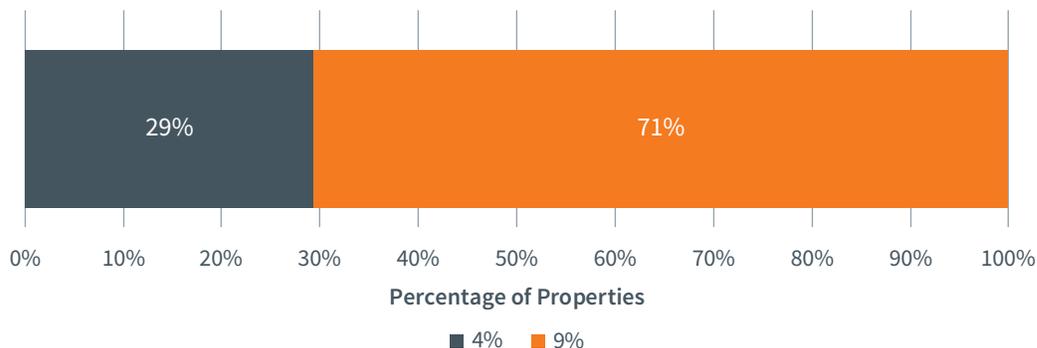


Properties with less units must distribute their fixed costs over a more limited base of apartment units relative to their larger peers, which leads to lower DCR and per unit cash flow. Still, median 2016 DCR across all project sizes was well above 1.20 and 2016 per unit cash flow ranged from \$424 to \$1,447.

Performance by Credit Type

There are two types of low-income housing tax credits under the Internal Revenue Code § 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, the 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.

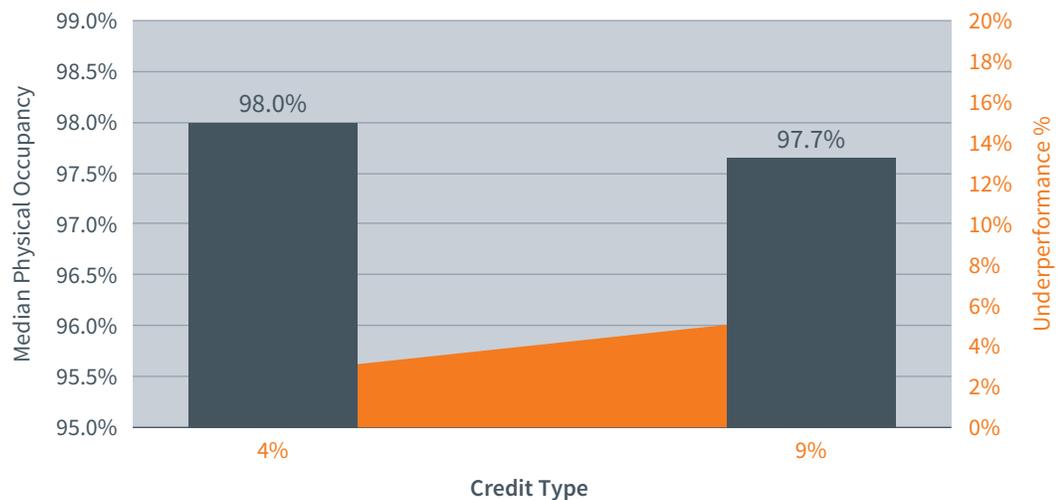
Portfolio Composition: Property Count by Credit Type (%)



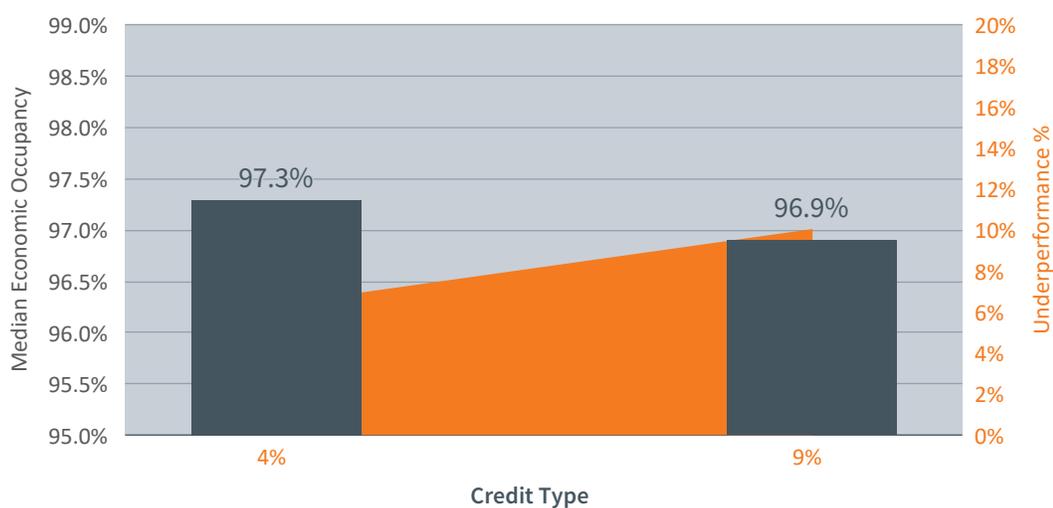
As a general matter, 9% credit projects are more heavily financed by investor equity and thus have a more modest level of hard debt service. Tax-exempt bond projects that qualify for 4% credits generate significantly lower levels of tax credit equity and thus require higher debt levels (albeit at lower tax-exempt interest rates). It is not surprising then the amount of equity associated with 9% tax credit properties in the portfolio outweighs the 4% credit equity.

Notably, 4% and 9% properties account for a nearly 50/50 split of the total units in our national dataset. This is because the typical 9% property in the portfolio averaged 60 units, while the typical 4% property averaged 129 units.

