

DO FIRMS PAY FOR EARNINGS CLASSIFICATION?
EFFECTS OF FINANCIAL REPORTING ON
THE MARKET FOR HOUSING TAX CREDITS

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ABSTRACT

LESLIE ROBINSON: Do Firms Pay for Earnings Classification?
Effects of Financial Reporting on the Market for Housing Tax Credits
(Under the direction of Doug Shackelford)

The purpose of this study is to examine the relative importance to managers of pre-tax and after-tax earnings. I exploit features of investments in housing tax credits and GAAP accounting for those investments. When managers purchase tax credits, accounting rules reduce book earnings for the cost of the tax credits through either i) a pre-tax loss, or ii) a tax expense. Identically priced tax credit investments result in the same net increase to after-tax earnings regardless of the accounting method used. By analyzing the market price of tax credits using a confidential database, I find a premium on tax credits that reduce book earnings through tax expense, thereby avoiding a reduction to pre-tax earnings. This result suggests that managers are willing to sacrifice after-tax earnings, by paying a higher tax credit price, to avoid reductions to pre-tax earnings. On average, I estimate that managers reduce after-tax earnings by \$1 to avoid a reduction to pre-tax earnings of \$13. This is the first study to my knowledge to suggest that some firm managers place more importance on pre-tax earnings than after-tax earnings.

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CHAPTER 1

INTRODUCTION¹

The purpose of this study is to examine the relative importance to managers of pre-tax and after-tax earnings. Using a simple example to frame the research question, I examine whether managers prefer to report \$700 of after-tax earnings as either i) \$900 of pre-tax earnings and income tax expense of \$200, or as ii) \$1,000 of pre-tax earnings and tax expense of \$300. Accounting method ii) shifts a \$100 reduction in pre-tax earnings down the income statement, reporting the item instead as a tax expense. Using a confidential database, I analyze the market price of low-income housing tax credits (LIHTCs) and find that a higher LIHTC price is associated with investments that qualify for accounting method ii). This result suggests that managers are willing to sacrifice after-tax earnings, by paying a higher LIHTC price, to avoid a reduction to pre-tax earnings. On average, I estimate this behavior has the effect of exchanging \$1 of cash (i.e., after-tax earnings) for \$13 of pre-tax earnings.

The contribution of this study is the finding that managers appear willing to incur cash costs to shift a pre-tax expense down the income statement to tax expense. McVay (2006) finds opportunistic downward shifting of core expenses to special items on the income statement. While McVay (2006) validates classification shifting on income statements as a valid form of earnings management, it assumes that classification shifting bears a low cost relative to other forms of earnings management. Therefore, McVay (2006)

¹ Throughout this study, any reference to “investor” implies tax credit investor, or end-user of the purchased tax benefits. Reference to “after-tax earnings” means bottom-line net income on the income statement. Reference to “pre-tax earnings” means pre-tax financial accounting income, before items reported net-of- tax, and income tax expense on the income statement.

does not address the question of whether managers are willing to incur cash costs to move expenses down the income statement. Engel et. al. (1999) provides small sample evidence that firms incur costs to shift the balance sheet classification of a security from debt to equity. While Engel et. al. (1999) provides evidence suggesting firms incur costs to alter their debt-to-equity ratio, it does not shed light on firms' willingness to pay for earnings classification. Furthermore, as opposed to leverage, a widely accepted relatively well-understood performance measure, the conjecture and finding that managers prefer to report higher pre-tax earnings, when after-tax earnings are the same, raises questions for future research about the implications of pre-tax and after-tax components of earnings on valuation and perceptions of firm performance.

Extant accounting literature provides at least four reasons why managers would care about reporting higher pre-tax earnings even if after-tax earnings are the same. First, Gleason and Mills (2006) suggests that the stock market grants a relatively higher (lower) reward to firms meeting after-tax earnings forecasts by reporting higher pre-tax earnings (lower tax expense). Second, Lev and Thiagarajan (1993) finds evidence consistent with analysts viewing effective tax rate (ETR) related changes in after-tax earnings as transitory. Holding after-tax earnings constant, reporting higher (lower) pre-tax earnings results in lower (higher) ETR related changes in after-tax earnings. Third, evidence from prior research suggests that users of financial statements view earnings components as more (less) permanent the higher (lower) they appear on the income statement (McVay 2006; Lipe 1986; Fairfield et. al 1996). Therefore, pushing expenses down the income statement should positively alter perceptions of performance. Finally, Francis et. al. (2003) finds that earnings before interest, taxes, depreciation, and amortization (EBITDA) have incremental explanatory power over after-tax

earnings in explaining stock returns.² While it is difficult to place a dollar value on any of the potential benefits to reporting higher pre-tax earnings, I estimate how much firms are willing to pay for the desired classification.

There is also ample anecdotal evidence to suggest that managers are sensitive to the financial reporting effects of LIHTC investments. For example, Buzz Roberts, Vice President for Policy, Local Initiatives Support Corporation, made the following statement in a memorandum to the Millennial Housing Commission dated April 16, 2001.³

“Publicly-held corporations, which comprise almost the entire [LIHTC] market today, express a clear dislike for tax deductions. Tax deductions show up on their books as losses, which reduce earnings. It is not practical for them to have to explain to their stockholders that these losses are actually good. Tax credits pose no such problem.”

Industry participants claim LIHTC investments that qualify for accounting method ii) appeal to investors because the losses do not have to be recognized against pre-tax income on corporate financial statements (www.housingfinance.com). There is also anecdotal evidence that analysts place relatively more weight on pre-tax earnings. A former investment banker, now sell-side analyst with Merrill Lynch, Mike J. Linenberg states, “In investment banking, we were most interested in the line items below earnings before interest and taxes (EBIT) or operating income. There we would focus on transactions that were tax efficient and would help reduce interest expense...As equity analysts, we principally focus above EBIT.”⁴

² The use of EBITDA in stock valuation is relevant here because “pre-tax earnings,” for purposes of this study, is comparable to any earnings measure that excludes income tax expense.

³ The Local Initiatives Support Corporation is the parent company of the National Equity Fund, a sponsor of LIHTC investments. Congress charges the Millennial Housing Commission with examining methods for increasing the role of the private sector in providing affordable housing in the United States. The memorandum is at <http://govinfo.library.unt.edu/mhc/focus.html>.

⁴ Wall Street Research Online, Sell-Side Forum, March 7, 2002.

Therefore, even if the net income of two firms is the same, analysts distinguish between pre-tax and after-tax earnings components and are likely to value them differently.

This study concludes with an additional analysis that further supports the finding that higher LIHTC prices are associated with accounting benefits. Specifically, I examine investor heterogeneity in the coordination of cash flow and accounting earnings. I find evidence to suggest that firm managers are less (more) willing to reduce the present value of their accounting earnings to increase the present value of their cash flow when they do (not) pay for higher pre-tax earnings. There are two implications of this result. First, this further supports the notion that managers paying for higher pre-tax earnings focus on the accounting earnings impact of the investment rather than cash flow. Specifically, these managers do not appear to value additional tax savings when accounting earnings (or the accounting effective tax rate) do not reflect this additional value. This is consistent with anecdotal evidence that corporate tax directors value permanent, rather than temporary, differences between accounting earnings and taxable income because temporary differences do not lower the accounting ETR (Neubig 2006). Second, this finding suggests that some firm managers value cash flow from tax savings more than accounting earnings, consistent with the finding in Guenther, Maydew and Nutter (1997). Overall, firm managers in this setting are diverse in their coordination of cash flow and book earnings.

