The Effects of Syndicators and Risk Management on Equity Pricing of the Low Income Housing Tax Credit

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THE EFFECTS OF SYNDICATORS AND RISK MANAGEMENT ON EQUITY PRICING OF THE LOW INCOME HOUSING TAX CREDIT

by

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ABSTRACT

A study was carried out to examine the impacts of risk characteristics on equity pricing of tax credits issued under the Low Income Housing Tax Credit Program (LIHTC). The results indicate that credit pricing is not correlated with most traditional real estate risk factors. We hypothesize that risks are mitigated by the services of syndicators, who act as intermediaries between developers and investors, thus managing the perceived risk of the investment. We tested this theory by examining the impact of individual syndicators on credit prices. Additionally, we tested the effect of syndicator fees and other syndicator-specific fixed effects on credit prices. Findings suggest that syndicator fixed effects and fees impact pricing, as do certain tax structure characteristics of the LIHTC developments. Developers appear to be less price-sensitive than investors, reflecting perhaps different levels of negotiating power in their relationships with syndicators, as well as lack of perfect information. Investors appear to focus more on internal rate of return than on price per unit of credit in their investment decisions, thereby confusing the relationship between syndicator effects and credit prices for investors. Housing policy implications and directions for future research are also discussed.

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Introduction

The Low-Income Housing Tax Credit (LIHTC) program provides a policy model intended to achieve public and private goals simultaneously; private investors receive financial benefits from the program while providing needed capital for the public purpose of developing affordable housing. The mechanism by which tax credit equity is priced and the factors that influence pricing provide insight into several key financial and policy implications of the program. The program is intentionally structured to incorporate market mechanisms and financial incentives for investors, and the continued success of the program depends on investors' ongoing willingness to purchase the credits. By examining the factors that determine pricing, we can infer investor preferences and attempt to understand how efficiently the market brings the necessary returns to investors and thus maintains continued investment. This is significant both in the raw level of housing produced and in the relative efficiency of the indirect subsidy, since the price of equity influences the ability of the tax credit to work as a stand-alone production program. Moreover, in policy terms, the credit price offered to developers determines the amount of equity available for housing production. Therefore, the historical and future credit prices will likely impact both the financial as well as political success of the program.

Reflecting the federal government's devolution of the last two decades, the LIHTC essentially functions as a block grant to states by providing direct access to federal funds while retaining local control. The primary players involved in the LIHTC are the state finance allocating agencies, developers who apply for credits, investors who provide equity in exchange for credits, and syndicators who create funds of tax credit properties in order to facilitate the exchange of tax credit investments between developers and investors. Over the program's

lifespan, competition for the credits has resulted in increased equity prices, declining yields and increased intermediary sophistication and specialization. In its early years, the program was criticized for inefficiency due to the need for multiple layers of funding, often requiring other government subsidies, resulting in high transaction costs and a relatively low percent of credit sale proceeds going towards actual development as opposed to intermediary costs (Stegman). However, increasing competition and sophistication of program participants over time have greatly increased efficiency; proponents assert that now 94 percent of each tax credit dollar spent by the federal government goes to housing (Roberts and Harvey). These financial trends reflect a lower perceived risk of the investment.

Although LIHTC investments can provide many of the same benefits of conventional real estate investment – such as depreciation, cash flow, and capital appreciation – the investors primarily invest to receive the federal income tax credits. Therefore, the tax structure of the deal is more important to investors than traditional real estate characteristics. Moreover, tax credit properties are generally not sold as individual properties, but rather are packaged into funds by syndicators, thus diversifying much of the idiosyncratic risk. This paper examines the effect of such risk management by syndicators on investor risk perceptions, measured by the price that investors are willing to pay per unit of tax credit. Through an original dataset of 186 properties, we have examined the effect of traditional real estate characteristics, fixed effects of several syndicators, and syndicator fees on equity pricing, through which conclusions can be drawn about investor risk and return expectations. The results indicate that syndicators play a pivotal role in managing investor's perceived risks, but it is unclear who ultimately bears the costs of these services. It appears that developers and investors value syndicators' services differently,

and the syndicator effects alone do not explain all variations in credit price, possibly reflecting other less tangible factors that also impact returns.

Section 1: Overview of Policy and Financial Aspects of the Low Income Housing Tax Credit

1.1 Origins of the Low Income Housing Tax Credit

The LIHTC evolved out of two simultaneous trends in the mid 1980's: privatization of federal housing programs and a reduction in real estate tax incentives. Since the 1960's federal housing intervention has focused on demand-based programs funded through direct federal allocations. The policy shift began after federally allocated and administered programs were seen as largely ineffective. Public housing was viewed as inefficient, narrow, and high in social costs, while programs that included a private component, such as Sections 8 and 236 which channeled funds to developers, were criticized for their overgenerous subsidies to developers and perverse incentives that encouraged speculative investment. However, changes in the incentive structure were followed by overdevelopment and subsequent highly public loan debacles, including the Savings and Loans crisis (Orlebeke).

As a salve to both the real estate and housing advocacy industries, in 1986 Congress replaced both the previous real estate tax incentives and other federally assisted housing programs with the LIHTC. Initially a poorly understood program, tax credits were left unused during its first few years. Much of the hesitation was due not only to the complicated structure of the program and the lack of industry expertise in its use, but also the uncertainty surrounding its legislative fate. During its first few years, numerous attempts were made to repeal or reduce the credit, including one successful attempt to reduce the tax credit allocation in 1989 (although it was increased back to its original level the following year). Not until 1993 did the tax credit receive annual automatic allocation. This immediately changed the perception of the program

from a yearly gamble to a permanent government program, immediately reducing its systemic risk.

Since its inception in 1986, the LIHTC industry has grown from a handful of individual developers and investors to a large niche industry complete with its own secondary market and advocacy interests. The evolution of the industry has been in large part due to the significant federal tax spending on the LIHTC, much of which has been as a consequence of the elimination or reduction in other federal housing programs. The federal government spent $3.2 billion in fiscal year 1998 and is estimated to spend $19.6 billion from 1998 to 2000 in LIHTC tax expenditures (Orlebeke). This compares to $1.61 billion in fiscal year 2000 for HOME funds which focus on rehabilitation, acquisition and construction of low-income family housing for both renters and owners, and $100 million in 2000 for Section 521 which funds rural housing efforts through the Department of Agriculture's rental housing programs (Schussheim). Due to the investment in tax credits, roughly 550,000 to 600,000 units for low-income families were placed in service in the first ten years through the LIHTC (Cummings & DiPasquale).

In late 2000, due to heavy lobbying by such diverse groups as the National Multifamily Homebuilders Association, the National Association of State Housing Finance Agencies, and low-income advocacy groups, the state per capita tax credit allocation was increased to a two-year phased increase of 50 cents up to $1.75 and indexed to inflation thereafter. A notable difference between the LIHTC program and other affordable housing programs (indeed, most social policy programs) is the level of public support, bolstered by the relatively broad base of participants who all enjoy some level of benefits. The coalition behind the tax credit includes not only low-income housing advocates but private investors and various financial intermediaries including syndicators who provide services to the industry. The successful legislation indicates

the diverse and powerful interest groups that the tax credit has created, making it likely that its future will be secure.

1.2 Program Mechanics

The LIHTC is unique in that it is funded by the Treasury, overseen by the IRS, and administered by state agencies. Conspicuously absent from the program's administration is the Department of Housing and Urban Development which is not substantively involved in the program despite its housing mission. Currently, the federal government allocates each state $1.25 per capita in tax credits. State finance agencies administer the credits through a competitive process whereby they seek applications from developers planning multifamily projects with an affordable housing component. Developers are selected based on criteria determined primarily by the state based on local housing needs and goals. Although the goals are determined locally, the federal government also requires that states meet specific selection criteria including preferences for developments that serve the lowest-income tenants and those located in difficult to develop areas or qualified census tracts. Additionally, since 1989, all states have been required to allocate at least 10 percent of the credits to non-profit developers or joint partnerships between for-profit and non-profit developers. Most states accept applications twice a year and award allocations accordingly.

Once a developer is selected, the amount of credits allocated by the state agency depends on the type of development and total development costs of the project. For new construction and rehabilitation, the tax credit rate is approximately 9 percent per year over ten years, calculated in order to achieve a present value of 70 percent. For building acquisition, minor rehabilitation, and federally subsidized buildings receiving below-market rate loans (including bonds), the building

receives approximately 4 percent per year, yielding a 30 percent present value. Once total development costs are known, the eligible basis is calculated which generally consists of the development costs minus the land and certain types of subsidies. The qualified basis is then determined by the percentage of low-income units multiplied by the eligible basis. An investor will provide equity based off of the qualified basis and applicable tax credit rate by purchasing tax credits at a rate below the anticipated future tax benefits. Once selected, the projects must be placed in service within two years or risk recapture of credits.

Although the timing of the process varies, as will be discussed later, once developers receive an allocation of tax credits, they generally sell their credits in exchange for up-front equity to a syndicator. The syndicator offers the developer a set price per dollar of tax credit based on the market value of the credit. The market value may be relatively elusive since the developer may have little independent or public information as to the current price of credits, although they are free to shop their credits to a number of syndicators in an attempt to receive the highest possible price. The higher price per credit a developer receives, the more equity will go directly to the project thus reducing the need for other sources of permanent or gap financing. Once a developer secures a syndicator, the syndicator buys the credits and compiles a LIHTC fund to attract investors. Once investors are secured, the syndicator sells the credits to investors at a premium from the price paid to the developers. For example, if a syndicator buys credits from a developer for 80 cents, it may charge a 10 percent load for its services and, in turn, sell the credits to an investor for 88 cents on the fund level. This spread is the syndicator's profit for their intermediation services. As can be seen, the price per credit is the starting point for measuring the most basic elements of risk and return to all key players in any LIHTC development.

Once the development is placed in service, it must remain in low-income use for at least 30 years, although investors receive benefits for only 10 years and property owners may elect to end low-income use after 15 years if certain conditions are met. Since final development costs are often unknown until construction completion, the final tax credits are adjusted at the end of construction. For this reason, many funds include timing adjustments and credit guarantees to safeguard investors. In order to qualify as low-income, rents must remain in accordance with LIHTC program guidelines. Unlike other federal programs, the LIHTC rent guidelines are not based on individual tenant incomes, but on metropolitan household income and expenses. Therefore, tenants may pay somewhat more or less than the typical 30 percent threshold of their income on rent (McClure). Project set-aside levels are also based on metropolitan data. Each tax credit project must serve households with incomes no more than 60 percent of the area median income. Generally, the developments must set aside either 20 percent or more of the units for households with incomes 50 percent or less of the area median gross income or set aside 40 percent or more of the units for households with 60 percent or less of the area median gross income.[1] Different aspects of program compliance and financial stability are monitored through syndicators, the IRS, and state agencies. As an additional incentive to sustain investor's interest, investors risk recapture of the tax credits if the property falls out of compliance. Therefore, investors and agents acting for investors have strong incentives to ensure that the property meets all ongoing compliance requirements.