Physical Occupancy by Credit Type

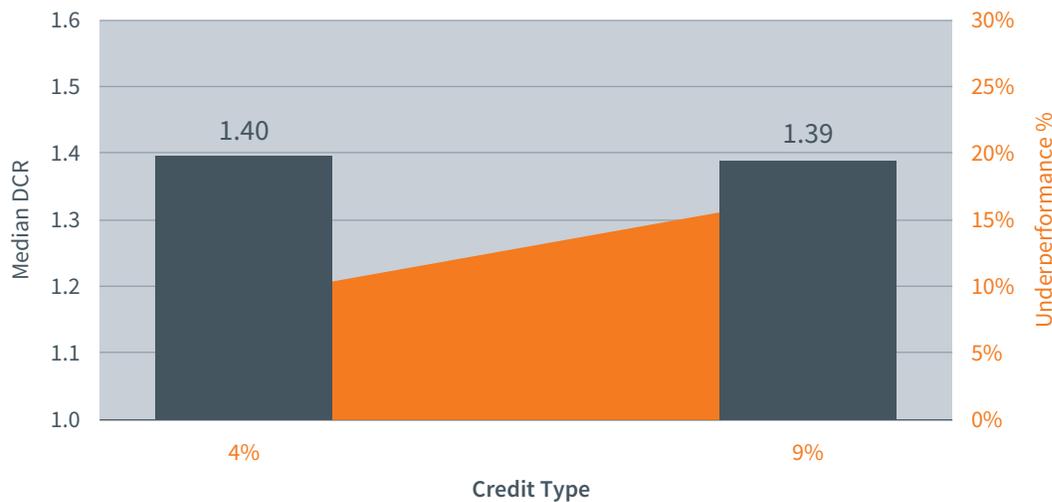


Economic Occupancy by Credit Type

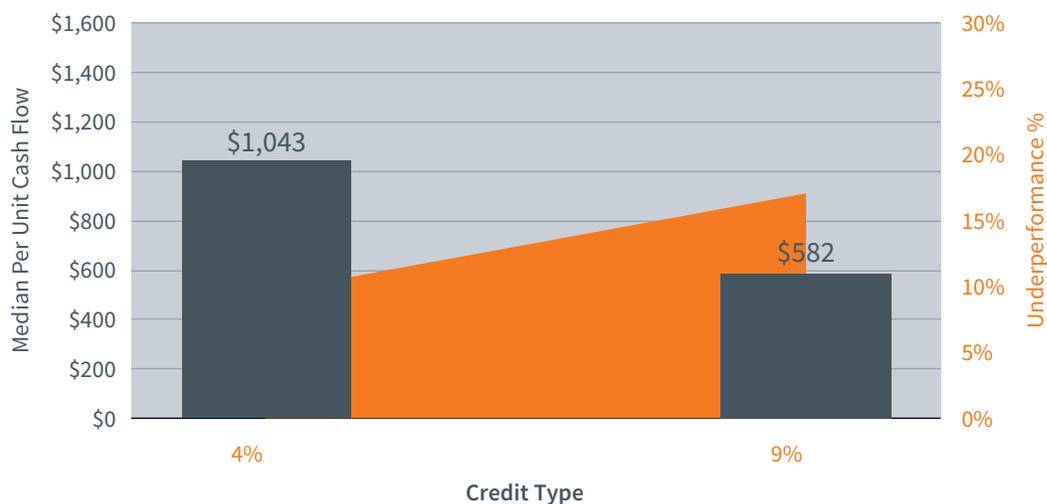


In the national dataset, 4% properties marginally outperformed their 9% counterparts from a physical and economic occupancy perspective. All occupancy rates however were very favorable and at high water marks. Occupancy underperformance is correspondingly higher among the 9% cohort, but once again, at lower levels that ever previously recorded.

DCR by Credit Type



Per Unit Cash Flow by Credit Type



Even though 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 since 2008. Indeed, the spread between the two categories' median per unit cash flow has grown from roughly \$100 in 2008 to \$460 in 2016.

Per Unit Cash Flow by Credit Type: 2008–2016

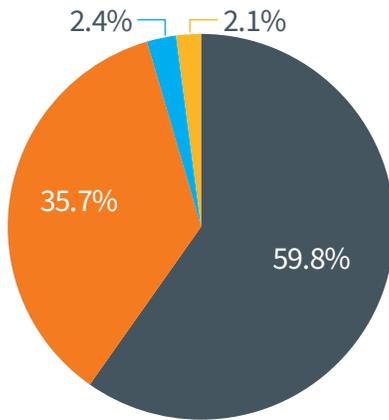


We attribute this in large part to the fact that the majority of 4% housing credit properties also benefit from some form of operational subsidy or rental assistance, thus increasing the revenue potential. In the national portfolio 52% of 4% properties reported some form of subsidy while only 29% of 9% properties were subsidized. Also, as noted 4% properties are generally larger and thus can allocate their fixed costs over a broader base of units which can create higher levels of per unit cash flow.

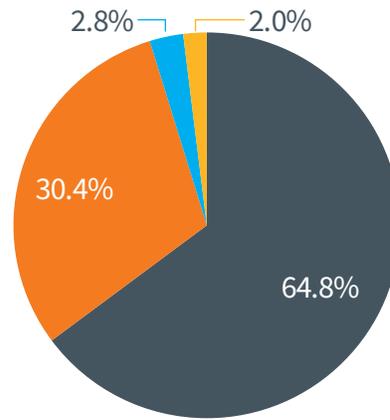
Performance by Development Type

The national portfolio of properties 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, and rehabilitated properties accounted for 33.2% of net equity surveyed (2.8% of which were rehabilitations of historic structures). The remaining 2% of the portfolio were mixed or unspecified development types.

Portfolio Composition: Development Type by Number of Properties



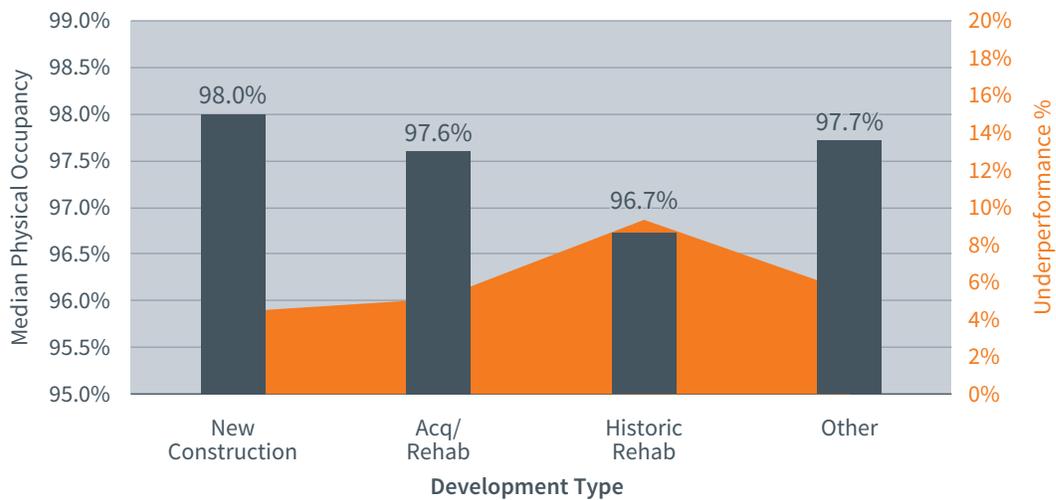
Equity



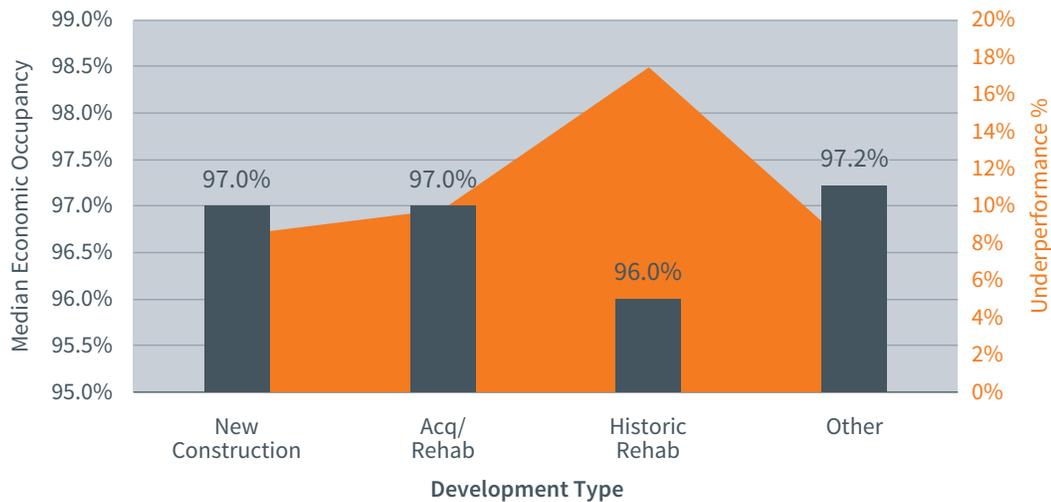
■ New Construction ■ Acquisition Rehab ■ Historic Rehab ■ Other

New construction properties reported the highest median physical occupancy among all other development types at 98%, a high-water mark since CohnReznick began collecting data. Other construction types and acquisition rehabs followed close behind new construction properties at 97.7% and 97.6% median physical occupancy respectively.