I organize the remainder of the paper as follows: Section 2 provides relevant institutional details and develops hypotheses. Section 3 describes the empirical analysis and main results. Section 4 analyzes the economic significance of the empirical results. Section 5 presents additional analysis and Section 6 concludes.

CHAPTER 2

BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 LIHTC Accounting

An investor purchases LIHTCs by committing equity capital as a limited partner to a qualified real estate project.⁵ The investor forgoes traditional claims to cash flow and appreciation from the underlying real estate, in exchange for the right to receive tax benefits. Tax benefits received are the LIHTCs (i.e., tax credits) and operating losses generated by the underlying real estate (i.e., tax deductions), generally over a period of 10 years.⁶ Tax credits and tax deductions both generate cash flow through tax savings for the investor. However, these tax benefits have different implications for financial accounting earnings.

Tax savings from tax credits provide a dollar-for-dollar decrease to federal income tax expense. When an investor buys 100 tax credits, he is effectively buying the right to deduct \$100 from the tax liability reported on his firm's federal tax return. This offset converts the 100 tax credits into \$100 of cash by reducing cash taxes paid to the Internal Revenue Service. Thus, tax credits increase after-tax earnings by \$100 with no effect on pre-tax earnings. Tax savings from tax deductions provide a decrease to federal income tax expense by an amount equal to the tax deduction times (1-marginal tax rate). While tax savings from tax deductions reduce tax expense, the deduction amount reduces pre-tax

⁵ Limited partnerships facilitate the buying and selling of tax benefits. See Wolfson (1985) for a discussion of the benefits of limited partnership arrangements commonly used in tax-advantaged investments.

⁶ Affordable rental housing projects generate operating losses because interest and depreciation deductions exceed reduced rental income.

earnings. The investor records an investment on the balance sheet equal to the capital contribution, and reduces the carrying amount through decreases to pre-tax earnings as he receives his allocable share of partnership operating losses. Total tax deductions from operating losses reflected in pre-tax earnings over the life of the investment is equal to the amount of equity capital contributed (i.e., the cost of the LIHTCs).

This accounting treatment has the effect of reporting the revenue from the investment as a reduction to tax expense (i.e., from both the tax credits and tax deductions), while the cost of the investment is reported as a reduction to pre-tax earnings. Consider two firms with \$1,000 in sales revenue and a marginal tax rate of 35 percent. Firm N buys no LIHTCs, while firm P buys 100 LIHTCs for \$80. A simple income statement appears as follows:

	N	P	
Sales	1,000	1,000	
LIHTC losses	<u>n/a</u>	<u>(80)</u>	cost=capital contribution of \$80
Pre-tax earnings (a)	1,000	920	
Tax expense (b)	<u>350</u>	<u>222</u>	revenue=tax benefits of 100+80(1-.35)=\$128
After-tax earnings	<u>650</u>	<u>698</u>	
Effective Tax Rate (b/a)	.35	.24	

EITF 94-1, Accounting for Tax Benefits from Investments in Affordable Housing Projects, sets forth a criterion that, if met, changes the accounting treatment of the tax deductions. Specifically, if “the availability of the tax credits allocable to the investor is guaranteed,” investors report tax deductions as increases to tax expense, rather than as reductions to pre-tax earnings. Section 2.3 discusses the implications of “guarantees.” This accounting treatment has the effect of reporting *net* revenue from the investment as a reduction to tax expense, with no reduction to pre-tax earnings. Now compare N and P to firm A that buys 100 *guaranteed* LIHTCs for \$80.

	N	P	A	
Sales	1,000	1,000	1,000	
LIHTC losses	<u>n/a</u>	<u>(80)</u>	<u>(0)</u>	
Pre-tax earnings (a)	1,000	920	1,000	
Tax expense (b)	<u>350</u>	<u>222</u>	<u>302</u>	net revenue=128-80=\$48
After-tax earnings	<u>650</u>	<u>698</u>	<u>698</u>	
Effective Tax Rate (b/a)	.35	.24	.30	

I herein refer to the accounting method used by firms P and A as pre-tax and after-tax accounting, respectively.⁷

Accounting literature provides at least four reasons why corporations should prefer the income statement of A to that of P, thereby making the market for LIHTCs a useful setting to study this preference. The first two come from literature on the interaction between tax accounting and reporting and valuation. First, Gleason and Mills (2006) provide evidence that the stock market discounts the reward to meeting or beating after-tax earnings forecasts when the company achieves the target using a decrease to tax expense. This finding suggests that P's reward for meeting an earnings target of \$698, for example, would be discounted more than A's reward for meeting the same earnings target because a greater percentage of P's increase to after-tax earnings was achieved through a decrease to tax expense. Second, Lev and Thiagarajan (1993) investigate the effect of a change in the effective tax rate (ETR) on stock returns and find that the relation between ETR-related earnings changes and stock returns was significantly negative. This evidence is consistent with anecdotal evidence that analysts view ETR-related earnings changes as transitory.⁸ Using firm N as a benchmark, a

⁷ EITF 94-1 refers to the accounting methods used by corporations P and A as the equity and effective yield method of accounting, respectively.

⁸ Analysts often view changes in ETRs as a way for companies to meet earnings estimates, and not as a reflection of changing business conditions. See for example "Tricky Tax Moves Can Boost Profits: It's a Dubious Way to Meet Forecasts" in *USA Today*, October 24, 2003, p.1B.

greater portion of the \$48 increase to after-tax earnings for P comes from ETR-related changes, which analysts view as transitory, even though P's ETR change from the LIHTC investment will persist for 10 years.

Two additional reasons why corporations should prefer the income statement of A to that of P come from literature on earnings management and the valuation of earnings components. First, evidence from previous empirical studies indicates that users of financial statements value components of earnings differently (e.g., Lipe, 1986; Fairfield et. al., 1996; Davis, 2002; Bradshaw and Sloan, 2002; McVay, 2005). A common theme in this literature is that managers believe earnings classification affects expectations of financial statement users even though shifting expenses down (or revenue up) the income statement does not affect bottom-line earnings. P's income statement reports costs in pre-tax earnings and revenues as a reduction to tax expense. After-tax accounting gives investors the ability to shift the expense down the income statement, reporting only net revenue in tax expense. Thus, classification of expenses above revenues using pre-tax accounting could have negative valuation implications if items higher (lower) on the income statement are viewed as more (less) persistent. Finally, Francis et. al. (2003) finds that EBITDA has incremental explanatory power over net income in explaining stock returns. EBITDA for P (A) is \$920 (\$1,000) even though after-tax earnings are the same for both firms. Consistent with this finding, after-tax accounting would be preferred where a manager believes EBITDA, or a combination of EBITDA and after-tax earnings, are being used to value his firm's shares.⁹

⁹ Most analysts interviewed by the FASB in 2002 noted that EBIT and EBITDA were key performance metrics used to assess a company's performance. <http://www.fasb.org/project/interviews.pdf>

2.2 Demand and the market for LIHTCs

Market demand for LIHTCs comes primarily from publicly held corporations in the utilities and financial services industries. The data used in this study show that from 1987 through 1993, 33 (67) percent of demand for LIHTCs came from corporate (individual) investors. From 1994 through 2005, 88 (12) percent of demand came from corporate (individual) investors. This shift in demand resulted from increased corporate interest in the LIHTC program following the Revenue Reconciliation Act of 1993, which made the LIHTC program a permanent (as opposed to temporary) tax incentive program.