[1] In practice, most developers use the 60 percent threshold since it allows higher rents and, therefore, can make the project more financially feasible.

1.3 Tax Credit Investor Benefits and Risks

In addition to the tax credit benefits, the LIHTC provides investors the typical real estate benefits of passive income deductions, potential cash flow dividends and any capital appreciation. However, through interviews with both investors and syndicators, it is clear that the primary motive for investment is the tax credit benefit. The anticipated internal rate of return (IRR) of a project is calculated incorporating all benefits. On a typical project 23 percent of the benefits accrue from depreciation, 2 percent from cash flow, and fully 75 percent from tax credits. The tax credits are also the most stable and predictable source of benefits. Barring foreclosure or noncompliance, the investors will continue to receive the same federal tax credit on a dollar-for-dollar basis every year regardless of the actual real estate performance. Additionally, affordable housing is seen as having an unlimited demand, making large vacancies unlikely. Due to these factors, the investment is now compared to other potential low to moderate risk commodities.

Since the mid 1990's, the typical investor has shifted from individuals to corporations. Earlier in the program, individual investors played a larger role but as competition increased larger equity investments were required, and changes in passive income rules and the effects of the alternative minimum tax caused individual investors to exit the market. Some corporate investors have also exited the market as yields have declined, causing the evolution of a secondary market. Because of the liquidity constraints and the relatively small pool of active investors, the secondary market tends to be highly specialized and underutilized. However, the financial services industry has maintained a strong presence in LIHTC investments due to Community Reinvestment Act (CRA) requirements. As part of their CRA requirements, financial institutions are required to invest in the communities in which they do business. Since

these institutions can receive CRA credit for tax credit investments in their geographic region, their yield threshold is often lower due to their non-market objectives.

Despite these factors, the investments are not without risk. The tax credit risk for the investor begins once the credit is allocated. According to tax credit regulations, a project receiving tax credits must be placed in service within two years of allocation. If it is delayed, the developer and investor run the risk of credit recapture. Additionally, investors do not receive the credits until the project is placed in service. Therefore, investors are very concerned with timely completion so that their investment does not erode due to larger than anticipated discounting. In other words, if investors expects to receive $1.00 of tax credits one year after they make the investment and they have a discount rate of 10 percent, they anticipate beginning to earn $0.91 of credit in year two. If the project is delayed, then the initial tax credit benefits and all subsequent benefits are discounted an additional year. Instead of receiving $0.91 in year two, the investors would not receive any credit benefits until year three when they would receive $0.83 in discounted terms.

Once the project is placed in service, it must meet compliance requirements as monitored by the state allocating agencies. These requirements are primarily intended to ensure low-income occupancy by qualified residents and appropriate rent levels. Although very rare, if a project falls significantly out of compliance, the investor can risk recapture of the credits. This is a significant penalty since the investor must pay back the accelerated portion (calculated based on noncompliance criteria) of the tax credits, plus interest, for all prior years. If the project becomes financially unsound, creditors can also foreclose on the property as with any other real estate investment, also resulting in recapture of credits.

Financial solvency of the development can be in jeopardy if expenses suddenly increase substantially since the rents are capped and cannot be raised to compensate for any unanticipated increases. As will be discussed later, however; the actual risk of foreclosure may be lower than for conventional properties due to the prevalence of public lenders. Additionally, the investment is considered highly illiquid since it must be held for ten years. Operational risk is likely the highest risk since multiple set-aside levels and compliance reviews can be complicated to administer. Additionally, tax credit properties, like other low-income housing properties, are generally seen to have higher management risks than conventional properties with higher-income tenant populations. On the other hand, the government risks have been substantially reduced since enactment of the increased allocation and permanent funding legislation, but are still present since investors do not receive their full benefits for at least 10 years.

1.4 Financial Trends

Since 1993, two significant and well-documented trends have emerged in the LIHTC industry: increased competition for tax credits on the part of investors and a related higher price per unit of credit causing declining investor yields. The competition has been primarily due to the increased comfort and sophistication of players within the program. In 1987, only 18 percent of the total available credits were allocated by states. By 1995, 97 percent of the authorization that year was allocated by states with 37 of 54 authorizing agencies allocating their full authorization (Cummings and DiPasquale). In response to this increased competition, federal allocation rules have been modified. Beginning in 1990, federal rules changed to require state finance agencies to award at least 10 percent of all tax credits to non-profit developers. One result of this legislation has been an increase in partnerships between for-profit and non-profit

developers. Additionally, projects located in difficult to develop areas or qualified census tracts also receive 30 percent larger credits.

Because of the increased competition, developers are able to extract more equity from each unit of credit awarded. This has been a positive development for developers who have seen tax credits rise from an average price per unit of 42 cents in 1987 to 65 cents in 1996. Alternatively, investors have seen yields decline since they must pay more for the same one dollar of tax credits (Ernst & Young). Rates have dropped to an average after-tax rate return of 10 to 12 percent in 1996 compared to 18 percent in 1990 (Ernst & Young). However, the lower yields accurately reflect the lower perceived risk of tax credit investments.

Decreased risk and increased attractiveness to investors is also due to the involvement of syndicators throughout the process. Syndicators purchase tax credits from developers, package tax credit developments into funds to diversify investments, and provide asset management and compliance services to reduce the risk of foreclosure or recapture. Sponsors choose the best mix of projects and developers to create a fund that meets specific investment objectives. Typically, they buy about 70 percent of the property before raising capital. At closing they receive an acquisition fee of around 5.5 percent. At the end of the second year, if the fund's projected stabilized yield is realized, they collect an additional one percent fee. During years one through ten they typically receive a 0.6 percent annual asset management fee. Finally, after 15 years when the fund is liquidated, they collect a disposition fee along with 2 to 3 percent of any residual value in the properties after investors are repaid (Rudnisky).

The intermediary role of syndicators has followed the traditional evolution of many financial services by moving from broad generalist to targeted service offerings. As a response to market changes, syndicators have internally reorganized and consolidated in order to offer

more specific services to a broader range of investors. This has resulted in numerous strategic alliances between banks and real estate syndicators such as Boston Capital and Bank of America; and Banc One Capital Corporation and Boston Financial (Mishra, June 1998). The overall effect on the tax credit industry has again been lowered risk to investors due to standardization of the credits, savings from economies of scale, and specialization of funds.

While most corporate investors buy units or "shares" of a fund, some highly specialized investors purchase tax credits through single-investor funds created specifically to meet their investment objectives. These investors typically tend to have strong in-house capacity for real estate investment and tax credit expertise, as well as specific interests in promoting housing for non-market objectives. The largest of these investors is the Fannie Mae Corporation which works through syndicators to compile funds, often targeting specific geographic regions in order to increase corporate exposure to promote their housing products and mission within a targeted community. In the early 1990's when the syndicator market was less sophisticated and specialized, Fannie Mae often syndicated their own projects through direct investments, although they now more typically work through outside syndicators. Because syndicators create funds specifically for these investors, these funds tend to attract the highest quality projects and most experienced developers. Unfortunately, obtaining information about these single-investor funds is difficult and, therefore, additional comparisons between single and multiple-investor funds are difficult to delineate.

1.5 Permanent and Gap Financing in LIHTC Projects

While conventional real estate may often be financed through equity and a single mortgage loan, tax credit properties usually fall short of covering total costs through primary

loans due to lower than expected income from restricted rents. Thus tax credits are generally not used in isolation; rather, they serve as leverage to acquire multiple sources of permanent debt, often at favorable terms. This permanent debt is often composed of multiple layers of both public and private loans, grants and other sources of gap financing, defined as any sources of funds required beyond the primary mortgage loan. Funding requirements as well as legislative adjustments have enabled the tax credit to be combined with other sources of funding. With higher price per unit of credits, some of the need for multiple funding layers has decreased since developers are able to receive more equity out of each allocation. Unfortunately, this trend has coincided with increased construction costs causing additional layers of debt to still be necessary (Odman). The percent of total development costs provided by gap financing has remained relatively constant over time, at about 16 percent of total development costs (Cummings & DiPasquale).

An increasingly common secondary funding source for developers has been tax-exempt bonds. The federal government sets a funding ceiling for tax-exempt bond allocations for private activities, and states determine what share of these bond funds will go to housing purposes. State allocating agencies (often the same finance agencies administering the tax credit) are charged with distributing bond allocations related to housing. A particularly attractive feature of the bond is that once a developer receives a bond allocation, the developer does not have to enter the same competition for tax credits. Additionally, interest rates on such bonds are often less than conventional long-term financing (Mishra, Dec. 1998). The increased use of bonds has also given states a more active role underwriting transactions and structuring projects (Mishra, Dec. 1998). Some of the drawbacks of bond financing include the 4 percent limit which provide a less stable source of benefits to investors since more of the benefits come from cash flow rather than

credits. Nevertheless, market players have responded with bond programs designed to offset some of these downsides. For example, Freddie Mac initiated the "Multifamily Housing Bond Credit Enhancement Program" in which borrowers can obtain credit enhancement for properties financed with proceeds from tax-exempt bonds (Mishra, June 1998). Fannie Mae has also responded by lowering the fee for bond credit enhancement. As a reflection of their popularity, the bond allocation has also recently been increased. In October 1998, Congress increased the cap on bonds by $5 per capita beginning in fiscal 2003 for a total increase of $25 per capita until 2007 (Mishra Dec. 1998).

While multiple sources of funds are often necessary to make low income deals work, there are some restrictions and regulations regarding the packaging of these funds, primarily intended to ensure that developers do not receive more subsidies than they actually need. Programs receiving federal funds must go through a HUD subsidy layering review administered at the state level. Additionally, since 1996, housing authorities have been allowed to combine public housing funds with private financing, including the LIHTC. This has been particularly important for HOPE VI projects which often take the bulk of a state's tax credits (Guggenheim). If funds are considered federal grants, they count against the eligible basis, so funds are often channeled through housing authorities. Public housing operating subsidies and Section 8 assistance can be considered non-federal grants so that operating subsidies would not reduce the amount of tax credits a project could earn.