Physical Occupancy by Development Type

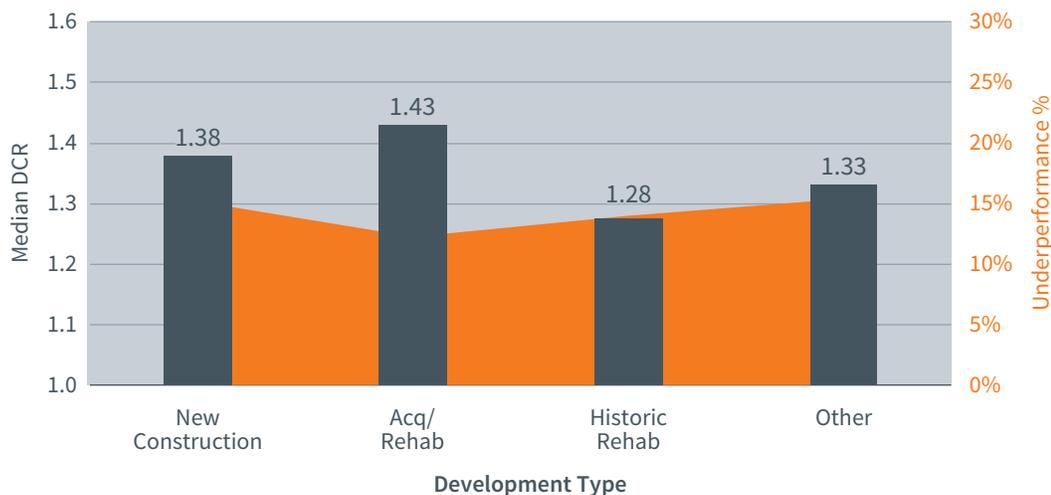


Economic Occupancy by Development Type

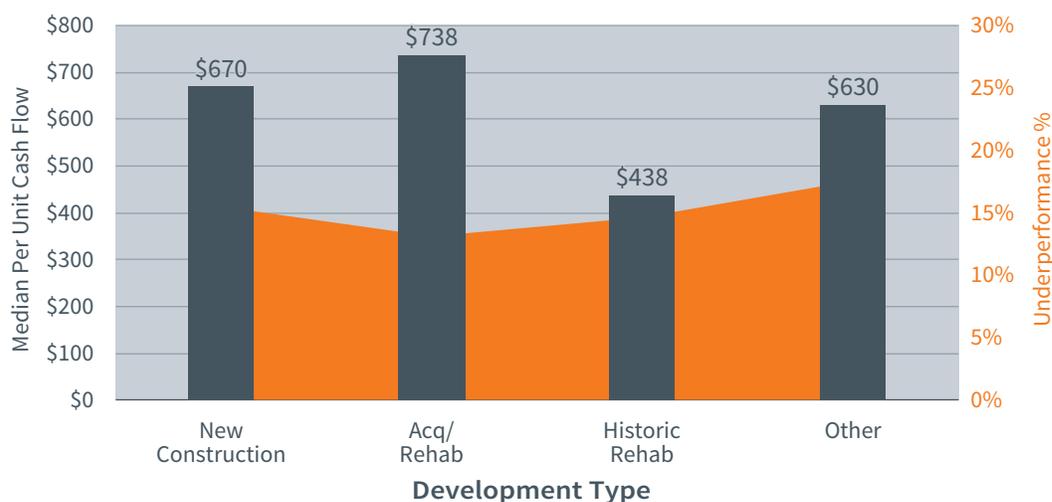


The data suggest that historic rehabs tend to underperform from an occupancy perspective relative to other development types. Historic rehab properties in our surveyed portfolio were 96.7% physically occupied and roughly 96% economically occupied, both of which were below the national median levels. 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.

DCR 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 \$738 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 table illustrates the median per unit operating expenses by development type.

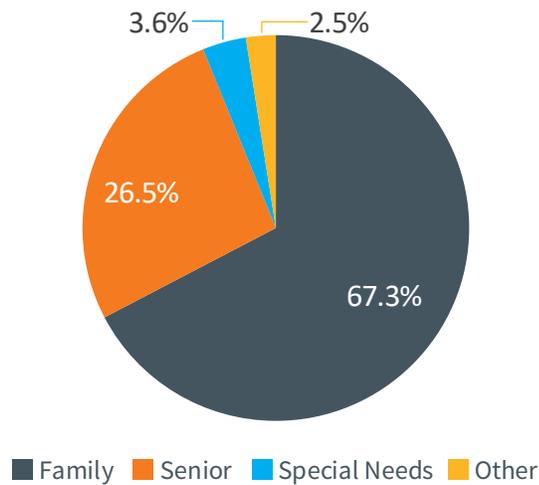
Median 2016 Per Unit Operating Expenses by Development Type

	Admin.	Salary	R&M	Mgmt. Fee	Insurance	Utilities	Property Tax
New Construction	\$607	\$1,122	\$1,035	\$485	\$342	\$743	\$462
Acq/Rehab	\$617	\$1,280	\$1,142	\$564	\$326	\$877	\$416
Historic Rehab	\$759	\$1,172	\$1,370	\$473	\$400	\$1,033	\$555

Performance by Tenancy Type

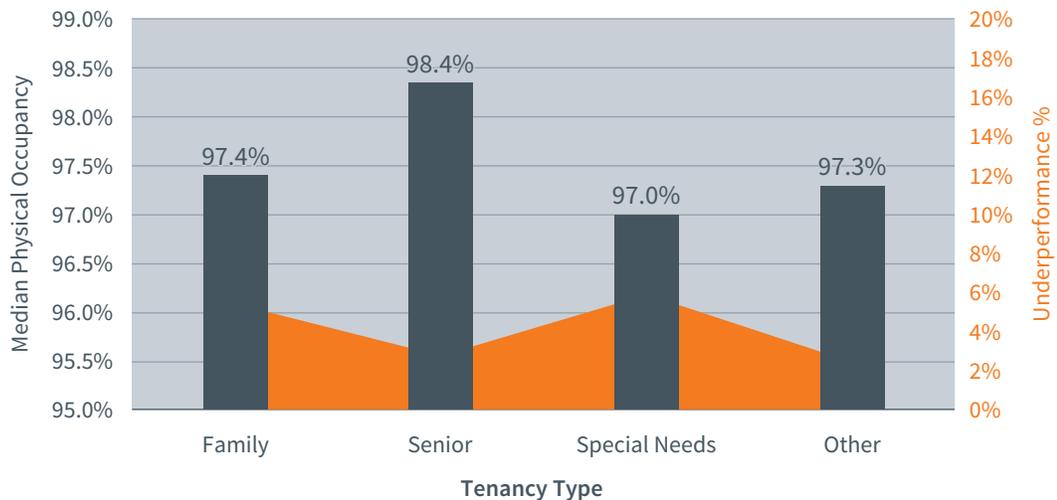
The national portfolio of properties fall into one of the following tenancy types: family, senior, special needs and other.