I obtain an industry composition of corporate investors by searching SEC filings for the term “housing tax credit.” This search produced 339 distinct investors primarily concentrated in two industries: 76 percent financial services (i.e., SIC codes 6000-6411) and 14 percent utilities (i.e., SIC codes 4900-4999).¹⁰ The remaining 10 percent include mining, food, textile, chemical, extractive, durables, computers, transportation, retail, insurance, and services.¹¹ Thus, nearly 20 percent of all LIHTC investors operate in industries where analysts often claim EBITDA to be an important performance metric in valuing firms (i.e., utilities, mining, food, textile, extractive, durables, retail, and transportation).

LIHTC purchasing behavior also characterizes corporate investors. Most corporate investors make relatively infrequent and small purchases of LIHTCs. However, a small number of large firms make relatively frequent and high volume purchases of LIHTCs because these investments satisfy their regulatory mandates to invest in low-income communities. In 2002, Fannie Mae reported spending \$1.6 billion on LIHTCs, purchasing

¹⁰ The finding of 339 distinct investors is consistent with survey evidence from Cummings and DiPasquale (1997) that states approximately 300-400 corporations have invested in LIHTCs.

¹¹ I use the same industry classifications as in Barth et al. (1999).

approximately 20 percent of all LIHTCs available that year.¹² The market for LIHTCs differentiates among these investors by referring to the former as “multi-investor” and the latter as “proprietary.”

Financial reporting should affect the market price of LIHTCs for multi-investors, but not proprietary investors, such as Fannie Mae. The reason is that proprietary investors report LIHTC investments in the financial statements such that the information provided causes the difference between pre-tax and after-tax accounting to become immaterial. Fannie Mae, for example, specifically disclosed that pre-tax earnings include net losses on certain affordable housing tax-advantaged equity investments totaling \$225, \$222, and \$188 million in 2002, 2001, and 2000, respectively.¹³ These losses reduced pre-tax earnings for Fannie Mae by 3.6, 2.3, and 3.1 percent for these years.

In addition to disclosing the losses as a separate line item in pre-tax earnings, proprietary investors may report non-GAAP taxable-equivalent adjustments (TEAs) for LIHTCs. It is a widely used practice in the financial services industry to report TEAs for tax-exempt investments, which have the effect of increasing both pre-tax earnings (i.e., reporting interest income as if it was fully-taxable) and tax expense, with no affect on after-tax earnings. Because the revenue from LIHTC investments comes in the form of tax credits, the income is effectively tax-exempt. Following from the previous example, the TEA for LIHTCs would appear as follows:

¹² www.fanniemae.com/newsreleases/2003

¹³ Freddie Mac, Bank of America and Bank One (reported by sponsors to be proprietary end-users) also report losses from equity investments in affordable housing as a separate line item in pre-tax earnings. This information makes it easier for users of financial statements to “undo” the effects of these losses on pre-tax earnings when comparing and evaluating performance.

	P		A	
Sales	1,000		1,000	
LIHTC losses	<u>(80)</u>		<u>(0)</u>	
Pre-tax earnings (a)	920		1,000	
TEA	154	[100/(1-	74	[48/(1-.35)]
<i>Adj. pre-tax earnings</i>	<u>1,074</u>	.35)]	<u>1,074</u>	
<i>Adj. Tax expense (b)</i>	<u>376</u>		<u>376</u>	
After-tax earnings	<u>698</u>		<u>698</u>	
Effective Tax Rate (b/a)	.35		.35	

This adjustment has the effect of placing the revenue (i.e., from the LIHTCs that is currently reported in tax expense) in pre-tax earnings grossed-up by (1-.35). For example, the non-GAAP TEA adjustment made by Fannie Mae for LIHTC investments increased pre-tax earnings by \$594, \$584, and \$430 million in 2002, 2001, and 2000, respectively.

2.3 Supply and the market for LIHTCs

The supply of LIHTCs to corporations generally comes from investment sponsors. The market for LIHTCs is characterized as a distribution channel with a producer (i.e., housing developers that receive LIHTC allocations from the government), an intermediary (i.e., an investment sponsor), and a consumer (i.e., the investor). Sponsors create a marketplace through which developers receive cash for their LIHTC allocations from corporations that enjoy reductions in their federal income tax liability from the LIHTCs. Sponsors buy tax credits from developers at wholesale prices, and then resell the LIHTCs through various distribution channels at retail prices. The difference between the wholesale and retail market price of an LIHTC represents the sponsors load for performing asset management, compliance, and reporting functions over the life of the investment

There are effectively four distribution channels through which sponsors buy and sell tax credits: First, there are multi-investor and proprietary distribution channels, which serve the two types of investors discussed above. Second, there are (unguaranteed) guaranteed

distribution channels, which serve corporations (not) demanding guarantees. To meet demand for LIHTCs in each of these distribution channels, sponsors bid for a fixed supply of tax credits from developers each year. End-user behavior drives any distribution channel, and therefore, sponsors consider the resale distribution channel when bidding on LIHTCs.

Guarantees act like insurance policies on the LIHTC investment, effectively transferring real estate risk into investment-grade credit risk. If the underlying real estate generating the LIHTCs enters into foreclosure before the expiration of a required 15-year holding period, the investor recaptures a portion of the LIHTCs taken on past tax returns plus interest and loses any remaining LIHTCs. Sponsors supply guarantees for a fee generally by forming a relationship with an investment grade firm in accordance with a risk and fee-sharing arrangement. See Figure 1a for a diagram of the LIHTC market structure.

In theory, corporations demand guarantees to indemnify themselves against the loss of LIHTCs. However, there are three important observations worth noting about the market for guarantees. First, a market for guarantees does not exist for individual investors. Second, corporate demand for guaranteed LIHTCs increased sharply from 1995 to 1996 from 15 to 26 percent of all LIHTCs, the same time EITF 94-1 became effective.¹⁴ Third, the foreclosure rate on LIH real estate projects since the Tax Reform Act of 1986 introduced the LIHTC program is .01 percent annually, nearly 50 times lower than market-rate apartments [E&Y 2002]. Each of these observations supports the notion that demand for guarantees is largely accounting based.

¹⁴ The FASB finalized EITF 94-1 in May 1995. These data are likely to understate this increase because it represents only primary market guarantees. Secondary market guarantees exist when firms buy unguaranteed LIHTCs, guarantee some portion of the investment, and resell the LIHTCs to firms demanding guarantees. Secondary market guarantors have included such firms as Zurich Insurance, Keycorp, Bank One, Fannie Mae, Edison Capital, Hartford Insurance, DQE Financial, and XCEL Energy.

2.4 Hypothesis development

According to one investor, “People see the value of receiving a guarantee. There is better accounting treatment and a lack of real estate worries” (Journal of Tax Credit Investing 2003). If investors place a value on the guarantee that is higher than sponsors’ cost of supplying the guarantee (i.e., because they value the accounting benefits), sponsors will earn what I refer to as an “accounting premium.” In the bidding process through which sponsors obtain LIHTCs in the wholesale market, I examine whether this accounting premium affects the market price of LIHTCs.

When sponsors purchase LIHTCs for unguaranteed (guaranteed) distribution channels, I hereafter refer to these as (pre-tax) after-tax LIHTCs. This analysis leads to the principal hypothesis tested in this study, stated in the alternate form:

H_{1A}: Sponsors pay more for after-tax compared with pre-tax LIHTCs in the multi-investor, but not the proprietary, distribution channel.