Section 2: Data Characteristics and Methodology

In order to assess risk perception and the role of the syndicator, we collected property and fund level information on 186 properties comprising 16,575 units. All of the properties received credit allocations between 1997-2000 and were syndicated through large, for-profit syndicators. The data was collected from due diligence reports written by Ernst & Young's Affordable Housing Services Group, which provides consulting services related to the LIHTC to both investors and syndicators. The data include information on property type, location, developer characteristics, debt sources, amounts, and terms, rental set-asides, characteristics of the tax credit allocation, and sponsoring syndicator. A full list of data fields collected is attached in Appendix A.

The reports from which data were obtained offered somewhat limited information on local markets, both in terms of neighborhood demographic and economic characteristics and comparison of the tax credit properties to surrounding real estate. Since exact addresses were not included, it is also impossible to discover more neighborhood information from census data or similar sources; thus our analysis will not attempt to discuss results dealing with residents or local conditions. However, our primary research questions relate to the impact of various risk factors on credit pricing, and the sample offers quite detailed information on a variety of potential risk factors.

Although the funds sampled include a variety of properties from across the nation, some bias is evident in the general characteristics of the properties documented. In particular, the funds represent standard grade investment quality deals, around the middle of the desirability range. We found a low incidence of "difficult" projects, particularly urban properties in high-crime or otherwise undesirable neighborhoods, including HOPE VI redevelopment projects. On

the other end, the funds reviewed are less likely to have the top quality and most desirable projects, since these are likely to be included in single investor funds or those held by direct investors. Additionally, our data is exclusively drawn from the period 1997-2000; some differences are likely between projects assembled in the early years of the program and this later, more mature stage. The table below presents the general parameters of our sample compared with samples used in two of the more extensive previous studies: City Research (1998) and Abt Associates for HUD (1996). The authors of the City Research study, Jean Cummings and Denise DiPasquale, used data obtained from four national syndicators, reviewing 2,554 properties (150,570 units) receiving allocations between 1987-96, roughly 25 percent of total units produced during this period (Cummings and DiPasquale). The Abt study is drawn from the database using reports compiled from all state allocating agencies over the duration of the program; some reporting problems have made this database incomplete, and the range of data collected is quite narrow, but it is the most complete sample of properties assembled.

Table 1: Sample Properties' Characteristics

	Talle & Schuetz (1997-2000)		City Research (1987-96)		Abt Database (1992-94)	
	Properties	**Units**	**Properties**	**Units**	**Properties**	**Units**
Number of observations	186	16,575	2,554	150,570	3,987	168,046
Region[2]						
Northeast	12.4%	13.8%	22.3%	19.8%	13.7%	12.9%
Midwest	25.9%	18.0%	22.8%	20.4%	32.5%	27.0%
South	30.8%	40.0%	39.3%	43.4%	39.1%	41.6%
West	30.8%	28.2%	15.6%	16.4%	14.7%	18.7%
RHS financed[3]	14.1%	5.7%	38.3%	21.2%	34.5%	25.7%
Developer status						
Nonprofit	8.1%	4.6%	31.2%	27.4%	20.3%	23.2%
For-profit	71.5%	76.8%	NA	NA	NA	NA
Both	16.7%	14.4%	NA	NA	NA	NA
Public	3.8%	4.3%	NA	NA	NA	NA
Project Type	73.1%	66.6%	68.0%	64.5%	65.9%	60.7%
New Const.						
Rehabilitation[4]	26.9%	33.4%	32.0%	35.5%	34.1%	39.3%
Project size						
5-36 Units	30.1%	9.2%	47.9%	20.0%	NA	NA
37-50 Units	14.5%	7.3%	18.8%	14.0%	NA	NA
51-99 Units	22.6%	18.7%	17.1%	20.3%	12.6%	NA
100+ Units	32.8%	64.7%	16.2%	45.8%	9.8%	NA
Location[5]						
Central City	29.6%	43.1%	42.9%	48.2%	49.1%	54.4%
Suburban	25.3%	31.5%	24.4%	31.6%	21.0%	26.1%
Nonmetropolitan	45.2%	25.4%	32.7%	20.2%	29.9%	19.5%
Property type[6]						
Family	75.8%	80.8%	NA	NA	NA	NA
Senior	21.0%	16.5%	NA	NA	NA	NA
Both	3.2%	2.7%	NA	NA	NA	NA

[2] A listing of states by regions can be found in Appendix B.

[3] RHS refers to the Rural Housing Services, previously the Farmers Home Administration (FmHA), which administers Section 515 Rural Rental Housing Program. The program provides low-interest mortgages for rural rental housing development, including many LIHTC properties. Mortgages are usually one percent interest on 50-year terms.

[4] Some LIHTC properties qualify for additional credits under historic rehabilitation; in our sample these properties (four in total) will be categorized together with rehabilitation projects.

[5] The location categories are defined as follows: "Central city" is the main city or cities of a metropolitan area; suburban is within a metropolitan area but not within a central city; non-metropolitan is located outside a metropolitan area and is largely but not exclusively rural.

[6] Both elderly and family properties can receive tax credit funding; a few properties target a mixed population, as noted under "Both".

As shown in Table 1, our sample is most heavily weighted towards properties in the South and West, with the smallest percentage in the Northeast. These proportions are fairly similar to the HUD study; the Cummings and DiPasquale study leans more heavily towards the Northeast, in part because their data was taken directly from syndicators, several of whom are located in the Northeast. The proportion of properties receiving funding from the Rural Housing Service is considerably lower than in the two previous studies, which can be explained by policy changes in the program that result in a sharp decrease in production under the Section 515 program after 1995, prior to our sample properties. Compared with the City Research survey, our sample contains fewer small and mid-sized properties, with nearly twice the percent of very large properties (greater than 100 units). This may be due to selection preferences of the funds or due to the increasing competition for credits that benefits larger properties with economies of scale in production. Additionally, our sample has a relatively high proportion of properties using tax-exempt bonds, a fairly recent funding option, and bond-funded properties have a much higher likelihood of being very large than those using conventional credits. As noted before, our sample has a much smaller proportion of properties in urban areas than either of the two previous surveys, and a much higher proportion in non-metropolitan areas. Some of this difference is likely due to fund selection preferences, since urban properties may either be more "difficult" and less desirable for investment purposes, or may be highly prized by direct investors and single investor funds.

Table 2: Source and Size of Primary Loans, by Lender Status

Lender Status	No. of Loans	Percent of Loans	% TDC from Equity[7]	% TDC from Primary Loan[8]	% TDC from Gap Financing[9]
Private	75	40.8%	55.5%	28.2%	16.7%
Public	108	58.7%	40.9%	47.2%	11.9%
Federal (non-RHS)[10]	5	2.7%	34.5%	39.0%	26.5%
State	66	35.9%	44.5%	46.9%	8.6%
Local	15	8.2%	38.5%	42.2%	19.2%
RHS[11]	19	10.3%	34.3%	52.3%	13.4%
Non-profit	1	0.5%	39.4%	37.0%	23.6%
Total	184	100.0%	46.8%	39.5%	13.9%

Table 2 shows the breakdown of primary loans by lender status, and the relative amounts of costs provided by equity, primary loan, and gap financing. As shown below, nearly 60 percent of first loans were provided by public sources, while 40 percent of first loans were obtained from banks or other private lenders. To the extent that public lenders are reluctant to foreclose on tax credit properties, this trend would indicate lower levels of financial risk for many of the properties. Moreover, while approximately 96 percent of first loans were hard loans, nearly half had concessionary or below-market interest rates or loan terms. The relative size of primary loans varies considerably by lender type as well. State issued loans and RHS loans provide the largest amount of debt, while private lenders provide the smallest proportion of total costs. This raises the question of whether the high proportion of costs from equity in projects with private primary lenders reflects higher equity prices in those properties, or simply

[7] Percentage of total development cost from all equity sources.
[8] Percentage of total development cost from the first "primary" loan.
[9] Percentage of total development cost from all sources of gap financing (non-equity or permanent financing).
[10] Federal funding source not inclusive of funds from the Rural Housing Services program.

greater reluctance of private lenders to issue large loans to tax credit deals. This question will be addressed later in the model estimates. Just over 20 percent of the primary loans used tax-exempt bonds, almost all issued by public sources, most commonly state agencies. Overall, the percent of total costs from gap financing is slightly lower in our sample than cited by Cummings and DiPasquale, which could be due to the higher equity prices obtained in more recent years.

[11] Funds from federal Rural Housing Services program.

Section 3: Conventional Pricing Model

3.1 Risk and Return Correlated to Real Estate Characteristics

In traditional market-rate real estate investments, expected investor returns are a function of perceived risk of the individual properties. The expected returns can be estimated through the price investors are willing to pay for equity in any particular deal; a relatively high equity price will result in lower returns to investors, reflecting a lower risk of the underlying asset. The risk-return relationship in pricing LIHTC investments should operate the same way. This assumption is reinforced by the observation that as investor risk perception has declined over time, price per unit of credit has risen, driving down investor returns. LIHTC investments derive most of their return from the tax benefits of the credits, with some additional benefits (as with traditional real estate) from cash flow and capital appreciation. However, since the receipt of tax credit benefits is contingent on the successful development and operation of the property, one would expect to see similar relationships between risk from property characteristics and equity pricing, just as in a conventional market investment. Given this expected outcome, we developed a model that assesses the impact of key property and financial risk characteristics on price per unit of tax credit.

The financial risks include potential income shortfalls, leading to loan default and foreclosure. We collected data on a variety of factors that could indicate level of financial risk: total costs and costs per unit, level of rental discount, year of credit allocation, use of tax-exempt bonds, status of primary lender, terms of primary loan, debt coverage ratio, ratio of primary loan to total value, and number of debt sources used. We would expect those characteristics that traditionally indicate increased financial risk – high overall or per unit costs, significant rental discounts, market rate loans from private lenders, lower debt coverage ratio, high loan to value

ratio, and high number of debt sources – to have a negative impact on the credit price, indicating that investors expect a higher return in exchange for assuming those risks. Regression 1 in Table 3 shows the results of the estimate, using price per unit of credit as the dependent variable. Additionally, we tested the impact of various operational risk factors on credit pricing. Factors that might be expected to affect the level of risk include type of construction, region, type of development, location relative to metropolitan area, developer status and experience, and number of income set-asides. Regression 2 in Table 3 shows the estimated effect of operational risk factors on credit price, and Regression 3 shows the combined model using all these financial and real estate characteristics.