Portfolio Composition: Property Count by Tenancy Type (%)

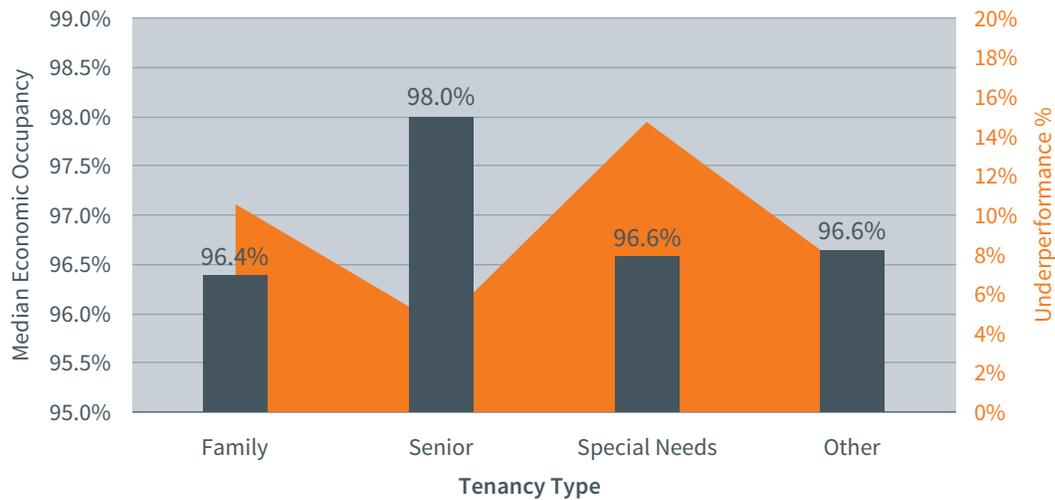


Projects targeting family households, representing approximately 70% of the surveyed stabilized population, performed marginally below the national median physical and economic occupancy levels in both 2013 and 2014. Consistent with prior studies, properties with senior-restricted tenancy, representative of approximately 27% of the portfolio, reported the strongest physical and economic occupancy rates. Although, both the median physical and economic occupancy rates ranged from 96.4% to 98.4% for all tenancy types.

Physical Occupancy by Tenancy Type

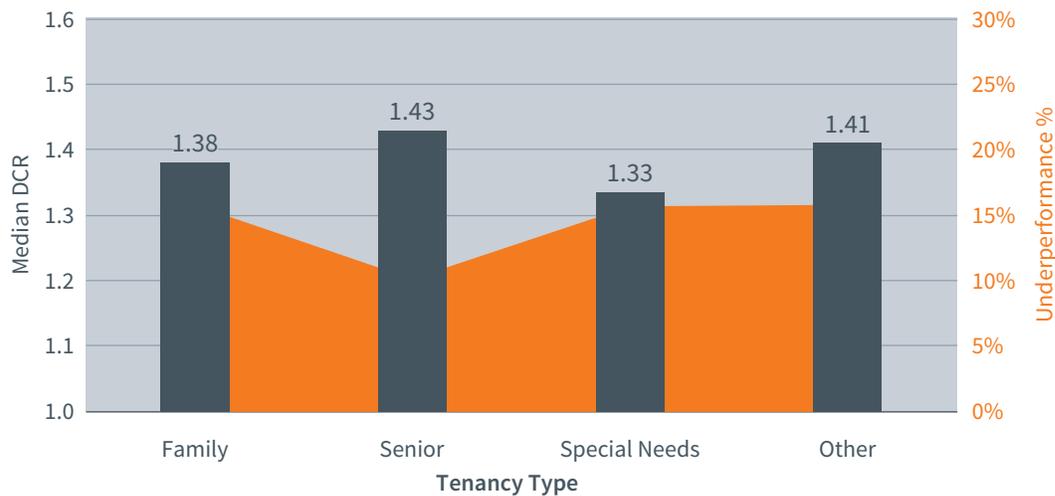


Economic Occupancy by Tenancy Type

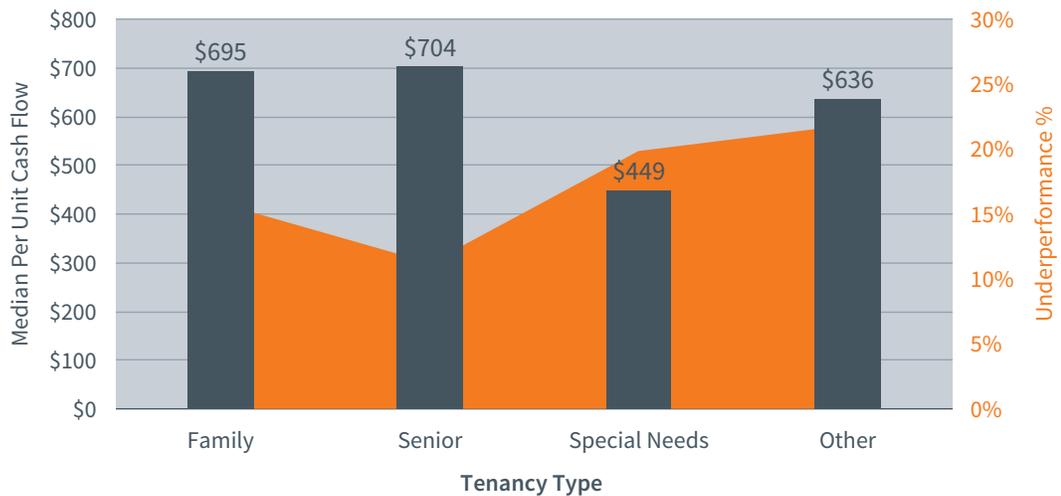


Aside from special needs properties, which exhibited slightly higher incidence of occupancy underperformance, all other tenancy types generally reported low levels of physical and economic occupancy underperformance.

DCR 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 tenancy types, hovering around 16%, aside from once again, senior properties, which reported just over 10% DCR underperformance.

The following table illustrates the median 2016 operating expenses by tenancy type. Special needs properties exhibited significantly higher admin, salary, R&M, and utility expense, 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.

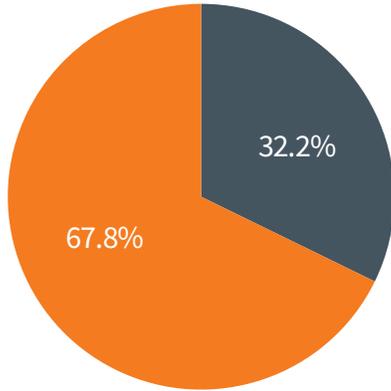
Median 2016 Per Unit Operating Expenses by Tenancy Type

	Admin	Salary	R&M	Mgmt. Fee	Insurance	Utilities	Tax
Family	\$610	\$1,182	\$1,118	\$518	\$345	\$802	\$458
Senior	\$610	\$1,128	\$950	\$505	\$308	\$736	\$427
Special Needs	\$814	\$1,510	\$1,543	\$540	\$377	\$1,161	\$230

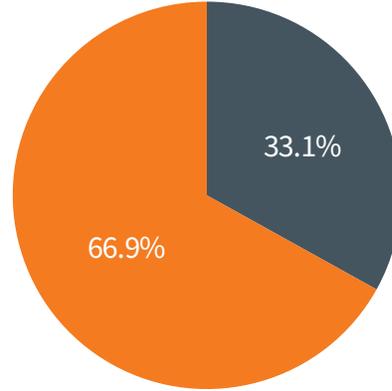
Performance by Availability of Rental Assistance

Properties that are considered subsidized for purposes of this report may have all or a portion of their units covered under a subsidy contract. Both as a percentage of number of total units, and as a percentage of total equity, subsidized properties account for roughly one-third of the overall portfolio.