CHAPTER 3

RESEARCH DESIGN AND EMPIRICAL RESULTS

3.1 Model development

To test the hypothesis developed above, I estimate a regression of LIHTC price on distribution channel indicator variables, an interaction term, and control variables for risk differences in the underlying real estate. I use a pooled OLS regression, controlling for temporal variations in price and unobserved heterogeneity among sponsors by including year and sponsor fixed effects.

$$\begin{aligned} \text{LIHTC price}_{ijt} = & \beta_0 + \beta_1 \text{Proprietary}_{ijt} + \beta_2 \text{After_Tax}_{ijt} + \beta_3 \text{Proprietary} * \text{After_Tax}_{ijt} + \\ & \beta_4 \text{Region}_{ijt} + \beta_5 \text{Tenant}_{ijt} + \beta_6 \text{Financing}_{ijt} + \beta_7 \text{Location}_{ijt} + \beta_8 \text{Units}_i + \\ & \beta_9 \text{Subsidy}_{ijt} + \beta_{10} \text{Rent_to_Income}_{ij} + \beta_{11} \text{Vacancy_Rate}_{ij} + \\ & \beta_{12} \text{Income_to_Poverty}_{ij} + \varepsilon_{ijt} \end{aligned}$$

The dependent variable, *LIHTC price*, is the capital contribution made to the housing project divided by the number of federal LIHTCs generated by the underlying real estate. To eliminate variation in my LIHTC price measure due to other tax incentives generated by the underlying real estate, I eliminate 379 (i.e., 7 percent) observations that report federal and state historic tax credits, or state LIHTCs. *After_Tax* equals one if the sponsor is purchasing LIHTCs for investors demanding guarantees. *Proprietary* equals one if the sponsor is purchasing LIHTCs for the proprietary distribution channel. I include *Proprietary*, which effectively serves as an interaction between the intercept and *Proprietary* to control for the increased value attributed to LIHTCs by these investors because of their ability to satisfy

regulatory mandates. Regarding the hypothesized premium on after-tax credits under H_1 , the coefficients of interest are β_2 and β_3 . Specifically, I test the null hypothesis that $\beta_2 = 0$ and $\beta_2 + \beta_3 = 0$ against the alternate hypothesis that $\beta_2 > 0$ and $\beta_2 + \beta_3 > 0$. Consistent with H_1 , I expect to reject the null hypothesis that $\beta_2 = 0$, however, I do not expect to reject the null hypothesis that $\beta_2 + \beta_3 = 0$.

Specification of the control variables considers differences in the perceived risk of foreclosure on the underlying real estate generating the tax credits. *Region*, *Location* and *Units* are consistent with prior research examining risk differences across LIHTC projects (Cummings and DiPasquale 1999). *Region* considers risk differences among the *West*, *Midwest*, *South*, and *Northeast* regions of the United States, as defined by the U.S. Census Bureau. I expect a negative (positive) coefficient on *Midwest* (*West* and *Northeast*). Midwest markets tend to have tax credit rents at par with market rents, making these units less competitive than other parts of the United States (Tax Credit Advisor, February 2001, p.1.). *Location* considers risk differences among projects located in *Rural*, *Suburban*, and *Urban* markets. I expect a positive coefficient on *Suburban* relative to rural projects because suburban areas have a larger tenant set and demand for housing is not as vulnerable to changes in local labor markets. I do not make a prediction for *Urban* because while these projects do have a larger possible tenant set, they have also suffered from negative perceptions of inner city living (i.e., drugs, crime, etc.). The variable *Units* is equal to the number of rental units, and controls for project size. I expect LIHTC to increase in project size because smaller multifamily properties traditionally are more expensive to operate and manage for their size compared to larger properties (TCA 2001).

Financing is the type of permanent financing on the housing project – *Conventional*, *Tax_Exempt*, *Soft_Only*, *RD* (rural development loans), and *Other*. I expect a negative coefficient on *Tax_Exempt* because these projects have more leverage and therefore more debt service.¹⁵ I expect a positive coefficient on *Soft_Only*. Soft debt is less risky because the debt payments come from project cash flows rather than following a mandatory payment schedule. Therefore, if a LIH project with soft debt in its financing structure is experiencing negative cash flows, debt service is not required. A LIH project with a significant amount of soft debt has a substantially reduced probability of going into foreclosure. I do not make a prediction for *RD* loans or *Other*.

Tenant considers the tenant base served by the housing project – *Family*, *Seniors*, *Mixed* (seniors and families), *Special Needs*, or *Other* (serving a wide variety of tenant groups). I expect a negative coefficient on *Family* because investors have generally assumed seniors projects to be a safer investment than family projects. The perception is the families are more mobile than seniors making it more difficult to keep these project units occupied (TCA 2001). I do not make predictions for *Mixed*, *Special Needs*, or *Other*. I include *Subsidy* that equals one if the LIH project receives a subsidy such as Section 8 or AAC/Section 9. These subsidies have the effect of insuring either a high occupancy or increased cash flow available for operating costs, making these projects appealing to LIHTC investors. I expect a positive coefficient on *Subsidy*.

Finally, I include three variables constructed from 2000 U.S. Census Bureau data to control for the cross-sectional variations in rental market conditions in each 5 digit zip code area. I match LIH projects with local market characteristics from the census data at the 5-

¹⁵ The government allocates fewer LIHTCs to projects with tax-exempt financing, because they already receive a federal subsidy in the form of tax-exempt financing. Without as many tax credits to sell to raise equity capital, these projects have more leverage.

digit zip code level to construct the following: *Income_to_Poverty*¹⁶, *Vacancy_Rate*, and *Rent_to_Income*. *Income_to_Poverty* is the percentage of people within that local market whose ratio of income to poverty level is below 1.25. I expect a positive coefficient on *Income_to_Poverty* because there should be sufficient demand for affordable housing in markets more densely populated by low-income people. *Vacancy_Rate* is the rental vacancy rate for market rate units. I expect a negative coefficient on *Vacancy_Rate* because a high rental vacancy rate indicates a soft overall rental market in that local area. *Rent_to_Income* is a ratio measure of the median contract rent to median gross income. I expect a positive coefficient on *Rent_to_Income* because a higher ratio suggests market rate rental housing is less affordable relative to wages in the local market. Lower affordability of market rate apartments suggests the local market should exhibit higher demand for affordable housing.

3.2 Sample selection and descriptive statistics

There is no publicly available source for the market price of LIHTCs. The Affordable Housing Services Group of Ernst & Young LLP (E&Y) collects data annually through a survey of sponsors and provided access to this confidential database. These data represent approximately two-thirds of all wholesale market transactions occurring between sponsors and developers since 1986.

Table 1, Panel A describes the sample selection process. Of the total 13,503 transactions represented in these data, I eliminate 4,934 transactions occurring before 1994 because the FASB began the comment period for what is now EITF 94-1. I further eliminate 1,526 transactions not occurring between developers and corporate sponsors. These transactions are eliminated because individuals are unaffected by financial reporting rules

¹⁶ Cummings and DiPasquale (1999) use a similar measure.

and sponsors do not provide guarantees to individuals.¹⁷ I also eliminate 379 transactions that generate tax credits other than federal LIHTCs. Finally, I eliminate 1,407 transactions from the sample due to missing data. The final sample consists of 5,257 tax credit transactions occurring between developers and sponsors selling LIHTCs to corporate investors.

Table 1, Panel B depicts the sample using a bivariate tabular analysis that summarizes the intersection of the four distribution channels: pre-tax versus after-tax, and multi-investor versus proprietary. Twenty-two percent of all LIHTCs in this sample end up in the proprietary distribution channel. Eight (twenty) percent of all transactions in the proprietary (multi-investor) channel are after-tax. By comparing observed and expected values in each cell, I calculate a χ^2 of 83.12, which exceeds the χ^2 value (10.83) for one degree of freedom and $p = 0.001$. Thus, the data illustrate a statistically significant “bias” towards a higher frequency of demand for guarantees coming from the multi-investor distribution channel.