Table 3: Estimated Model of Price per Credit by Financial and Real Estate Characteristics[12]

Dependent variable: Unloaded price per unit of credit			
Independent variables	**(1)**	**(2)**	**(3)**
Total Development Costs	1.94e-09* (8.77e-10)		2.30e-09* (9.56e-10)
Total Development Cost/Unit	1.28e-07 (1.26e-07)		8.68e-08 (1.64e-07)
Moderate rental Discount	.0062 (.0203)		.0120 (.0231)
Significant Rental Discount	.0010 (.0158)		.0143 (.0200)
Very Significant Rental Discount	.0121 (.0161)		.0139 (.0206)
1998 Allocation	.0168** (.0093)		.0170** (.0090)
1999 Allocation	.0388* (.0097)		.0370* (.0110)
2000 Allocation	.0566* (.0115)		.0623* (.0119)
Tax-exempt Bond	.0468* (.0152)		.0463* (.0164)
Private Primary Lender	-.0275**		-.0331*

[12] Variables significant at either 5 percent or 10 percent level are shaded. * Indicates significance at the 5 percent level and ** indicates significance at the 10 percent level. Robust standard errors are in parentheses.

	(.0153)		(.0163)
Rural Housing Services Primary Lender	.0145 (.0189)		.0220 (.0215)
State Primary Lender	-.0230** (.0155)		-.0310** (.0166)
Soft Primary Loan	.0016 (.0146)		.0093 (.0197)
Market Rate Primary Loan	-.0064 (.0081)		-.0045 (.0101)
Debt Coverage Ratio	.0364** (.0209)		.0356 (.0236)
First Loan-to-Total Value Ratio	.0266 (.0260)		.0138 (.0247)
Number of Debt Sources	.0053 (.0033)		.0035 (.0039)
New Construction		-.0135 (.0089)	.0040 (.0092)
Midwest		.0140 (.0130)	.0136 (.0138)
South		.0066 (.0129)	-.0013 (.0131)
West		.0063 (.0133)	-.0019 (.0131)
Family Property		-.0015 (.0098)	.0112 (.0082)
Family and Senior Property		.0222** (.0117)	.0304* (.0141)
Suburban Location		.0130 (.0105)	.0097 (.0094)
Non-metro Location		-.0025 (.0092)	.0026 (.0098)
Non-Profit Developer Involved		.0022 (.0084)	.0003 (.0082)
Developer Net Worth		1.60e-10* (8.09e-11)	2.19e-13 (5.79e-11)
Number of Income Level Set-asides		-.0019 (.0043)	.0033 (.0042)
Constant (intercept)	.6742* (.0350)	.7741* (.0160)	.6563* (.0429)
R-squared	.4249	.0678	.4618
N	170	184	169

As the table above shows, most of the financial and real estate risk factors that we would expect to affect credit pricing appear to have no significant impact. The only significant

variables are total development cost, year of allocation, use of tax-exempt bonds, and primary loans from private or state lenders. The larger the total development cost of the deal, the higher the price per unit is, reflecting perhaps investors' preference for large projects that yield more tax credits. As found in previous studies, price per unit of credit increases with each successive year, reflecting investors' increasing comfort with the program and higher levels of competition, resulting in lower required returns. The use of tax-exempt bonds also increases credit prices, perhaps because these deals allow developers to avoid competition for credits and thus may be easier to package, decreasing risk through the allocation process. The status of two types of primary lenders is significant. Private lenders may well be seen as more likely to foreclose on properties than public lenders, thus increasing the risk of those developments. It is unclear, however, why a primary loan from the state would increase risk. While the coefficient on the dummy "both" for both elderly and family units in the property is significant, this is probably the result of the small number of observations in this category.

In general, the model indicates that investors are not pricing credits according to traditional real estate risk factors in our sample. Rather, the significant variables mostly refer to the amount and type of credits received and competition for credits among investors. Given this finding, other variables we might expect to have an impact would be whether the credits are 4 percent or 9 percent, and the point during construction when investors join the process. However, data on these variables were not available. It is interesting to note that even variables that might reasonably impact compliance risk (such as number of set-asides, which complicate compliance and reporting) or straightforward financial risk (debt coverage ratio) have no discernable impact on pricing.

The lack of relationship between traditional risk factors and pricing was confirmed by interviews with syndicators and investors. As Jeff Goldstein, Director of Acquisitions at Boston Capital stated, "Investor returns are not based on development economics but on tax credits." In market-rate investments the price per unit of tax credit should reflect the risk of the property since risk impacts the investors' expected return. These findings are partly explained by the fact that investors rely more on estimated IRR than price measures in making investment decisions. The IRR calculation for these investments tends to be very complicated and sensitive to multiple factors, particularly investment timing, since it is composed of several different benefit streams. In most cases, the IRR is calculated on a fund rather than a property level as well. Thus, from the investor perspective, traditional real estate or financial risks seem less important than tax structure of the deal and market level competition for the credits in our sample.

Section 4: Syndicator Effects on Equity Prices

4.1 The Role of the Syndicator as Risk Mitigator

As discussed in Section 1.3, investors face a variety of risks when purchasing tax credits: delays in the development process, cash flow shortfalls and foreclosure, liquidity problems, property operations, compliance and recapture, regulatory or policy changes, and potential incentive misalignment with developers. As with other real estate investments, investors face a complex and highly specialized process, making it difficult for individual investors to obtain complete information on properties, to accurately assess the level of risk and make informed investment decisions. Moreover, tax credit properties require continuous monitoring and oversight from allocation through development and during the entire compliance period in order for investors to redeem their annual tax credit benefits. Investors vary widely in their level of interest in evaluating the properties; this seems to vary by level of in-house capacity, size of investment, and general attitude of the organization towards the investment (Schnitzer).

Because of the need for complex information and ongoing management, the entire process depends heavily on the intermediary role played by the syndicators. Financial intermediaries, defined as "economic agents who purchase from suppliers for resale to buyers or who help buyers and sellers meet and transact" (Spulber 3) are needed in markets with transaction frictions or information imperfections - conditions clearly met in the tax credit market. Syndicators manage all of the investor risks described above, mediate between the interests of the developers and investors, serve as a clearinghouse of information on the individual assets, and generally maintain smooth functioning of the market for credits. They also essentially act as an insurance service for investors by not only providing ongoing monitoring or

"preventative" services, but also assurances of available resources if a development becomes financially unstable.

For each risk faced by investors, syndicators attempt to offer a service designed to mitigate risk. Typical services include selecting developers and/or properties to include in a fund, investigating the risk potential of the properties, assisting in securing permanent financing, marketing funds to investors, structuring fund ownership to align developer and investor incentives, ongoing asset management and compliance oversight, and diversifying individual asset risks through fund composition. Besides the straightforward financial duties, many syndicators are heavily involved in legislative lobbying to retain and expand the tax credit program. They are also all very concerned with internal policing of the industry since one public disaster will affect the whole industry. One syndicator said that compliance itself is relatively easy compared to managing the effects of a highly public development disaster. The industry players are highly concerned with this potential since if a project becomes crime ridden or unlivable, it will negatively impact the reputation of the syndicators and the LIHTC program itself. This is a concern not only for syndicators but also for investors, particularly public corporations concerned about their community reputation.

The large syndicators take a proprietary approach to managing the investments, managing risk through each phase of the process, thus allowing investors to delegate responsibility for detailed monitoring and property oversight. In exchange for these services, investors accept lower returns. Because of their pivotal role in managing risk, investors often end up evaluating the syndicators at least as much as the properties when making investment decisions. In effect, the investor's risk perception is focused less on the real estate, than on the sponsor of the investment since the syndicator is charged with ensuring the continuing flow of tax credits.

Additionally, given a continuous demand for affordable housing, the investors are generally less concerned with adequate demand than they are with competent asset management and oversight of the development process (Goldman). Since the commodification of the investment, investors tend to consider tax credits relative to other investment opportunities, rather than compare individual properties within the tax credit industry.

Relationships of both developers and investors with the syndicators play a key role in transactions, since both parties must select syndicators. As Marc Schnitzer, Director of Related Capital Company explained, when tax credit allocations are announced, a typical developer will receive dozens of calls from syndicators trying to compete over price and service. For many syndicators, securing developers is more difficult than securing investors (Schnitzer). Some developers might select the syndicator offering the highest price even if that syndicator is less experienced and offer fewer services. However, most developers in the business already have an ongoing relationship with syndicators. In fact, many syndicators work with their long-term developers to package a project before a tax credit allocation is even secured. Therefore, when developers select syndicators they often base their selection not only on raw price, but on their general level of comfort and experience working with the syndicator. They tend to seek an assurance that they will receive their equity in a timely and reliable manner through a large syndicator with deep resources rather than risk the chance that a smaller syndicator may not have adequate resources if a development fails. The assurance that larger and more reputable syndicators provide acts as a type of liquidity insurance for developers. By selecting a syndicator with deep resources and a large portfolio of properties, they have the added security that the syndicator will likely stay financially healthy and exist in the long run.

In essence, when selecting a syndicator, developers are buying a brand that they select based off of prior relationships, track record, developer needs, and services. These services include assistance in securing permanent financing (which many syndicators now offer in-house), attracting quality investors, and industry expertise and resources. According to Schnitzer, securing developers is generally considered more difficult than securing investors. Although the developers receive their profits up-front in most cases through fees, most also retain at least a .01 percent general partnership interest for purposes of establishing a legal ownership structure. Although the interest is small, the developer has some incentive not only to complete the project, but also to ensure its long-term financial health and is, therefore, also interested in the asset management capabilities of the syndicator. Syndicators also attempt to maintain longer-term developer interest by setting equity pay-in schedules that occur over several extended periods rather than an up-front lump sum.

Since both developers and investors are evaluating the syndicator more than the real estate, the syndicator's value and reputation are based almost entirely on track record. Although there is no benchmarking index for LIHTC properties or funds, industry players generally have a sense of market averages. As Jeff Goldstein explained, the syndicators take on the responsibility of ensuring that the property realizes the tax credit benefits, and have an incentive to go beyond ensuring compliance to asset management of the property itself. In the early years of the program, investors attempted to mitigate their risk by diversifying across syndicator rather than properties. This had the effect of forcing prices up since smaller syndicators were able to gain more market share by offering higher prices, ensuring that they were on the same level as larger syndicators. However, now investors tend to select one or two syndicators and invest in multiple funds with a single syndicator rather than multiple syndicators.

Although the large syndicators generally compete across similar levels of services, some focus on specific niches. For example, one syndicator may specialize in funds containing predominantly small properties – averaging 20 properties per fund instead of the typical 10 to 15. Others may focus on particular regions of the country. A few states such as California have their own state tax credit program in addition to using the federal LIHTC program. If investors are interested in capturing California state tax credits in addition to federal tax credits, they may seek a fund focusing on California.

Altogether the role of the syndicator heavily influences credit pricing. Both the services explicitly provided and the ongoing relationships between the parties determine the price that developers are willing to accept from syndicators and the price investors will pay for the funds. The introduction of so many complicated factors into the pricing decision, including a number of intangible qualities, suggest that credit pricing is often less of a science than an art.