Portfolio Composition:
Subsidy by Number of Units



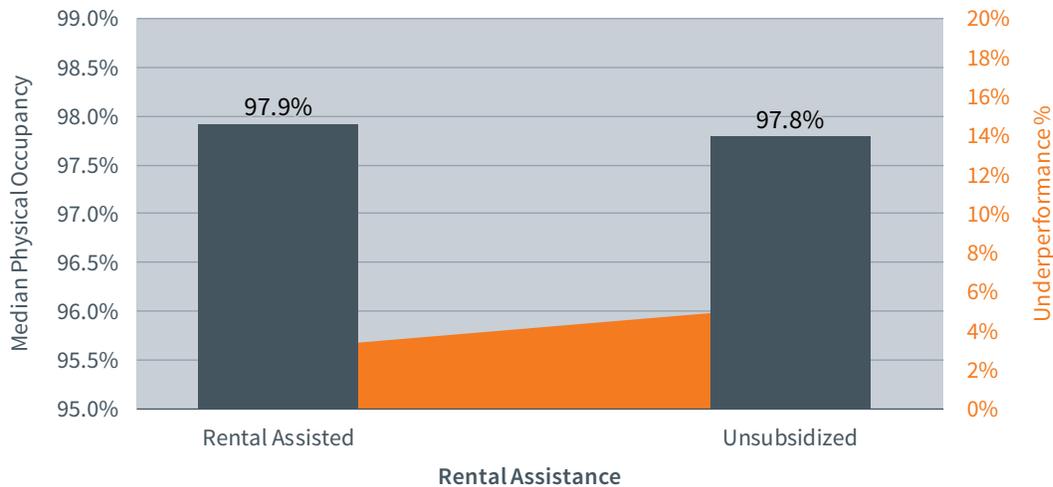
Subsidy by Equity



■ Rental Assisted ■ Unsubsidized

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. 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.

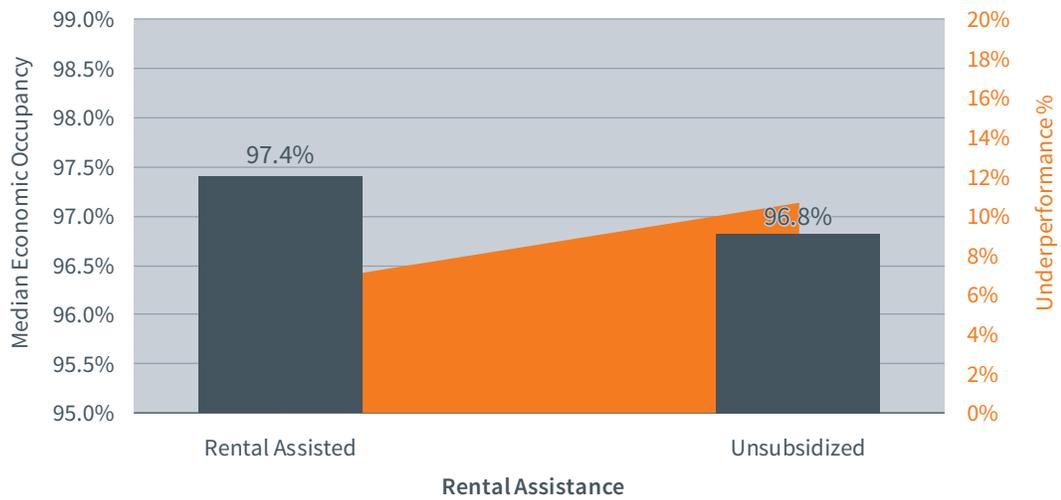
Physical Occupancy by Rental Assistance



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.

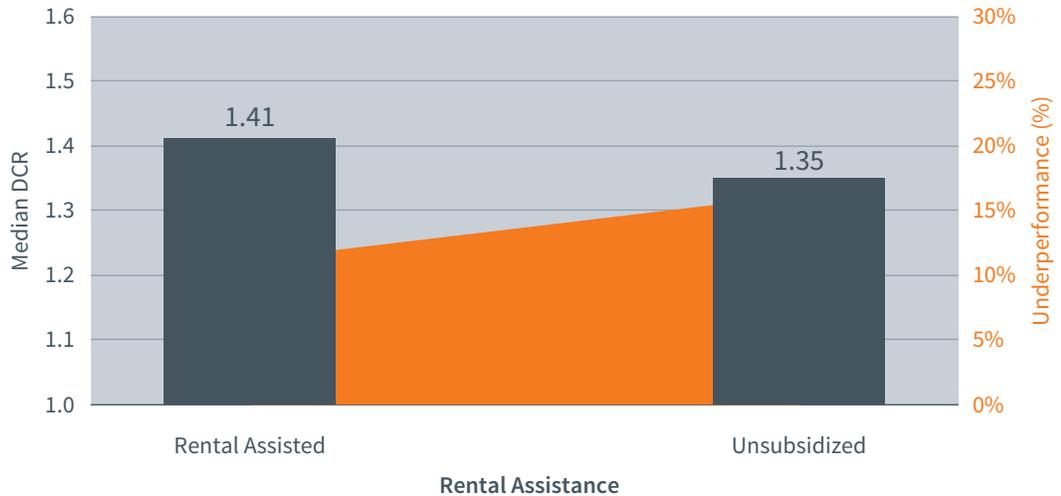
In the case of subsidized projects, tenants contribute no more than 30% of their adjusted gross income toward rent and utilities, with the balance covered by the rental assistance contracts. Provided rental assistance is in place, tenants can theoretically earn zero income and rely exclusively on the subsidy for rent payments. Economic occupancy among this cohort exceeds non-subsidized properties by 60 basis points on a median basis as subsidized properties tend to have lower turnovers and lengthy waiting lists which can be used to quickly fill any turnover units.

Economic Occupancy by Rental Assistance

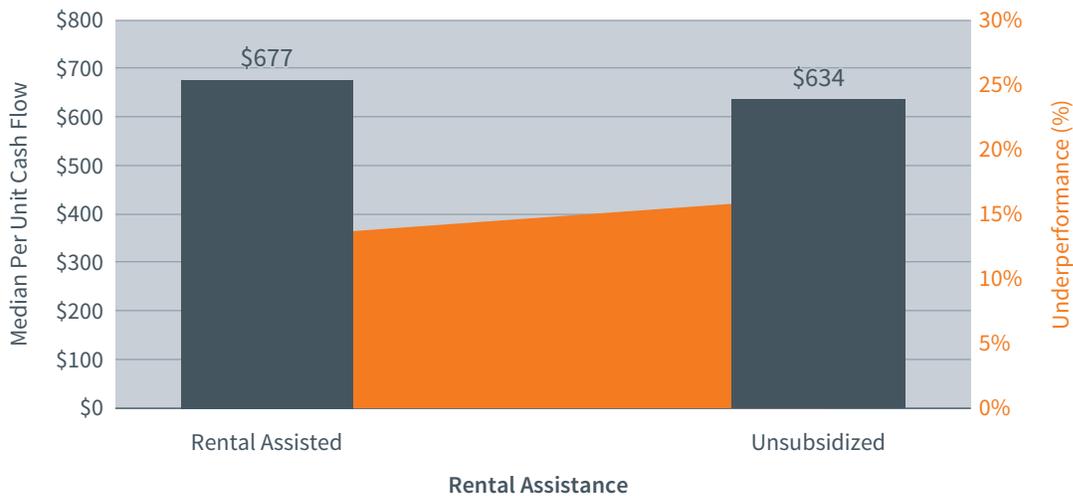


Similarly, it is logical that properties with rental assistance would report stronger DCR and higher per unit cash flow compared to non-subsidized properties due to that subsidy rents in many cases exceed the tax credit programmatic rents. Nonetheless, properties without rental assistance still exhibited strong median DCR of 1.35 and per unit cash flow of \$634 in 2016.