Table 2 provides descriptive statistics for the dependent and independent variables. In panel A, the mean LIHTC price (i.e., dependent variable) increased over time from 55 cents in 1994 to 83 cents in 2005. This increase in price is due primarily to i) increased demand for tax credits from corporations coupled with an inelastic supply of tax credits, and ii) a general decline in interest rates over my sample period (i.e., as corporations demand a lower yield on their investments, sponsors can pay more for tax credits). I attribute the magnitude of the variance in LIHTC price to the fact that sponsors compete for tax credits on dimensions other than price, or capital contributions (i.e., they may offer side payments, higher fees, etc.). Therefore, a developer might receive 45 cents per tax credit from one sponsor and 60 cents from another, however, both offers may be attractive once the developer considers other

¹⁷ Note a lack of demand for guarantees by individuals supports the notion that corporate demand for guarantees is largely accounting-based.

aspects of the bid for the LIHTCs. I include sponsor fixed effects in all estimation equations to control for heterogeneity across sponsors with respect to the strategy they employ to compete for tax credits. Overall, the variance on LIHTC price decreases over time, also consistent with increased competition.

Table 2, Panel B illustrates statistically significant differences between pre-tax and after-tax investments along several dimensions. The largest differences in terms of magnitude are the use of tax-exempt financing, urban locations, and tax credit units. Specifically, after-tax credits have higher incidences of tax-exempt financing and urban locations, as well as offer more tax credit units. These factors are likely to be related because housing projects using tax-exempt bond financing are typically larger (to cover the bond issuance costs), and therefore work well in large urban areas. Table 2, Panel C also shows statistically significant differences between multi-investor and proprietary distribution channels. The differences along the region dimension in both Panel B and Panel C may relate to the relation between a sponsor's geographic preferences and the mix of their product offerings (i.e., use of the four distribution channels).

3.3 Empirical results

Table 3 reports summary statistics from the LIHTC price regression. I report Huber-White robust standard errors (Rogers 1993, generalizing White 1980) that provide heteroskedasticity-robust t -statistics by correcting for dependence within a cluster of related observations.¹⁸ The results support H_1 . The coefficient on *After_Tax* is positive and significant at .098 and the coefficient on, *Proprietary*After_Tax*, is negative and significant

¹⁸ See Petersen (2005) for a discussion of clustered standard errors.

at -.097. An F-test fails to reject that $\beta_2 + \beta_3 = 0$, suggesting that sponsors pay more for after-tax credits only in the multi-investor end-user distribution channel.¹⁹

The coefficient on *After_Tax* of .098 means that sponsors bid 10 cents more per dollar of tax credit, on average, when they are purchasing LIHTCs from developers for multi-investor end-users demanding guarantees. This result suggests that 10 cents is the lower bound on the accounting premium that sponsors earn by providing guarantees to these corporate investors. Section 4 provides some economic intuition behind this result.

The explanatory power of the control variables is relatively weak.²⁰ However, one could argue that specification of the control variables is potentially trivial, since the foreclosure rate is .01 percent. Overall, the results suggest that end-user characteristics and the demand for guarantees have a larger affect on LIHTC pricing than project characteristics or local market conditions.

It is interesting to note the two statistically significant financing coefficients, Tax-Exempt and Soft-Only. Soft-only debt, by definition, effectively eliminates the risk of foreclosure and therefore, a positive coefficient of .0360 on Soft-Only is reassuring. Projects with tax-exempt financing use approximately twice as much debt as other projects, so that finding that these projects are associated with higher LIHTC prices (i.e., a coefficient of .0254), on average, is surprising. I examine this issue further in Section 5 of the paper.

¹⁹ As a comparison, I estimated the equation without considering the multi-investor versus proprietary distribution channel. The coefficient on *After_Tax* was lower in magnitude, .0464, and was only marginally significant (i.e., at the 10 percent level).

²⁰ The statistical significance of the control variables in the Cummings and DiPasquale (1999) study that estimated a regression of LIHTC yield on project characteristics is also weak. The authors express, for example, that “the results on location are somewhat surprising, given that we would expect location to be an important determinant of risk (p. 296).” The R-sq in their regression is .23.

CHAPTER 4

AN ECONOMIC ANALYSIS OF THE PREMIUM ON AFTER-TAX CREDITS

4.1 How big is a 10-cent premium?

I examine the magnitude of this premium in two ways. First, I determine the portion of the total guarantee fee paid (i.e., premium on after-tax credits) in the retail market that this 10-cent premium represents. I expect that corporate investors pay more than 10 cents for guarantees in the retail market, because sponsors are not likely to pass the entire guarantee fee along to the developer. Second, I examine the relation between LIHTC price and LIHTC yield, and examine the yield spread between pre-tax and after-tax credits.

Before conducting either analysis, I need to demonstrate the relation between LIHTC price and LIHTC yield. Suppose the price of a LIHTC is 80 cents. This translates into the corporation receiving 10 cents each year for the next 10 years (i.e., \$1 of tax credit realized pro-rata over 10 years). Recall investors can also take annual tax deductions for the cost of the credit allowing them to realize additional cash flow each year. Assume that, on average, these deductions are taken on a straight-line basis over 10 years producing cash flow per year of 2.8 cents $[(80/10)*.35]$. An immediate cash outflow of 80 cents and a cash inflow of 12.8 cents each year for the next 10 years equates to an internal rate of return of 9.6 percent.²¹

Using the methodology above, I take the results from Table 3, and calculate the average price (yield) for pre-tax credits as 71 cents (11.8 percent). The average price (yield) for after-tax credits is 81 cents (9.4 percent). These rates of return may seem high,

²¹ Note this is an after-tax yield because revenue in the form of tax benefits is effectively tax-exempt.

particularly since they are after-tax returns. However, recall that the data used in this study represent wholesale market transactions between sponsors and developers. Sponsors charge a fee and then resell them to corporate investors for a higher price (lower yield).

To estimate the premium on after-tax credits in the retail market, I collect 193 yields from retail market transactions negotiated between corporate investors and sponsors from 1994 through 2005. Table 4 reports these results. Again using the methodology above, I convert these yields in LIHTC prices. The average price (yield) for pre-tax credits is 99 cents (6.1 percent), while the average price (yield) for after-tax credits is 83 cents (9.0 percent).

I estimate sponsor fees at 12 cents per LIHTC as the difference in the pre-tax credit price in the wholesale market relative to the retail market. The difference in after-tax credit price in the wholesale market relative to the retail market, less sponsor fees of 12 cents, equals 6 cents. The 6 cents represents the portion of the guarantee fee that sponsors retain, on average, for providing guarantees.

Collectively, Table 4 illustrates two important points about the magnitude of the 10-cent premium on after-tax credits. First, corporations demanding guarantees are willing to pay, on average, 16 cents (i.e., 99-83) for the guarantee, while sponsors are willing to pay, on average, 10 cents more to developers when purchasing LIHTCs for corporations demanding guarantees.²² This suggests that at least 60 percent (10/16) of the value attributed to guarantees by corporate investors is for accounting benefits. Additionally, by thinking of LIHTC price in terms of yield, we can see that the market price of LIHTCs provides investors in pre-tax credits a risk premium of 2.9 percent after tax, which equates to a 4.5 percent (.029/.65) risk premium before tax. This risk premium is large given a foreclosure

²² Guthlein and Bingham (2001) estimate guarantee fees in the range of 15 to 20 percent. My estimate of 16 percent [16/99] is in line with theirs.

rate of .01 percent annually, further supporting the notion that guarantees derive significant value from the perceived accounting benefits they provide to investors. See Figure 1b for a diagram of these results.