Section 4.2 Alternative Pricing Model: Syndicators and Credit Pricing

The pivotal role of the syndicator in managing and mitigating traditional real estate risks helps explain the lack of correlation between traditional risk factors and credit pricing. However, one would expect to see a relationship between individual syndicators and credit pricing, reflecting the type and level of services offered, as well as reputation and relationships with investors and developers. Our data offer limited possibilities to explore the impact of different types or quality of syndicators on credit pricing, since all syndicators in our sample tend to be large, established, and for-profit, and offer very comparable levels of service and reputation. As

shown in the table below, there are both similarities and distinct differences across syndicators in our sample by credit price.[13]

Table 4: Mean Credit Price Paid by Syndicator to Developer, by Syndicator

Syndicator	Mean credit price ($)	Number of properties	Number of funds
Syndicator 1	.7331	13	1
Syndicator 2	.7757	11	1
Syndicator 3	.7822	44	4
Syndicator 4	.7988	40	3
Syndicator 5	.7308	11	1
Syndicator 6	.7611	27	4
Syndicator 7	.7596	10	1
Syndicator 8	.7171	7	1
Syndicator 9	.7973	23	2
All syndicators	.7741	186	18

As shown in the table above, mean credit prices by syndicator fall within a fairly narrow range, from $0.7171 to $0.7988 per dollar of credit. This probably reflects a number of factors, including the time over which credits were purchased (1997-2000), the similarity of status across syndicators, as discussed above, and the efficiency and competitiveness of the market for credits, which force syndicators to offer comparable prices to developers. The distribution is skewed slightly left, since the syndicators with more properties within the sample have higher mean prices. In order to determine whether the difference between syndicators actually reflects some value added from the syndicator or whether it merely reflects differences in the types of properties purchased by the syndicator, we estimated a regression of credit price against all the

[13] Although we have kept the syndicator names confidential, they are similar in location, size and service offerings.

real estate and financial characteristics described earlier including dummy variables for each syndicator. In Table 5 below, Regression 4 shows the results of the earlier estimate for comparison purposes, using only financial and operational risk factors. Regression 5 adds dummy variables for each of the syndicators, excluding Syndicator 7 as the base case. Regression 6 shows the identical regression, excluding Syndicator 8 as the base case, to give an idea of the sensitivity of syndicator effects to one another. We have omitted the variables for "Both family and elderly" and "Soft primary mortgage" because of the low number of observations in these categories, and excluded "Market-rate primary loan" because of multicollinearity with "Private primary lender."

Table 5: Estimated Regression of Property Characteristics and Syndicator on Credit Price[14]

Dependent variable: Price per Unit of Credit (price paid to developers)			
Independent variables	**(4)**	**(5)**	**(6)**
Total Development Costs	2.30e-09* (9.56e-10)	2.78-e09* (1.05e-08)	2.78-e09* (1.05e-08)
Total Development Cost/Unit	8.68e-08 (1.64e-07)	7.70e-08 (1.63e-07)	7.70e-08 (1.63e-07)
Moderate Rental Discount	.0120 (.0231)	-.0044 (.0208)	-.0044 (.0208)
Significant Rental Discount	.0143 (.0200)	-.0072 (.0187)	-.0072 (.0187)
Very Significant Rental Discount	.0139 (.0206)	-.0033 (.0191)	-.0033 (.0191)
1998 Credit Allocation	.0170** (.0090)	.0082 (.0097)	.0082 (.0097)
1999 Credit Allocation	.0370* (.0110)	.0316* (.0112)	.0316* (.0112)
2000 Credit Allocation	.0623* (.0119)	.0578* (.0123)	.0578* (.0123)
Tax-exempt Bond	.0463* (.0164)	.0324* (.0164)	.0324* (.0164)
Private Primary	-.0331*	-.0345*	-.0345*

[14] Variables significant at either the 5 percent or ten percent level are shaded. * Indicates significance at the 5 percent level and ** indicates significance at the 10 percent level. Robust standard errors are in parentheses.

Lender	(.0163)	(.0146)	(.0146)
Rural Housing Services Primary Lender	.0220 (.0215)	-.0009 (.0230)	-.0009 (.0230)
State Primary Lender	-.0310** (.0166)	-.0276** (.0161)	-.0276** (.0161)
Soft Primary Loan	.0093 (.0197)		
Market Rate Primary Loan	-.0045 (.0101)		
Debt Coverage Ratio	.0356 (.0236)	.0187 (.0211)	.0187 (.0211)
First Loan to Total Value Ratio	.0138 (.0247)	.0082 (.0231)	.0082 (.0231)
Number of Debt Sources	.0035 (.0039)	.0002 (.0038)	.0002 (.0038)
New Construction	.0040 (.0092)	.0046 (.0086)	.0046 (.0086)
Midwest	.0136 (.0138)	.0134 (.0129)	.0134 (.0129)
South	-.0013 (.0131)	-.0015 (.0126)	-.0015 (.0126)
West	-.0019 (.0131)	-.0039 (.0122)	-.0039 (.0122)
Family Property	.0112 (.0082)	-.0026 (.0076)	-.0026 (.0076)
Family and Senior Property	.0304* (.0141)		
Suburban Location	.0097 (.0094)	.0019 (.0093)	.0019 (.0093)
Non-metro Location	.0026 (.0098)	.0068 (.0113)	.0068 (.0113)
Non-profit Developer Involved	.0003 (.0082)	-.0058 (.0083)	-.0058 (.0083)
Developer's Net Worth	2.19e-13 (5.79e-11)	7.82e-12 (5.36e-11)	7.82e-12 (5.36e-11)
Number of Income Level Set-asides	.0033 (.0042)	.0033 (.0043)	.0033 (.0043)
Syndicator 1		-.0094 (.0222)	-.0194 (.0161)
Syndicator 2		.0120 (.0164)	.0220 (.0201)
Syndicator 3		.0236 (.0181)	.0335* (.0119)
Syndicator 4		.0471* (.0164)	.0571* (.0138)

Syndicator 5		.0125 (.0152)	.0225 (.0146)
Syndicator 6		.0121 (.0195)	.0225** (.0146)
Syndicator 7			.0099 (.0212)
Syndicator 8		-.0099 (.0212)	
Syndicator 9		.0531* (.0185)	.0531* (.0185)
Constant (intercept)	.6563* (.0429)	.6893* (.0381)	.6793* (.0381)
R-squared	.4618	.5561	.5561
N	169	169	169

As shown in the table above, adding syndicator fixed effects to the regression yields the same significant variables as found previously (total development cost, year, use of bonds, primary loans from private and state lenders). Syndicator effects do not substantially alter the magnitude of the coefficients on these variables, except for the years; this is probably due to concentration of properties by syndicator within years, as will be discussed more below. There are clearly some differences in credit price across syndicators, as well as some similarities. The significance of the syndicator effects depends on which syndicator is used as the base case, since several of the syndicators appear to have similar impacts on credit price – such as Syndicators 2, 5, and 6, as well as 1 and 8. However, the coefficients on Syndicator 4 and Syndicator 9 are significantly larger than the others, regardless of the base case used, as shown in Regressions 4 and 5. Regression 5 shows that nearly all syndicators have a significantly higher mean price than Syndicator 8. These relationships are consistent with those shown in Table 4, Mean Price by Syndicator.

Moreover, it is highly possible that we are actually underestimating the effect of syndicator differences by controlling for year of credit allocation. As Table 4 shows, for many of the syndicators, our sample has only one fund, and the properties within that fund are highly

concentrated by year of allocation. Table 6 shows the distribution of properties for each syndicator in our sample.

Table 6: Distribution of Syndicators' Properties by Year[15]

Syndicator	1997	1998	1999	2000
Syndicator 1	.53	.47	.00	.00
Syndicator 2	.00	.00	.73	.27
Syndicator 3	.11	.42	.34	.13
Syndicator 4	.21	.56	.09	.09
Syndicator 5	.22	.67	.00	.00
Syndicator 6	.38	.12	.12	.38
Syndicator 7	.00	.11	.89	.00
Syndicator 8	.71	.14	.00	.00
Syndicator 9	.10	.14	.71	.05
All syndicators	.22	.33	.30	.13

The syndicators for which we do have a more representative sample of properties across funding years – Syndicators 3, 4, 6 and 9 – show the most significant differences. However, we believe that year is indeed a significant determinant of credit pricing, and it is important to control for year. Due to the small sample size and correlation between syndicators and other variables, particularly year, and the similarities between syndicators in our sample, the significance and magnitude of coefficients of each syndicator varies somewhat across regression specifications. Nonetheless, from the results of the regressions and our knowledge of possible underestimates, we can conclude that mean credit pricing does indeed vary by individual syndicators. However, many syndicators may have similar impacts, particularly within our homogenous sample.

Section 5: Effects of Syndicator Fees

5.1 Impacts of Fund Load Charges

Within the role of intermediary, the syndicator also acts to "transform products to add value" (Spulber 7) in order to carve a profitable industry niche for their services. One of the ways in which syndicators add value to investors is through compiling properties into investor funds. Similar to mutual funds, each asset's risks are mitigated when combined with other assets, thereby enhancing the value of each individual asset. Moreover, funds allow individual investors to achieve a relatively high level of diversification in their portfolios, regardless of size. Similar to insurance companies, syndicators "mutualize idiosyncratic risks so that insured persons obtain approximately the same diversification as they would under complete markets" (Freixas and Rochet 15). Syndicators use their internal underwriting guidelines, due diligence procedures, market appraisals, and other risk assessment strategies not only to evaluate the relative strength of individual properties, but also to design funds that offset and complement weaknesses and strengths amongst the properties.

In exchange for compiling the fund, syndicators charge fees or a load. This load is built into the price per unit of tax credit dollar that the investors pay. Developers do not directly pay for the load, although they do indirectly pay for syndicator services through the trade-off between higher loads (i.e. higher services) and lower price per credit. For example, a developer may forego an offer of $0.82 per credit from a small syndicator offering few services and with whom they have never worked, in exchange for $0.80 per credit from a large, reputable syndicator with whom they have had personal contact or experience. Therefore, if a developer agrees to sell a $1.00 of credit for $0.80, and the syndicator charges a load of 10 percent, the

[15] A very small number of properties from years prior to 1997 are excluded from analysis.

syndicator will charge $0.88 to the investor and keep the $0.08 as profit. While the developer tends to focus on offered price as a primary measure of return, the investors focus on the overall fund IRR rather than individual property or even fund price per credit since the IRR incorporates other benefits as well as the true value through discounting.