DCR by Rental Assistance



Per Unit Cash Flow by Rental Assistance

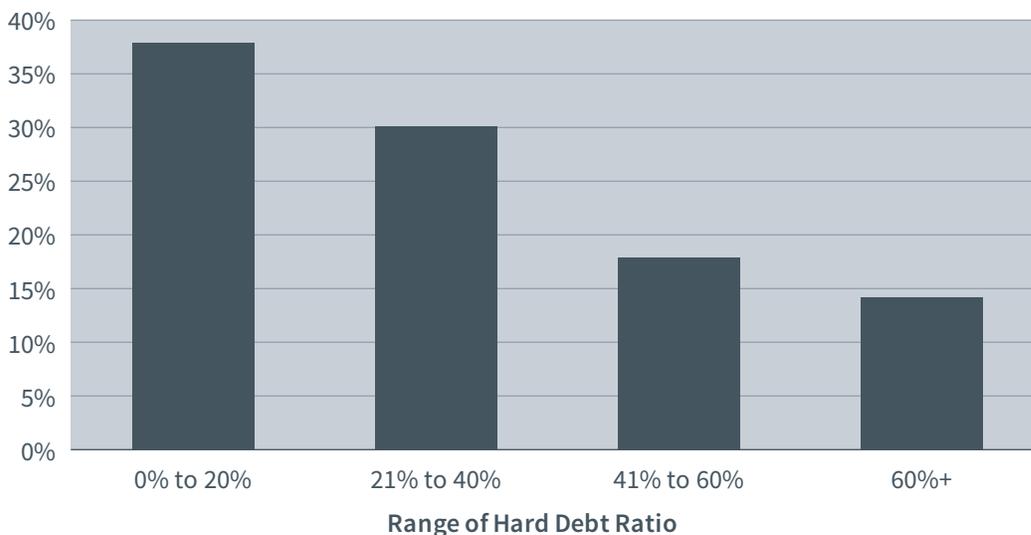


Performance by Hard Debt Leverage Ratio

Periodic pricing shocks aside, as housing tax credit prices have generally trended upward since the recession, the median hard debt ratio 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.

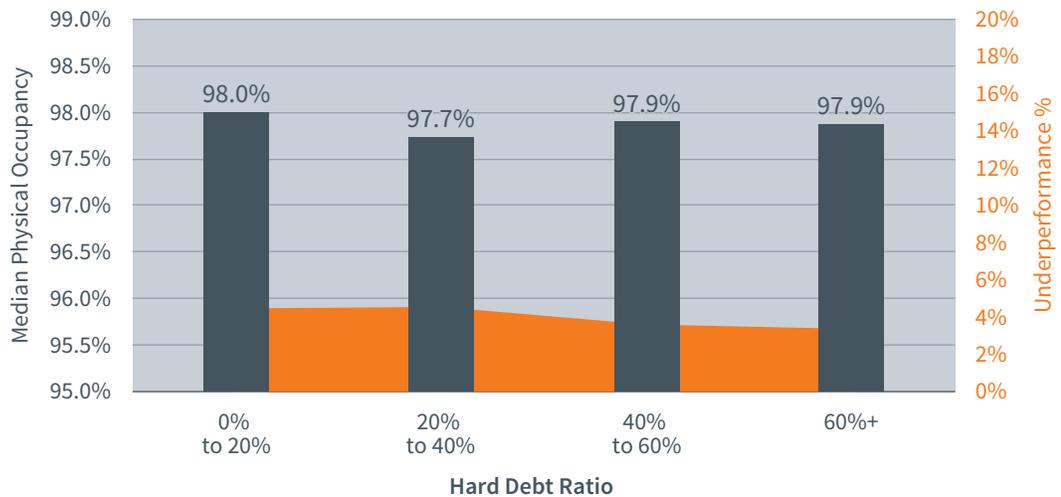
Recent trends notwithstanding, most of the overall portfolio reported hard debt ratios of 40% or less. Hard debt ratio measures the portion of a project's total developments costs that are financed with hard debt, i.e. those requiring a fixed amount of periodic debt service payments.

Portfolio Composition: Property Count by Hard Debt Ratio (%)

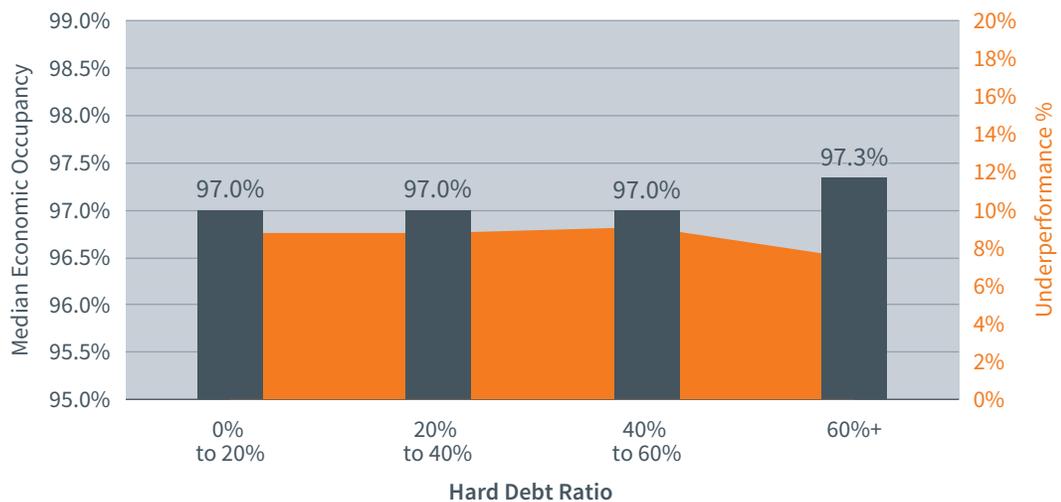


For all five hard debt ratio ranges, physical occupancy rates were clustered in tight bands between 97.7% and 98% and between 97% and 97.3% for economic occupancy. The data suggest that a property's hard debt ratio has little bearing on its occupancy performance.

Physical Occupancy by Hard Debt Ratio

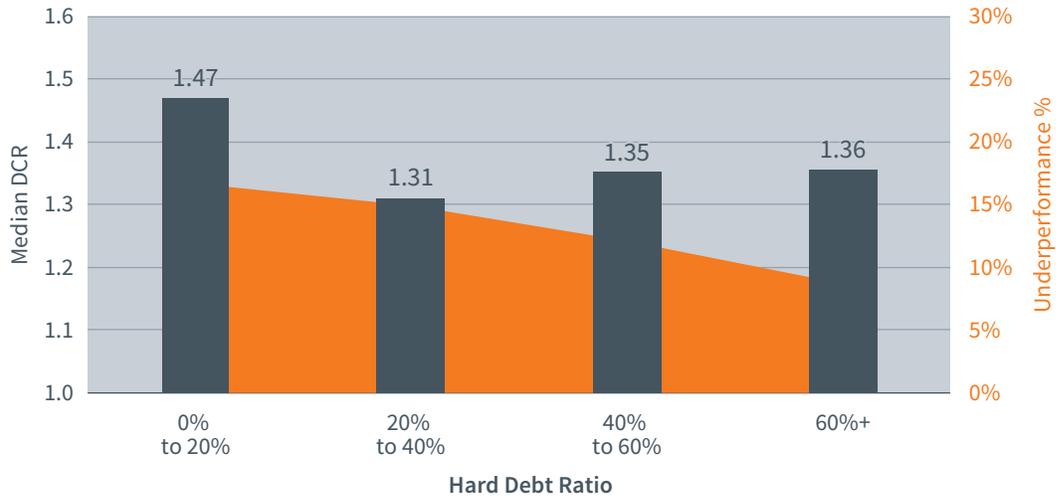


Economic Occupancy by Hard Debt Ratio



Properties with less than 20% leverage reported the most favorable median DCR results in 2016; however, the most heavily leveraged segment reported the higher median per unit cash flow. We were surprised by the general trend showing that, aside from the least-levered group, DCR and per unit cash flow improved as hard debt ratios increased.