4.2 Implied risk premium in the market for LIHTCs

The results above suggest that guarantees derive at least 60 percent of their value from the benefits associated with after-tax accounting. Do guarantees derive the other 40 percent of their value from risk reduction, or do sponsors profit almost entirely from the 6-cent portion of the total fee that they retain? With an annual foreclosure rate of .01 percent it is reasonable to expect that there is little to no cost to providing a guarantee. However, it is also possible that an annual foreclosure rate of .01 percent is not an accurate risk measure to use in determining the cost of providing the guarantee.

Based on discussions with advisors, another risk that a LIHTC investor potentially faces is the need for additional capital contributions. Additional capital contributions by the investor may be required in cases where the LIH project is experiencing operating deficits (i.e., negative cash flow) not funded through standard industry capital reserves, mortgage workouts or deferred fees. Under some circumstances, contributing additional capital may be less costly than losing the LIH project to foreclosure. While anecdotal evidence suggests corporate investors rarely contribute additional capital, no empirical evidence exists to support this conjecture.

Despite a low foreclosure rate for LIH projects, the data suggest that some projects do experience operating deficits. The database used in this study reveals that in 2003, 13 percent of the LIH projects in my sample incurred operating deficits (i.e., negative cash flow) that were funded through capital reserves, mortgage loan workouts, deferred fees, or 'other'.

Other *could* include additional investor capital contributions.²³ ‘Other’ funded 50 percent of these operating deficits with a mean funded deficit in 2003 of \$48,496. Compared to the mean capital contribution (i.e. the numerator in tax credit price) for this sub-sample of projects of \$2,199,306, this deficit may appear small. However, if an investor was required to fund operating deficits in multiple years over the life of the investment, this could be as costly as foreclosure on the LIH project.

To obtain an idea of what the yield spread between pre-tax and after-tax LIHTCs might look like based on mortgage default rates rather than foreclosure rates, I turn to the commercial mortgage backed securities market (CMBS).²⁴ CMBS bonds are publicly traded mortgage loan pools collateralized by various types of real estate, including multifamily apartment projects. LIH projects are a unique sector of the multifamily apartment market. CMBS data do not specifically reflect LIH projects. However, these data do reflect multifamily apartments in general and, therefore, can shed light on the appropriateness of the observed risk premium in the market for tax credits.

Fitch data on CMBS loan defaults from 1993 through 2003 show a cumulative CMBS loan default rate of 4.0 percent. The general perception of multifamily loans in the CMBS market is that they are safer than other types of real estate, such as office building and hotels. Consistent with this perception, the data show that the cumulative default rate on multifamily mortgage loans over the same period is 2.6 percent. In 2003, the CMBS market (i.e., with a cumulative default rate of 4.0 percent) offered investors a pre-tax yield spread of 0.8 percent

²³ When I asked E&Y for a definition of ‘other’, they provided several options. One included the possibility of additional investor capital contributions, however, I was told that this is exceedingly rare based on their experience.

²⁴ An operating deficit can lead to a mortgage default if not cured within a reasonable period of time. Therefore, default risk is a reasonable way to think about operating deficits.

(i.e., AAA rating) to 2.1 percent (i.e., BBB- rating) above 10-year Treasuries, (i.e., a comparable proxy for guaranteed LIHTCs). (Credit Suisse First Boston, CMBS Market Watch Weekly, August 8, 2003). The pre-tax yield spread on LIHTCs in 2003 was 2.9 percent.

A risk premium of 2.9 percent in tax credit markets would imply that unguaranteed LIHTC investments are riskier than the lowest investment-grade tranche of a mortgage-backed security (i.e., BBB-). If 60 percent of the LIHTC spread (i.e., observed in the retail market) is attributable to accounting benefits, the remaining risk premium is still 1.8 percent $[(.029 \times .60)]$. Even the remaining spread appears high for at least three reasons, supporting the notion that a portion of the 6 cents retained by the sponsors represents accounting payments.

First, the CMBS spread of 0.8 percent to 2.1 percent considers pools of loans collateralized by all property types, including hotels which are considered far more risky than apartments. Assuming the entire loan pool was populated with multifamily loans (i.e., with a default rate of 2.6 percent rather than 4.0 percent), the pre-tax yield spread on CMBS might be more in the range of 0.5 percent to 1.4 percent.²⁵ This range is lower than the 1.8 percent (i.e., sponsors compensation) in the market for LIHTCs.

Second, LIH projects are a very specific sector of the apartment market offering below market rents. For this reason, LIH projects are insulated from natural fluctuations in real estate relative to market-rate apartments. Mortgages on market-rate apartments act as collateral on CMBS pools, not LIH apartments. After considering the unique nature of LIH, the risk of defaults or operating deficits in LIH are likely to be even lower than implied by the yield spread in CMBS markets.

²⁵ The default rate on multifamily loans is 35 percent lower than total loans $[(.04 - .026) / .04]$. Therefore, I take the endpoints of the yield spread and multiply them by .65 to estimate the CMBS spread using the lower default rate observed in multifamily loans.

Finally, the CMBS market directly links mortgage defaults and risk premiums. The reasons for this is bond payments in the CMBS market depend directly upon the principal and interest payments received from the underlying mortgage loans. Defaults in the LIHTC market are resolved in a number of different ways that may or may not include additional investor capital contributions. Therefore, the investor is not necessarily at risk in the case of a mortgage default because there are a number of safety nets built into the syndication process (i.e., the buying and selling of tax credits).

In summary, I conclude the value of a guarantee attributable to accounting benefits is somewhere between 10 cents and 16 cents. Investors appear willing to pay, on average, 16 cents per LIHTC for a guarantee. Ten cents goes towards the development of affordable housing when sponsors bid more, and 6 cents stays with the sponsor, partially for compensation and partially as accounting profit. On average, the lower bound on the value of a guaranteed attributable to accounting benefits is 10 cents (or 60 percent), while the upper bound is 16 cents (with a low foreclosure rate, it is possible that there is little to no cost in providing a guarantee). While it is difficult to estimate how much of 6 cents represent accounting profit, sponsors do appear to earn profits from accounting-based demand for guarantees as evidenced by their compensation exceeding risk premiums seen in the CMBS market.

4.3 Exchange rate between pre-tax and after-tax earnings

If corporations are willing to pay 16 cents for the guarantee, yet the cost of the guarantee is at most 6 cents, the 10-cent premium implies a willingness by managers to incur real costs to qualify for after-tax accounting. Recall that pre-tax accounting reduces pre-tax earnings by the cost of the credit and after-tax accounting has no effect on pre-tax earnings.

If the average cost of a pre-tax credit in the retail market is 83 cents, the average reduction to pre-tax earnings for pre-tax credit investors is 83 cents. If investors pay 10 cents for the accounting benefits associated with after-tax credits, they avoid a reduction to pre-tax earnings of 83 cents.

Given the relation between tax credit price and pre-tax earnings charges, I can estimate an exchange rate between pre-tax and after-tax earnings. A 10-cent premium provides the investor with an additional tax benefit of 3.5 cents [$10 \times .35$] additional premium provides and additional tax deduction. Therefore, investors reduce after-tax earnings by 6.5 cents [$10 - 3.5$] to avoid a reduction to pre-tax earnings of 83 cents. In terms of dollars, this means that some tax credit investors sacrifice \$1 of after-tax earnings to increase pre-tax earnings by approximately \$13 [$83/6.5$], on average.