Due to our data limitations, the syndicators represented in our sample offer similar services and charge similar loads to their investors. Therefore, it is difficult to determine exactly the services offered in exchange for specific fees. In general, however; these loads are composed of several different fees:

- Selling commissions – paid to brokers in exchange for arranging sales of limited partnership interests in the Fund. Generally one to two percent.
- Organizational and offering expenses – services provided by the general partner. Generally one to three percent and amortized over 60 months.
- Acquisition Expenses and Fees – fees related to compiling the funds. Generally one to six percent and amortized over 27.5 years.
- Partnership management fee – managing fund in initial years. Generally one to two percent.
- Asset Management Fee – generally around 0.5 percent of gross invested assets that can be defined as net equity plus debt on all properties.
- Working capital reserve – Generally three to five percent of equity proceeds.

Some syndicators charge additional fees including structuring and advisory fees, construction management, investor servicing, and financing fees. It is difficult to obtain information on the precise nature of these services, particularly since some syndicators break the fees down separately, but keep the overall load within the same range as other syndicators. Reasons for

variability in the loads include the overall size of the syndicator, the year of the offering, and the size of the fund. Funds targeted towards specific investors also may have higher loads. For example, some investors may be willing to pay a higher load for regional funds since they may have non-market objectives such as CRA requirements that will lower their IRR threshold. Syndicators also build a reserve into the load that impacts the overall load but is not captured by the syndicator. This reserve is another way for syndicators to mitigate risk; by adjusting the size of the reserve to the fund, they are able to offset potentially weaker funds with higher reserves but not necessarily higher loads. Table 7 shows a summary of the breakdown of our data in terms of unloaded prices paid by syndicators to developers, subloaded prices (prices with the load but not the reserve), and the loaded prices (total prices) paid by investors to syndicators, as well as percentages charged for both sub-load and reserve requirement. Tables 8 and 9 show charts of the various syndicator prices and fees.

Table 7: Summary of Loaded and Unloaded Credit Prices and Loads, by Syndicator[16]

Syndicator	Unloaded price ($)	Sub-loaded Price ($)	Loaded price ($)	Sub-Load (%)	Reserve (%)	Load (%)
Syndicator 1	.7331	.8278	.8590	12.92	3.16	16.08
Syndicator 2	.7757	.8630	.8938	11.26	3.96	15.22
Syndicator 3	.7822	.8626	.8939	10.31	4.02	14.33
Syndicator 4	.7988	.8734	.9046	9.37	3.91	13.28
Syndicator 5	.7308	.8063	.8404	10.33	4.67	15.00
Syndicator 6	.7611	.8393	.8701	10.30	4.05	14.35
Syndicator 7	.7596	.8394	.8583	10.5	2.5	13.00
Syndicator 8	.7171	.7841	.8284	9.35	6.17	15.52
Syndicator 9	.7973	.8745	.9032	9.69	3.59	13.28
All Syndicators	.7741	.8534	.8838	10.24	3.92	14.17

[16] Unloaded price is the price paid by syndicators to developers. Sub-loaded price adds the amount of load, fee for services provided. Loaded price includes both sub-load and the reserve requirement.

Table 8: Syndicator Prices

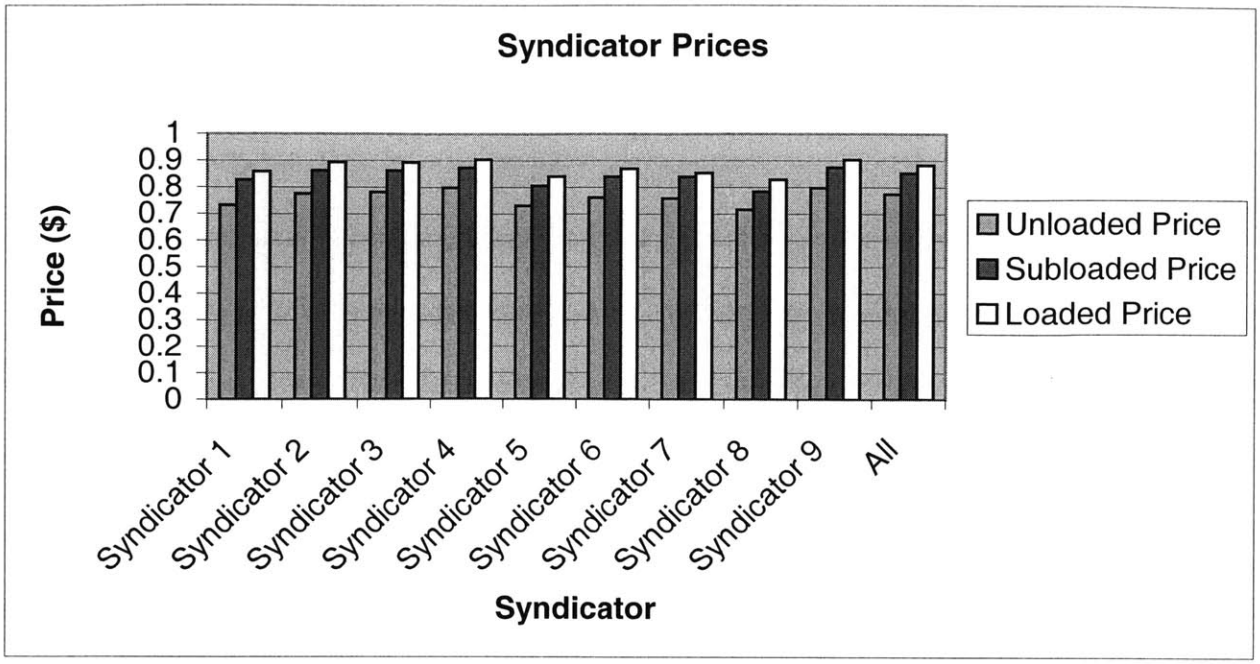
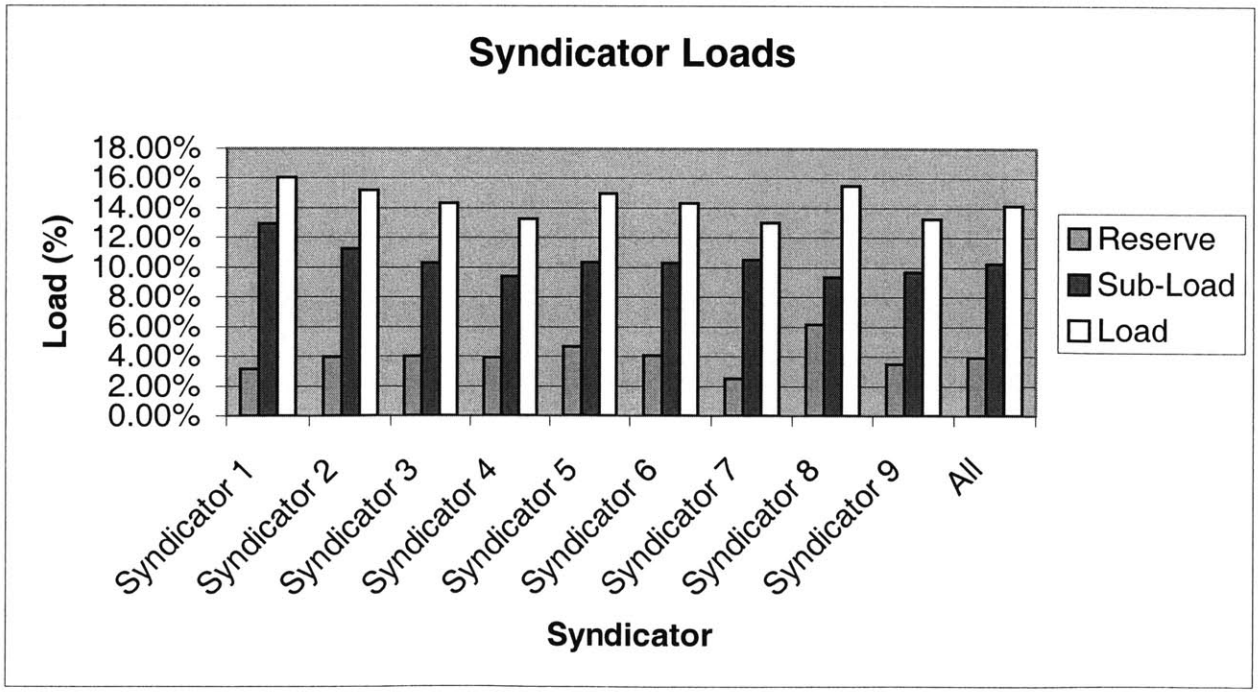


Table 9: Syndicator Loads



Although loads clearly impact prices, differences in loads alone cannot explain the pricing differences observed in the table above. High loads are not necessarily associated with lower unloaded price or higher loaded price (for instance, Syndicator 1 has the largest load but quite low prices, loaded and unloaded). We would expect the larger syndicators to be able to command higher loads in the marketplace due to their reputation, resources, service offerings, and general market power which should act to lower perceived risk by investors. However, our sample does not bear out this expectation, perhaps due to the disproportionate number of funds represented by each syndicator in our sample.

Reserve requirements vary considerably across syndicators, although the connection between syndicator and reserve is not immediately apparent since a smaller reserve could either indicate syndicators feel the fund is less risky and, therefore, requires less cushion or that it is more risky and reserve limits are lowered in order to reduce the price of the investment to make it more attractive to investors. There is no correlation within our sample between size of sub-load and size of reserve (correlation of sub-load and reserve is 0.07). Since syndicators tend to work closely with repeat investors and developers, they may adapt their reserve and loads to meet particular investment objectives (for instance, more conservative investors may prefer higher reserves). Additionally, syndicators often report their published load in the offering documents, but later adjust it downward to achieve specific IRRs or investor objectives (Floreani).

Given that syndicators charge fees for the services they provide and that these services and their attendant fees are likely to vary across syndicators, we would expect the size of the loads charged to have an impact on credit prices. The loads should impact fees in two ways; developers should be willing to accept a lower price per unit of credit in exchange for a high

level of services and loads, while investors should be willing to pay more per unit of credit if the cost includes more services. In this hypothesis, we have defined services very broadly to encompass not only specific and quantifiable services, but also general reputation, level of comfort, flexibility on negotiated terms, and other intangible "services" offered to both developers and investors.

To test this hypothesis, we estimated several regressions, the results of which are shown below in Table 8. In Regression 7, we estimated price per unit of credit paid to developers by syndicators, including loads in addition to the independent variables used in previous models. The load itself can be separated into two components: the sub-load, essentially the fee taken by syndicators as compensation for the services they provide, and the reserve requirement, set aside for contingency use for the properties. While the reserve does not actually accrue to the syndicator, it is considered part of the total load. Regression 8 shows the impact of controlling for sub-load and reserve separately.