DCR by Hard Debt Ratio



Per Unit Cash Flow by Hard Debt Ratio



The most highly leveraged properties also tend to be the largest by unit count; and projects with higher density tend to consistently generate higher levels of cash flow. Properties with less than 20% leverage reported 59 units per property on average versus 102 units among the 61% to 80% leveraged properties. Additionally, the most highly levered developments are likely to be bond deals, which if performing smoothly could more easily generate significant cash flows.

Performance by Location Types — Metropolitan / Non-Metropolitan Counties

To consistently define location types, CohnReznick utilized the Rural-Urban Continuum Codes from the United States Office of Management and Budget (OMB) as applied to official United States 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

Nonmetropolitan 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; for purposes of this report, we focused solely on the metro and nonmetro designations.

The following table illustrates the overall portfolio composition, broken down by metropolitan and nonmetropolitan counties using the aforementioned methodology.

Portfolio Composition: Location Type — Metro / Non-Metro Counties

	Metropolitan Counties		Nonmetropolitan Counties	
	Total	Percent	Total	Percent
Number of Properties	16,805	73.1%	6,188	26.9%
Number of Units	1,466,236	81.7%	327,574	18.3%
Number of LIHTC Units	1,379,193	81.5%	313,121	18.5%
Net Equity	\$90,031,480,000	81.7%	\$20,215,630,000	18.3%
Housing Credits	\$90,356,030,000	80.6%	\$21,779,620,000	19.4%

The data show that housing credit properties in metro counties historically accounted for roughly three-quarters of the overall portfolio. Not only do metropolitan properties outnumber nonmetropolitan properties by nearly 3:1, there are significantly more metropolitan housing credit units than nonmetropolitan because on average, metro housing credit properties contained 82 LIHTC units, while nonmetro properties contained 50 LIHTC 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 100-basis point variance between properties located in metro and nonmetro counties in terms of median physical occupancy in both 2015 and 2016. Similarly, there is an 80-basis point variance between properties located in metro and nonmetro counties in terms of median economic occupancy in both 2015 and 2016. While metro counties were on par with the national median economic occupancy rate, nonmetro counties lagged slightly behind.

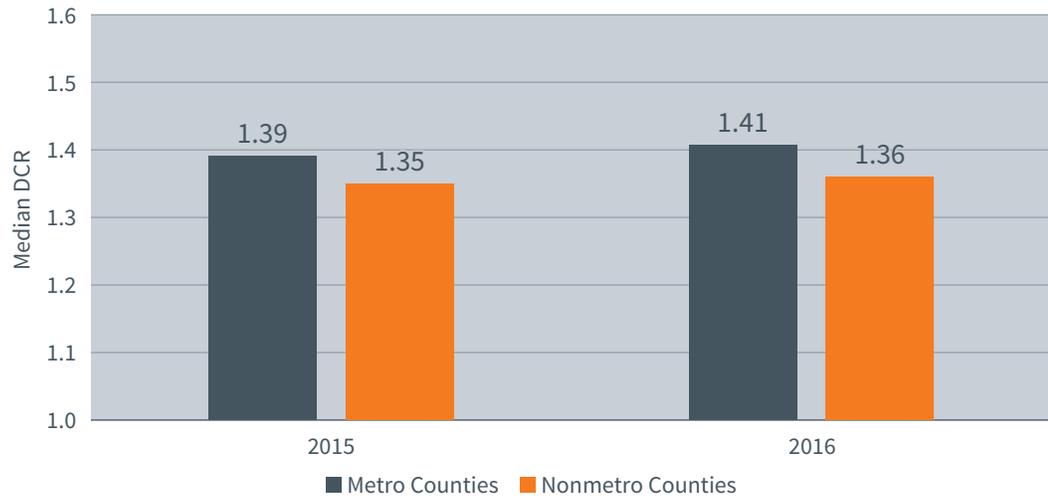
Occupancy Trend by Location Type: 2015–2016

	Median Physical Occupancy		Median Economic Occupancy	
	2015	2016	2015	2016
Metro Counties	98.0%	98.0%	97.0%	97.0%
Nonmetro Counties	97.0%	97.0%	96.2%	96.2%

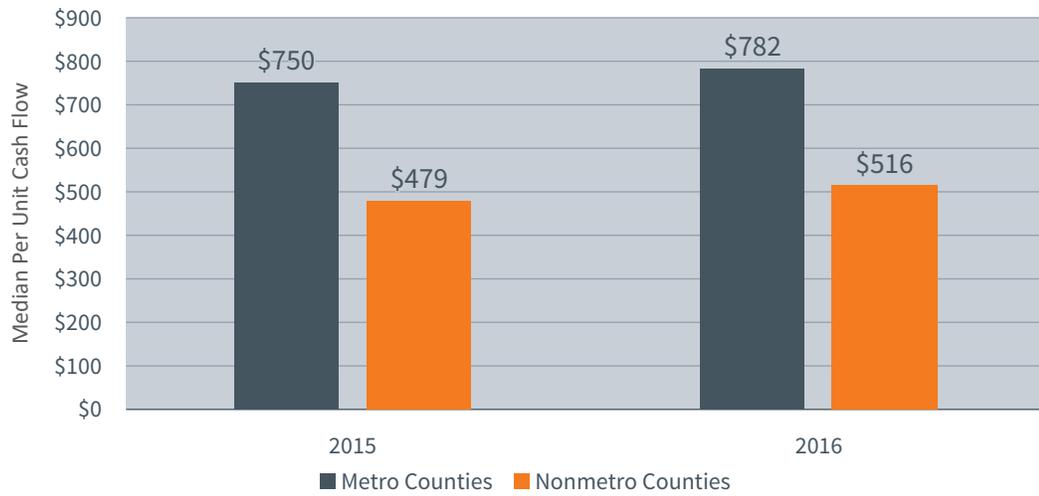
A few vacant units at smaller properties can easily drop occupancy into underperformance territory. Given the fact that nonmetro properties are significantly smaller on average than metro properties, and therefore more sensitive to individual unit vacancies, it is not surprising that the median physical and economic occupancy rates trail their metro counterparts and national medians.

Like occupancy, nonmetro median DCR and per unit cash flow trailed behind metro counties in both 2015 and 2016.

DCR by Location Type: 2015–2016



Per Unit Cash Flow by Location Type: 2015–2016



There is 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 research 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.

APPENDIX A

Survey Methodology & Data Appendix

This report represents the seventh in a series of studies undertaken by CohnReznick concerning the Low-Income Housing Tax Credit Program. In March 2016, CohnReznick transmitted data requests to all active housing credit syndicators known to the firm and a number of the nation's largest housing credit investors. Investor respondents were asked to provide data limited to direct investments and fund-level performance to mitigate what would otherwise be a large overlap of properties' data assembled from participating syndicators' portfolios.

CohnReznick believes that the more than 22,000 properties, the sample size represented in this study, are in excess of 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 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 and/or lack of participation of the largest direct 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. In future reports we plan to capture data for a larger portion of this segment of the market. 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 the aforementioned organizations in March 2016. Respondents were initially requested to return the data collection template no later than June 2016. 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. 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.