4.4 The market price of guarantees

An economic question arises from the results of this analysis. How can a sponsor earn a guarantee fee of 16 cents per LIHTC, on average, in a market setting where the price of the guarantee should be *at most* 6 cents? There is a vast body of research in industrial organization on the influence of industry structure on profitability (see Scherer, F.M., 1980 for a survey of this literature). According to this literature, one of the key determinants of the market price of a good or service is the degree to which there is competition among suppliers of the same or similar products. Relying on this research, organizational strategy literature suggests a framework for thinking about the intensity of competition, and the potential for creating abnormal profits by the firms in an industry (Porter, M. E., 1980)

Using this framework, I discuss four factors that create conditions under which the market price of guarantees makes sense. First, competition in the market for guarantees is

monopolistic competition, where firms are competing but each firm's products are slightly different. The overall effect of product differentiation is that it lessens price competition. If a sponsor were to lower the price of their guarantee on the LIHTC, corporations are not likely to switch sponsors based on the price of a guarantee. Therefore, this strategy would not necessarily have the effect of increasing demand for guarantees from that sponsor. The reason for this is that sponsors provide asset management, compliance, and reporting services, something that is important to corporations (i.e., I estimate the fee for these services at 12 cents per LIHTC). Sponsors sell "guaranteed tax credits" not guarantees by themselves, so the product differentiation comes from the intermediary services for the underlying tax credit investment and sponsor reputation. The propensity to switch sponsors purely based on price of the guarantee is low, because corporations would also be switching the provider of the intermediary services.

Second, even if lowering the price of a guarantee did increase demand for the sponsor's guarantees, it is difficult for the sponsor to supply the guarantees because he generally must use a third party with a strong rating in order to offer the guarantee. Based on discussions with sponsors, negotiations between sponsors and guarantors often break down because they cannot agree on a fee-sharing arrangement that is agreeable to both parties. Because offering the guarantee introduces complex profit and risk-sharing issues, a sponsor may not be able to meet increased demand resulting from a reduction in price. Sponsors are "continually searching for new guarantors to create additional guaranteed investments to meet the demand" (Bingham and Guthlein 2001). Because the market demand for LIHTCs, both pre-tax and after-tax, generally exceeds supply, the industry does not have excess capacity issues and there is no incentive to cut prices to fill capacity.

A third factor that determines the intensity of competition in the market for guarantees is the threat of new entrants. Because these monopolistically competitive firms appear to earn attractive profit margins, the next question is why the profits on guarantees do not attract new entrants to the industry. There are a number of barriers to entry in the market for LIHTCs including brand recognition, relationships with and access to developers (i.e., suppliers of LIHTCs), and extensive knowledge of Section 42 of the Internal Revenue Code which governs the LIHTC program. Firms cannot simply enter the market and earn profits by providing guarantees, because they must work with a sponsor selling the underlying tax credit guaranteed. Again, this leads back to complex profit-sharing issues.

The final factor driving the market price of guarantees is that the relative bargaining power of corporations relative to sponsors is low. Relative bargaining power depends on the cost to each party of not doing business with the other. There are few alternative products available to corporations to obtain guarantees, lessening their bargaining power. There is anecdotal evidence that corporations can obtain guarantees through a secondary market, as opposed to primary market guarantees purchased through sponsors. For example, some corporate investors, with high and stable debt ratings, purchase unguaranteed LIHTCs and resell them to other corporate investors with a guarantee, presumably for a lower price than that demanded by a sponsor. However, the supply of secondary market guarantees is not likely to pose a major threat to primary market guarantees. The reason is that “guarantee demand, combined with rising guarantee fees and the lack of supply in the guarantee market (e.g., reduction in volume by some guarantors, and exit by others due to credit problems and ownership changes), bodes well for those interested in guaranteeing affordable housing investment” (Bingham and Guthlein 2001).

CHAPTER 5

RELATION BETWEEN LIHTC PRICE AND PROJECT FINANCING

In this section, I explore further the earlier finding that higher LIHTC prices are associated with projects that use tax-exempt financing, even though these projects have more leverage. Recall from Section 2.1 that total tax deductions from operating losses reflected in pre-tax earnings over the life of the investment are equal to the amount of equity capital contributed. The use of tax-exempt financing has the effect of accelerating the timing of these tax deductions. The increased cash flow from accelerated tax deductions presents investors in pre-tax and after-tax LIHTCs with a different trade-off between cash and earnings. Therefore, examining the relation between LIHTC price, project financing, and accounting sheds light on investor heterogeneity in the coordination of cash flow and accounting earnings when making tax advantaged investments.

To frame the following discussion, the reader can think of LIHTC investments as investments in fixed assets. Investors record an asset on the balance sheet, and depreciation reduces both financial accounting and taxable income over the asset's useful life. Accelerated depreciation for both book and tax would provide the investor with a higher present value cash flow (from tax savings) but a lower present value of financial accounting earnings. Thus, accelerated depreciation has the effect of presenting the manager with a tradeoff. Numerous studies have examined this tradeoff (see Shackelford and Shevlin (2001) for a summary of this literature). The contribution of this analysis to prior research is that this

setting allows me to examine how investor heterogeneity in the coordination of cash flow and accounting earnings, in tax planning, changes when the tradeoff changes.

Think of projects that use tax-exempt financing as fixed assets that use accelerated depreciation for tax purposes (but not necessarily for financial accounting), relative to projects that use other types of financing. To explore investor heterogeneity, I examine whether the coefficient on *Tax-Exempt* varies between *Pre_Tax* and *After_Tax*. I expect the coefficient on *Tax-Exempt* to differ because the financial reporting tradeoffs are different depending on the accounting method used. For ease of exposition, I refer to pre-tax accounting using other (tax-exempt) financing as PTL (PTH), consistent with the investor receiving a relatively lower (higher) present value tax savings. I refer to after-tax accounting using other (tax-exempt) financing as ATL (ATH), also consistent with the investor receiving a relatively lower (higher) present value tax savings. I refer the reader to Figure 2 to illustrate the following points. Figure 2 draws on the previous example (i.e., an investor purchases 100 LIHTCs for \$80) and illustrates annual effects on the income statement for each combination of accounting method and financing type. This example intends to illustrate the relative differences among PTL, PTH, ATL and ATH investments.

The PTH investment, relative to the PTL investment, introduces the tradeoff between tax savings and accounting earnings. There are three important things to note when comparing the PTH with the PTL investment. First, by recognizing the LIHTC losses earlier in the investment's life, the PTH investor increases the present value of his tax savings from the tax deductions. Second, the PTH investor decreases the present value of his financial accounting earnings because under pre-tax accounting, financial accounting income and taxable income are both calculated using accelerated depreciation (i.e., book and taxable income are said to

“conform”). Third, he induces volatility in his ETR, because each year a different proportion of his tax benefits come from tax deductions versus tax credits. Therefore, investors in PTH must accept i) a lower present value of accounting earnings, and ii) ETR volatility in order to value the accelerated tax savings relative to PTL credits.

The ATH investment relative to the ATL investment effectively eliminates this tradeoff in three ways. First, by reporting the tax deductions in tax expense, pre-tax earnings are unaffected by tax deductions. Thus, pre-tax earnings are the same each year for ATH and ATL investments. Second, after-tax earnings are also the same each year for ATH and ATL investments. The result occurs because accounting income and taxable income do not conform under after-tax accounting, as they do in pre-tax accounting. Instead, the investor is able to use accelerated depreciation in calculating taxable income, while depreciation for accounting income remains straight-line (i.e. \$8 each year).²⁶ Third, the investor eliminates his ETR volatility. By depreciating the LIHTC investment at a different rate for book and tax, the investor enjoys a *timing difference*, reflected in deferred taxes until the end of the investment’s life. Changing the portion of total tax expense that is current versus deferred does not change the accounting ETR each year. In other words, the ATH investor can realize a higher present value cash flow without the tradeoff that the PTH investor faces.