Table 10: Estimated Regression of Syndicator and Load Components on Unloaded Credit Price[17]

Dependent Variable: Unloaded Price per Unit of Credit		
Independent Variables	**(7)**	**(8)**
Total Development Costs	2.68e-09* (1.09e-09)	2.69e-09* (1.10e-09)
Total Development Cost/Unit	6.31e-08 (1.55e-07)	6.58e-08 (1.54e-07)
Moderate Rental Discount	-.0071 (.0202)	-.0064 (.0211)
Significant Rental Discount	-.0145 (.0188)	-.0136 (.0199)
Very Significant Rental Discount	-.0110 (.0193)	-.0102 (.0202)
1998 Credit Allocation	.0116	.0117

[17] Variables significant at the five or ten percent level are shaded. * Indicates significance at the 5 percent level and ** indicates significance at the 10 percent level. Robust standard errors are in parentheses.

	(.0099)	(.0099)
1999 Credit Allocation	.0172 (.0131)	.0179 (.0142)
2000 Credit Allocation	.0356* (.0153)	.0366* (.0166)
Tax-Exempt Bond	.0302* (.0156)	.0308* (.0160)
Private Primary Lender	-.0307* (.0142)	-.0308* (.0143)
Rural Housing Services Primary Lender	.0004 (.0224)	.0009 (.0228)
State Primary Lender	-.0274** (.0155)	-.0273** (.0156)
Debt Coverage Ratio	.0194 (.0201)	.0188 (.0209)
First Loan to Value Ratio	.0073 (.0219)	.0064 (.0232)
Number of Debt Sources	-.0007 (.0037)	-.0009 (.0038)
New Development	.0036 (.0085)	.0034 (.0084)
Midwest	.0154 (.0125)	.0155 (.0126)
South	.0005 (.0122)	.0009 (.0125)
West	-.0012 (.0120)	-.0008 (.0123)
Family Property	.0017 (.0074)	.0016 (.0074)
Suburban Location	.0056 (.0091)	.0056 (.0091)
Non-metro Location	.0089 (.0110)	.0091 (.0109)
Non-profit developer involved	-.0100 (.0081)	-.0104 (.0079)
Developer's Net Worth	2.16e-11 (5.82e-11)	1.99e-11 (5.94e-11)
Number of Set Asides	.0033 (.0042)	.0034 (.0043)
Syndicator 1	.0304 (.0258)	.0300 (.0260)
Syndicator 2	.0447** (.0235)	.0474* (.0242)
Syndicator 3	.0373** (.0203)	.0414** (.0250)
Syndicator 4	.0445*	.0493**

	(.0160)	(.0260)
Syndicator 5	.0221 (.0166)	.0277 (.0271)
Syndicator 6	.0305 (.0222)	.0343 (.0265)
Syndicator 7		
Syndicator 8	.0097 (0249)	.0205 (.0493)
Syndicator 9	.0560* (.0187)	.0635* (.0225)
Load	-.9888* (.4515)	
Sub_load		-.8953 (.6609)
Reserve		-1.242 (1.018)
Constant (intercept)	.8301* (.0710)	.8264* (.0751)
R-squared	.5738	.5740
N	169	169

Coefficients on several of the syndicators show up as having significant impacts on both the unloaded credit prices, as well as the variables previously determined to have significant impacts on pricing. Load has a significant negative impact on unloaded credit price, confirming our hypothesis that developers are willing to accept a lower price in exchange for more services. However, this finding is complicated by the questionable assertion that higher loads translate into higher services for the developers. Most developers we spoke with felt that syndicators offer very comparable but limited services and, therefore, they did not select the syndicator primarily on service offerings. Similar to investors, they tend to select syndicators based on price offered and market reputation.

Additionally, negotiations between developers and syndicators are not limited to price and specific service offerings. Other negotiable items can include pay-in schedules, reduced operating deficit guarantees, forgiveness of prior debt to the syndicator, promises for future

prices, and specific services in exchange for developer loyalty (Floreani). Therefore, these elements of negotiation between syndicators and developers – on which our dataset has no measurements – may also determine credit price or impact developers' choice of syndicator, despite price considerations. It is interesting to note that the syndicator differences are much less pronounced when controlling for sub-load and reserve separately than using the combined load effect. There is more variation across syndicators by each separate component than by overall load, due in part to the lack of correlation between the two. It seems more likely that developers would be sensitive to the overall price than to the individual components of the load.

Table 11 shows the effect of loads on loaded price per unit of credit, paid by investors to syndicators. In order to identify the effect of the load itself, we controlled for the underlying credit price paid by syndicators to purchase the credits, as well as the usual property and financial characteristics. From the investor standpoint, we would expect higher loads to be associated with higher loaded prices, since investors should be willing to pay higher prices in exchange for more services, shown by higher loads. Conversely, the syndicator should be able to offer the investor lower prices if they provide fewer services and a correspondingly lower load. Regression 9 shows the impact on loaded credit price of syndicator, sub-load and reserve, controlling for unloaded credit price, as well as property and financial characteristics. Regression 10 breaks down the impact of sub-load reserve separately, while Regression 11 offers a comparison using a different syndicator as base case.

Table 11: Estimated Regression of Syndicator and Load Components on Loaded Credit Price[18]

Dependent variable: Loaded price per unit of credit			
Independent variables	**(9)**	**(10)**	**(11)**
Total Development Cost	-4.15e-10 (2.62e-10)	-4.28e-10** (2.61e-10)	-4.28e-10** (2.61e-10)
Total Development Cost/Unit	7.17e-08 (5.38e-08)	6.73e-08 (5.45e-08)	6.73e-08 (5.45e-08)
Moderate Rental Discount	.0141* (.0060)	.0130* (.0060)	.0130* (.0060)
Significant Rental Discount	.0079 (.0062)	.0065 (.0063)	.0065 (.0063)
Very Significant Rental Discount	.0123* (.0061)	.0110** (.0060)	.0110** (.0060)
1998 Credit Allocation	.0066* (.0027)	.0064* (.0027)	.0064* (.0027)
1999 Credit Allocation	.0238* (.0042)	.0226* (.0044)	.0226* (.0044)
2000 Credit Allocation	.0393* (.0060)	.0375* (.0064)	.0375* (.0064)
Tax-Exempt Bond	.0133* (.0047)	.0123* (.0047)	.0123* (.0047)
Private Primary Lender	.0108* (.0037)	.0111* (.0037)	.0111* (.0037)
Rural Housing Services Primary Lender	.0018* (.0054)	.0110* (.0053)	.0110* (.0053)
State Primary Lender	.0056 (.0034)	.0055 (.0034)	.0055 (.0034)
Debt Coverage Ratio	-.0036 (.0049)	-.0025 (.0050)	-.0025 (.0050)
First Loan to Value Ratio	.0062 (.0076)	.0076 (.0076)	.0076 (.0076)
Number of Debt Sources	.0017 (.0013)	.0020 (.0014)	.0020 (.0014)
New Development	.0034 (.0030)	.0036 (.0031)	.0036 (.0031)
Midwest	-.0100* (.0046)	-.0102* (.0045)	-.0102* (.0045)
South	-.0053 (.0049)	-.0060 (.0050)	-.0060 (.0050)
West	-.0091* (.0045)	-.0097* (.0045)	-.0097* (.0045)
Family Property	.0019	.0022	.0022

[18] Variables significant at either five or ten percent level are shaded. * Indicates significance at the 5 percent level and ** indicates significance at the 10 percent level. Robust standard errors are in parentheses.

	(.0027)	(.0026)	(.0026)
Suburban Location	-.0009 (.0030)	-.0009 (.0029)	-.0009 (.0029)
Non-metro Location	-.0072* (.0029)	-.0075* (.0029)	-.0075* (.0029)
Non-profit developer involved	-.0062* (.0030)	-.0055** (.0031)	-.0055** (.0031)
Developer's Net Worth	1.21e-11 (2.10e-11)	-9.31e-12 (2.07e-11)	-9.31e-12 (2.07e-11)
Number of Set Asides	-.0009 (.0012)	-.0011 (.0012)	-.0011 (.0012)
Syndicator 1	.01423* (.0069)	.0149* (.0068)	.0315* (.0132)
Syndicator 2	.0250* (.0070)	.0203* (.0075)	.0369* (.0112)
Syndicator 3	.0351* (.0058)	.0282* (.0068)	.0448* (.0094)
Syndicator 4	.0475* (.0065)	.0394* (.0085)	.0560* (.0084)
Syndicator 5	-.0026 (.0066)	-.0119 (.0089)	.0047 (.0080)
Syndicator 6	.0084 (.0072)	.0019 (.0081)	.0184* (.0093)
Syndicator 7			.0166 (.0142)
Syndicator 8	.0015 (.0075)	-.0166 (.0142)	
Syndicator 9	.0358* (.0061)	.0299* (.0074)	.0465* (.0094)
Load	-.2435** (.1495)		
Sub_load		-.3988* (.1806)	-.3988* (.1806)
Reserve		.1805 (.3030)	.1805 (.3030)
Unloaded price per unit of credit	.1243* (.0253)	.1253* (.0243)	.1253* (.0243)
Constant (intercept)	.7687* (.0317)	.7742* (.0307)	.7742* (.0307)
R-squared	.8901	.8918	.8918
N	169	169	169

As seen above, both total load and sub-load have significant negative impacts on loaded price per credit, although the coefficient on sub-load is much smaller than in the estimated

impact of sub-load on unloaded price, suggesting that while developers are willing to accept a lower price for more services, investors are not willing to pay more to obtain those services. This perhaps indicates that most of the pricing burden of loads is borne by developers, so that syndicators do not need to raise their price to investors to recoup the costs.

This theory is consistent with the likelihood of adverse selection amongst LIHTC developers. Since the competition for the credits is high, allocating agencies tend to spread the credits among numerous developers, rather than in proportion to the size of the developers. Therefore, the nation's largest and most experienced developers tend to have a limited presence in the tax credit field. Many of the developers represented in our sample may be relatively small, geographically isolated, and less experienced than the typical multifamily developer. In order to sell their credits, these smaller investors must go through syndicators. Unlike investors who have a myriad of options both within tax credits and in other investments, developers are relatively captive to the market prices and service offerings of syndicators. Therefore, one hypothesis is that developers indirectly bear much of the cost of the load and are less price-sensitive than investors (or more constrained in their choice of syndicator).