DATA FIELDS	DEFINITION/EXPLANATION
PROPERTY INVESTMENT IDENTIFICATION	
STATIC DATA	
CohnReznick Database ID	These are ID numbers assigned to each of your previously submitted properties. Do not edit this field.
Your Database ID	These are ID numbers associated with your property data within your own database environment. If you desire, populate this field. CohnReznick maintains your internal property ID numbers so that it will be easy to reference in future data submissions.
Fund Name	Provide the name of the fund each property belongs to. In cases where property interest is split among multiple funds, please assign the property to the fund that owns the majority LP interest. Ensure that fund names are consistent between the fund and property tabs.
Fund Type	Select from: Direct, Proprietary, Multi-investor, Guaranteed, Public. Ensure the fund types are consistent between the fund and property tabs.
Property Name	Provide the name of the property or a unique identification number from your database which permits future identification.
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 costs; aka: the total sources of funds.
Total LP Net Equity (Federal LIHTC only)	Enter total net equity contributed for federal LIHTCs 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 LIHTCs projected to be delivered to LP at closing. Do not combine state or any other credits.
Development Type	Select from: New Construction, Acq/Rehab, Historic Rehab, and Other
Tenancy Type	Select from: Family, Senior, Special Needs, Supportive Housing and Other. Enter "Special Needs" for properties predominantly serving special needs population (homeless, survivor of domestic violence, people with disabilities, etc.) "Supportive Housing" are properties with a significant service component attached.
Developer Type	Select from: For Profit or Non Profit.
Affiliated Management Company (Yes/No)	Select "Yes" if the management company is affiliated with the property's developer. Select "No" if it is not affiliated.
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.

DATA FIELDS	DEFINITION/EXPLANATION
PROPERTY INVESTMENT IDENTIFICATION	
STATIC DATA (Continued)	
Type of Rental Assistance	Select from: Project-based Section 8, RD, ACC, Other. Choose the major assistance type if more than one is received.
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 Ratio	Enter % (hard debt / total development costs). Enter 0.0% if project has no hard debt.

PROPERTY INVESTMENT IDENTIFICATION	
VARIABLE DATA	
Property Status	Select the property's status as of data submission. 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 actual lower tier closing date. (MM/DD/YYYY)
Placed in Service Date	Enter the actual or projected PIS date. If there are multiple buildings on a property with multiple PIS dates, enter the date when the first building was placed in service. (MM/DD/YYYY)
Stabilization Date	Enter the property stabilization date. (MM/DD/YYYY)
Physical Occupancy	Enter the physical occupancy rate for the year specified. Annual physical occupancy is the average of monthly physical occupancy. 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. Economic occupancy is affected by vacancy loss, loss to lease, rental concessions and bad debt.
DCR (all hard debt) or Income Expense Ratio (No Hard Debt)	Enter the debt coverage ratio or the income expense 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. If the property has no hard debt, enter the income expense ratio, which is defined as operating income / operating expenses (including replacement reserves).
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.
Operating Deficit Funding Source	If the property incurred operating deficits during the effective year (2016 only), choose from the following funding sources: Investor capital call, Upper-tier reserve, syndicator advance, lower-tier reserve, GP advance, debt restructuring or mgmt fee deferral.

DATA FIELDS	DEFINITION/EXPLANATION
PROPERTY INVESTMENT IDENTIFICATION	
VARIABLE DATA (Continued)	
AHIC Watch List (Yes/No)	Select the property's risk rating status as of the property data effective date (12/31/2016). Please be sure to indicate the date used for AHIC ratings in field B9 above. Enter "Yes" if the property is on your organization's watch list based on AHIC standards.
AHIC Rating	Select the property's status as of the property data effective date (12/31/2016). Please be sure to indicate the date used for AHIC ratings in field B9 above. Enter the property's corresponding AHIC rating: A, B, C, D, F

PROPERTY INVESTMENT IDENTIFICATION	
REVENUE & EXPENSES	
Net Revenue	Enter the property's net revenue. Net revenue is defined as net rental income (gross potential rental income minus vacancy losses, bad debt and concession losses) and other income.
Gross Operating Expense	Enter the property's gross operating expenses (inclusive of required replacement reserve contributions).
Net Operating Income	NOI is calculated using your Net Revenue and Gross Operating Expense inputs.
Operating Expenses by Custom Chart of Accounts	CohnReznick will provide a custom template using your firm's chart of account naming conventions for operating expense categories.

FUND INVESTMENT IDENTIFICATION	
STATIC DATA	
CohnReznick Database ID	These are ID numbers assigned to each of your previously submitted properties. Do not edit this field.
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.
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.

DATA FIELDS	DEFINITION/EXPLANATION
FUND INVESTMENT IDENTIFICATION	
STATIC DATA (Continued)	
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.
Original Working Capital Reserve Balance	Enter the initial, fully funded balance for the working capital reserve. Include all reserves except for the reserve that is specifically restricted to fund property deficits.
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.
Original Property Needs Reserve Balance	Enter the initial, fully funded balance for the reserve that is specifically restricted to fund property deficits. If there are no reserves restricted for funding property deficits, enter \$0.
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.

FUND INVESTMENT IDENTIFICATION	
VARIABLE DATA	
Fund Status	"Select from: Active or Dissolved. Dissolved refers to funds that have been completely dissolved. Dissolved funds should also have all of their underlying properties on Disposition status."
Current IRR	Enter the most current projected IRR per the latest investor report.
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	Enter the current balance for the working capital reserve. 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.
Projected Working Capital Reserve Balance at Year 10	Enter the currently projected balance for the working capital reserve at year 10.
Current Property Needs Reserve Balance	Enter the currently projected balance for the reserve that is specifically restricted to fund property deficits. 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.
Projected Property Needs Reserve Balance at Year 10	Enter the currently projected balance for the property needs reserve at year 10.

DATA FIELDS	DEFINITION/EXPLANATION
FORECLOSURE DATA	
First Year of Credit Delivery	Enter the first year of housing credit delivery.
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 LIHTC	Enter the sum of the recaptured federal LIHTC amount and the future federal LIHTC amount that was foregone.
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 investor(s)	Describe negative financial impacts to the investors in terms of IRR, penalty, etc.

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 an Excel template for further testing and quality control analysis.

About Us

About the Tax Credit Investment Services Group

The Tax Credit Investment Services (TCIS) group is a dedicated business unit within CohnReznick focused on evaluating and advising clients on tax-advantaged investments, including low-income housing, historic rehabilitation, new markets, and renewable energy. As a group made up of experts with a fairly narrow industry focus, TCIS covers a variety of consulting areas, including investment due diligence, investment and business strategy, and industry benchmarking research for the benefit of investor and syndicator communities.

The TCIS team is composed of a multidisciplinary group of professionals, including CPAs, attorneys, financial analysts, and other professionals with experience as state housing finance agency and commercial real estate executives. CohnReznick's TCIS team members have authored a number of affordable housing industry studies, speak regularly at industry conferences, and have been widely quoted in the financial press concerning tax credit investments.

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 www.cohnreznick.com/tcis.

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About CohnReznick

CohnReznick LLP is one of the top accounting, tax, and advisory firms in the United States, combining the resources and technical expertise of a national firm with the hands-on, entrepreneurial approach that today's dynamic business environment demands. Headquartered in New York, NY, and with offices nationwide, CohnReznick serves a large number of diverse industries, including Affordable Housing, CohnReznick's largest industry practice. The Firm also offers specialized services for middle market and Fortune 1000 companies, private equity and financial services firms, government contractors, government agencies, and not-for-profit organizations. The Firm, with origins dating back to 1919, has more than 2,700 employees including nearly 300 partners and is a member of Nexia International, a global network of independent accountancy, tax, and business advisors. For more information, visit www.cohnreznick.com.



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