The results of the regression appear to suggest that high loads are associated with low loaded prices. This appears counter to the expectation that higher services and higher loads should reduce risk and result in higher prices. In other words, the market does not appear to be efficiently pricing the risk mitigation services of the syndicators against the expected risk of the investment. Although some of this puzzle can be explained by data limitations as described earlier, we suspect that the counterintuitive findings relate to the complicated manner in which investor returns are measured; namely IRR. From our interviews, it appears that investors base their investment decision on three primary characteristics: meeting an IRR threshold, loads

within reasonable market ranges, and other intangible qualities such as comfort level and experience with the syndicator. In conversations with industry players, many were not surprised by these findings and felt that it was entirely plausible to find high loads associated with low prices or alternate correlations. Even when controlling for the effect of loads on prices, there are statistically significant differences in loaded prices across syndicators, possibly as a result of the relationship or timing factors described above which are not captured by our data.

Since investors base their investment decisions primarily on IRR, they tend to disregard price per credit as a metric in itself. As a result, the impact of price per credit tends to get diffused through the overall IRR calculation. Syndicators also likely prefer that investors evaluate IRR over credit price since it gives syndicators more control and flexibility to adjust the many factors comprising IRR in order to meet an investor's objective. In other words, syndicators have a relatively small range of prices they offer developers due to market competition and their own need for profitable spreads. However, they can adjust the IRR through other aspects such as timing, load adjustments, and estimated real estate benefits, in order to achieve a specified IRR without changing the price paid to the developer.

Although investors pay relatively little attention to capital structure, they can be sensitive to the investment effects of the structure. For example, 4 percent credits provide a higher percentage of the IRR benefits through losses rather than credits. Benefits accrued through losses tend to be less desirable since they are more dependent on the real estate performance and, therefore, less predictable than credits. Corporations sensitive to reporting losses on earnings statements, even accounting rather than financial losses, will seek more of their benefits through credits than losses. Other corporations are unable to use credits temporarily due to their tax status and may seek investments that either allow them to meet non-market objectives or that

may provide other real estate benefits through losses and resale value. Others seek out the least risky projects that in some cases can result from heavy use of public subsidies. Since the risk of foreclosure is low for soft and concessionary loans, investors tend to view these favorably. However, the more soft sources, the more difficult the project may be to manage and the perceived risk may be higher. Therefore, while we would expect the unloaded price per credit to have some correlation to the load for the developer, the seemingly counterintuitive results of load on investor price may be the result of omitted variable bias, if other components of investor IRR unmeasured in our sample date are correlated with both loads and credit price.

Section 6: Implications and Future Research

6.1 Financial and Policy Implications

Because the successful production of affordable housing is dependent on investors continuing to perceive the LIHTC as an attractive investment, reasonably predictive and transparent risk/return profiles of the investments are important. As historical data shows, as investors have become more comfortable with and gained more information about the program, perceived risks and thus yields have declined. The decreasing risk perception has resulted in more competition, driving equity prices up and loads down, and ensuring that more equity goes directly to developments. Therefore, the industry's continued success is dependent on increasingly better ways to monitor and standardize risk assessment. In other financial industries, particularly those involving fund investments, benchmarking indices and outside rating agencies have allowed investors to more accurately compare risk and price it accordingly. We would recommend a similar approach in the LIHTC industry. Agencies that currently monitor developments for compliance could also more explicitly capture the financial structure and health of the developments so as to better predict financially successful projects that will ultimately improve all the program's objectives.

In addition to better industry indexing standards, we would urge the investment community to consider credit prices more explicitly in their investment decisions. While the price can be "backed out" from IRR calculations, as we have seen from our data, this process tends to be more of a black box than a reflection of an efficiently operating market. Prices should reflect the anticipated risk and return structure of both the developers and investors. Loaded prices should reflect the value that developers and investors place on syndicator services. Although the IRR is a useful measure for LIHTC investments since it measures benefits beyond

the credits and discounts the benefits stream, it is also highly sensitive and difficult to discern the true risk and value of each of its components. Ideally, the price per credit should reflect the true value of the credit; a value that should be looked at both separately and in relation to other LIHTC benefits.

Changes in the legislative direction of the LIHTC will also continue to change the industry and investment objectives. Syndicators have told us with the declining yields, some investors are starting to enact their threshold. Since the allocation increase in 2000, some investors are also waiting on the sidelines in anticipation of lower prices once competition eases. The full result of this increased allocation is yet to be determined. Some predict that less desirable developments will be funded, while others argue that higher quality developments should result since allocating agencies will no longer be as restricted in only selecting projects that are located in the most distressed areas. Clearly, the comfort level and broad legislative support for the LIHTC program has left a significant impact on all housing programs. President Bush has proposed in his 2001-2002 budget creating a Single Family Homeownership Tax Credit that would operate similarly to the LIHTC by providing credits to developers of communities of single-family homes in distressed areas. The investor community response to the proposal has been positive, and if implemented the program will likely go through less initial uncertainty and underuse than the LIHTC in its early years.

Finally, because of the diffuse structure of the tax credit, there are few large-scale and consolidated sources of information on LIHTC developments, particularly the financial characteristics of these developments. Further research in this area would be greatly aided by indices and more easily accessible financial data on developments.

6.2 Directions for Future Research

This study explored the impacts of various property and financial risk characteristics, as well as syndicator fixed effects, on credit pricing in order to estimate the sensitivity of investors and developers to risk. We believe that this general area affords a number of potentially interesting topics for future research. It appears that price is not the best estimate of investor preferences; a similar type of study focusing on IRR as the unit of measurement would provide better insight into how investors perceive risk, and how sensitive they are to changes in perceived risk. Also, our sample provided a limited range of syndicator types. Thus the types of properties in the funds are of similar desirability and display similar characteristics, particularly in the level of difficulty and risk. A comparison between different types of syndicators, including non-profit syndicators such as the National Equity Fund and single-investor funds like those held by Fannie Mae, might reveal wider differences in the types of underlying assets and the relative levels of risk of tax credit investment. Similarly, a study of how funds are packaged might highlight some of the investor preferences that syndicators aim to meet; for instance, single state funds to meet CRA requirements, and diversified funds that minimize risk compared to more restricted funds that possibly aim for higher returns.

Finally, the general conclusions of this study offer some possible areas of policy research. In particular, what is the connection between funds (or properties) that meet investor returns and properties that fulfill their mission of providing well-run and desirable affordable housing to residents? In short, are the investments meeting both the public and private goals? Additionally, our data give information on planned properties; it would be worthwhile to assess past performance to see whether expected returns materialize, and whether the indicated level of risk truly predicts fund performance, and how LIHTC returns compare to similar fund investments.

Conclusion

Tax credit pricing is a complicated process and gives a somewhat oblique measure of underlying risks. While traditional real estate characteristics play some role in determining price, more important components include the role played by syndicators through their relationships with developers and investors, as well as the relative negotiation power of the parties and the presence of alternative options. The tax credit market displays typical characteristics that invite the presence of intermediaries, including information asymmetries, need for specialized knowledge, and high transactions costs. From our data analysis, it appears that developers have less power in the price negotiation than investors, possibly due to their restricted options; developers must select a syndicator through which to sell their credits, while investors may choose between syndicators with more information and also have alternative investment options, including the option not to invest at all.

Our estimated model, while highlighting some of the components of pricing, is not able to capture many of the subtler elements that determine price, such as timing of the investment or the intangible qualities of the relationships and comfort level, as well as non-market objectives of the investors. Additionally, it is apparent that IRR would be a more effective means of gauging investor risk perceptions than credit price, due to the complicated calculation of IRR. From the investment perspective, tax credits are more of a commodity purchase than a real estate investment; our analysis reveals the gulf between investors and the underlying property. Investors may know very little about the properties in the funds that they purchase, and for their returns, the level of their knowledge is nearly irrelevant.

The objective of the tax credit program – to provide equity for affordable housing by tapping into private capital markets – appears to be met through the mechanisms established. To

date, an increasing level of competition suggests that investors are receiving their desired returns, and certainly the program has resulted in the production of low-income housing that otherwise would likely not have been built. Yet although the goal is to align public and private interests, there appears to be a vast gap in knowledge between the two sides. Just as investors know very little about the properties that have been constructed using their capital, residents know nothing about the investors who own their homes. Similarly, no one public agency or organization tracks both the financial performance and the housing product. In fact, the industry is largely self-policing, managed by the intermediaries that mediate interests and are most deeply involved throughout the process. Syndicators seem to play much the same role that Alfred Chandler identified for corporate management: the "visible hand" that prods markets into smooth functioning. As long as all parties are pleased with the results – investors get their desired returns, developers are able to construct properties, and residents and communities are pleased with the final product – the system seems prepared to continue operating in essentially the same way. To this extent, then, the program would seem to be working just as its designers intended.

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Appendix A: Data Fields

General characteristics
Property ID
Fund name
Property name
Total units
Development type: New, rehab, historic
City
State
Metropolitan area (where noted)
Region: See Appendix B
Tenant type: Family; elderly; both
Location: Urban, suburban, non-metro
Has property amenities
Developer Characteristics
For-profit/Non-profit developer or both
Developer net worth
Developer liquidity
Funding Sources (Repeated for four sources)
Lender status (private, public, non-profit)
Loan status: Soft, hard, grant, bond
Market or concessionary interest rate
Amount of loan/grant
Amortization term
Loan term
Interest rate

Other funds
Tax Exempt Bonds
Rental support: Section 8, RHS, other
Rent and Market (four set-asides)
Percent of units set aside
Income level of set aside
Low end of rental discount compared to market
High end of rental discount compared to market
Concerns about neighborhood (crime, etc)
Debt coverage ratio
Tax Credit details
Tax credit allocation year
Use of tax-exempt bonds
Price per unit of credit
Federal credits allocated
Credits to investor partnership
Net equity from tax credit investors
State credits allocated
Total debt dollars
Total grant dollars
Total capitalization
Total development cost per unit

Appendix B: Definitions of Regions

Northeast	Midwest	South	West
Connecticut	Illinois	Alabama	Alaska
Maine	Indiana	Arkansas	Arizona
Massachusetts	Iowa	District of Columbia	California
New Hampshire	Kansas	Delaware	Colorado
New Jersey	Michigan	Florida	Hawaii
New York	Minnesota	Georgia	Idaho
Pennsylvania	Missouri	Kentucky	Montana
Rhode Island	Nebraska	Louisiana	Nevada
Vermont	North Dakota	Maryland	New Mexico
	Ohio	Mississippi	Oregon
	South Dakota	North Carolina	Utah
	Wisconsin	Oklahoma	Washington
		South Carolina	Wyoming
		Tennessee	
		Texas	
		Virginia	
		West Virginia	