There is also anecdotal evidence to support the notion that these different tradeoffs may affect the price of LIHTCs. For example, Paul Richman, a housing fund sponsor stated, “Due to the book income problems associated with [LIHTCs from projects using tax-exempt financing], the market is currently experiencing a shortage of investors in these tax credits.”

²⁶ EITF 94-1 imposes a different amortization process for writing the asset off the balance sheet. Operating losses generated by the housing project generate financial accounting amortization for the LIHTC investment recorded on the balance sheet (i.e., called the equity method of accounting). After-tax accounting generates amortization through a process similar to that used for bond amortization (i.e., called the effective yield method of accounting), thereby de-linking the amortization from the underlying project performance.

Furthermore, another sponsor expressed the notion that the tradeoff changes for investors that use after-tax accounting in the following statement, “The guaranteed market appears to have become an outlet for selling [LIHTCs from projects using tax-exempt financing]. These credits have become an anathema to corporate investors, due to the negative impact their higher losses have on earnings. This disincentive falls away when the credits are guaranteed.” *Tax Credit Advisor*, October 2002.

From this discussion, I offer the following testable hypothesis, stated in the alternate form:

H_{2A}: The LIHTC price premium on PTH investments compared with PTL investments is lower than the price premium on ATH investments compared with ATL investments.

To test this hypothesis, I estimate the regression from Section 3.1 with two modifications. First, I include only one indicator variable, *Tax_Exempt*, which is equal to one (zero) for housing projects using tax-exempt financing (all other types of financing). Second, I interact the financing indicator variable, *Tax_Exempt* with *After_Tax*. I do not predict differences across multi-investor and proprietary, however, I distinguish among the distribution channels to remain consistent with the prior estimation equation. Specifically, I estimate the following equation:

$$\begin{aligned} \text{LIHTC price}_{ijt} = & \beta_0 + \beta_1 \text{Proprietary}_{ijt} + \beta_2 \text{After_Tax}_{ijt} + \beta_3 \text{Proprietary} * \text{After_Tax}_{ijt} + \\ & \beta_4 \text{Tax_Exempt}_{ijt} + \beta_5 \text{Proprietary} * \text{Tax_Exempt}_{ijt} + \\ & \beta_6 \text{Tax_Exempt} * \text{After_Tax}_{ijt} + \beta_7 \text{Proprietary} * \text{Tax_Exempt} * \text{After_Tax}_{ijt} \\ + & \text{Controls} + \varepsilon_{ijt} \end{aligned}$$

The coefficients of interest are β_4 and β_6 . Specifically, I test the null hypothesis that $\beta_6 - \beta_4 = 0$, against the alternative hypothesis that $\beta_6 - \beta_4 > 0$. *Tax_Exempt* in this estimation

effectively serves as an interaction with *Tax_Exempt* with *Pre_Tax* (the intercept). Table 5 reports the summary statistics. The coefficient on β_4 is .0427, which suggests that the average LIHTC investor using pre-tax accounting values cash flow more than accounting earnings because they are willing to pay a premium to obtain the accelerated tax deductions. The coefficient on β_6 is .0111, which suggests that the average LIHTC investor using after-tax accounting also values the additional tax savings generated by tax-exempt financing. However, overall, the results are inconsistent with H_2 , because $\beta_6 - \beta_4 < 0$. This result is unexpected because investors using after-tax accounting appear to be valuing the additional tax benefits less compared with investors using pre-tax accounting even though their financial reporting costs are lower.

I offer two explanations for this unexpected result. First, the conjecture set forth and tested in the main analysis is that investors in after-tax credits purchase guarantees to obtain a desired financial statement presentation. This suggests that they focus on the accounting earnings impact of the investment, rather than cash flow. While investors that use after-tax accounting receive an economic benefit from accelerated tax savings, accounting earnings and the ETR do not reflect the additional tax savings (i.e., pre-tax earnings, after-tax earnings, and the ETR are the same each year). The failure of the additional tax benefits from the timing differences to reflect in accounting earnings might explain the apparent lack of value (relative to investors in pre-tax credits) attributed to this benefit. This is consistent with anecdotal evidence that corporate tax directors value permanent, rather than temporary, differences between accounting earnings and taxable income because temporary differences do not lower the accounting ETR (Neubig 2006).

Second, an analysis of the distribution of *Tax_Exempt* across accounting type suggests that supply and demand within each distribution channel may also help to explain these results. Table 5, Panel B depicts the sample using a bivariate tabular analysis that summarizes the intersection of the accounting treatment and financing type: pre-tax versus after-tax, and tax-exempt versus other. Forty-two (eight) percent of all after-tax (pre-tax) credits are generated by housing projects using tax-exempt financing. By comparing observed and expected values in each cell, I calculate a χ^2 of 794, which exceeds the χ^2 value (10.83) for one degree of freedom and $p < 0.01$. Thus, the data illustrate a statistically significant “bias” towards a higher frequency of projects using tax-exempt financing being sold to investors using after-tax accounting.

The overall effect of this distributional bias may be that sponsors do not have to compete as heavily for credits from projects using tax-exempt financing when they purchase tax credits for the after-tax distribution channel. In other words, sponsors supply just enough credits coming from projects that use tax-exempt financing to investors using pre-tax accounting (i.e., 43 percent) such that the corporations who value cash flow versus accounting earnings pay a premium for them. When sponsors supply the remaining credits coming from projects that use tax-exempt financing (i.e., 57 percent) to investors that use after-tax accounting there may be no need to pay a premium because supply exceeds demand in the overall LIHTC market for these credits. In other words, while there is a 4-cent premium on PTH credits relative to PTL credits, the distributional bias might suggest that a large number of investors using pre-tax accounting do not value cash flow more than accounting earnings.

CHAPTER 6

CONCLUSION

This main contribution of this study is the finding that investors appear willing to pay cash for higher pre-tax earnings. This study exploits the market for LIHTCs and GAAP accounting for those investments. Specifically, accounting guidance allows LIHTC investors to report tax deductions as reductions to pre-tax earnings, or alternatively, as an increase to tax expense. The accounting treatment of LIHTCs is therefore a tractable setting in which to examine the preference by managers to report higher pre-tax earnings even if after-tax earnings are the same. By examining the market price of LIHTCs, I find that higher prices are associated with investments that allow the investor to report tax deductions in tax expense, thereby avoiding reductions to pre-tax earnings. This suggests that corporations place more value on tax incentives when after-tax accounting income increases with no reduction to pre-tax earnings.

I also examine investor heterogeneity in the coordination of cash flow and earnings when making tax-advantaged investments. I provide evidence that the preference for investments that generate higher present value tax savings is diverse. Some investors do appear willing to pay a premium for LIHTCs to obtain a higher present value cash flow from accelerated tax deductions, even when the additional tax deductions lower the present value of their accounting earnings. This suggests that some investors value tax incentives for their economic benefits, independent of the effect on accounting earnings. I also find evidence that some investors pay a relatively lower premium for this additional cash flow, even when the

additional tax deductions do not lower the present value of their accounting earnings. This suggests that some investors focus on how the transaction reflects in accounting earnings. They do not value the economic benefits of tax incentives when the additional savings do not reflect in accounting earnings.

Overall, this study further suggests the need to explore the valuation implications of pre-tax and after-tax earnings components. An understanding of how tax reporting effects perceptions of performance can lead to a better understanding of how's firms respond to available or proposed tax incentives. This could include studies on how analysts, auditors, creditors, etc. use and interpret a firm's tax planning activities as reflected in the financial statements.

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Figure 1a Diagram of tax credit market structure

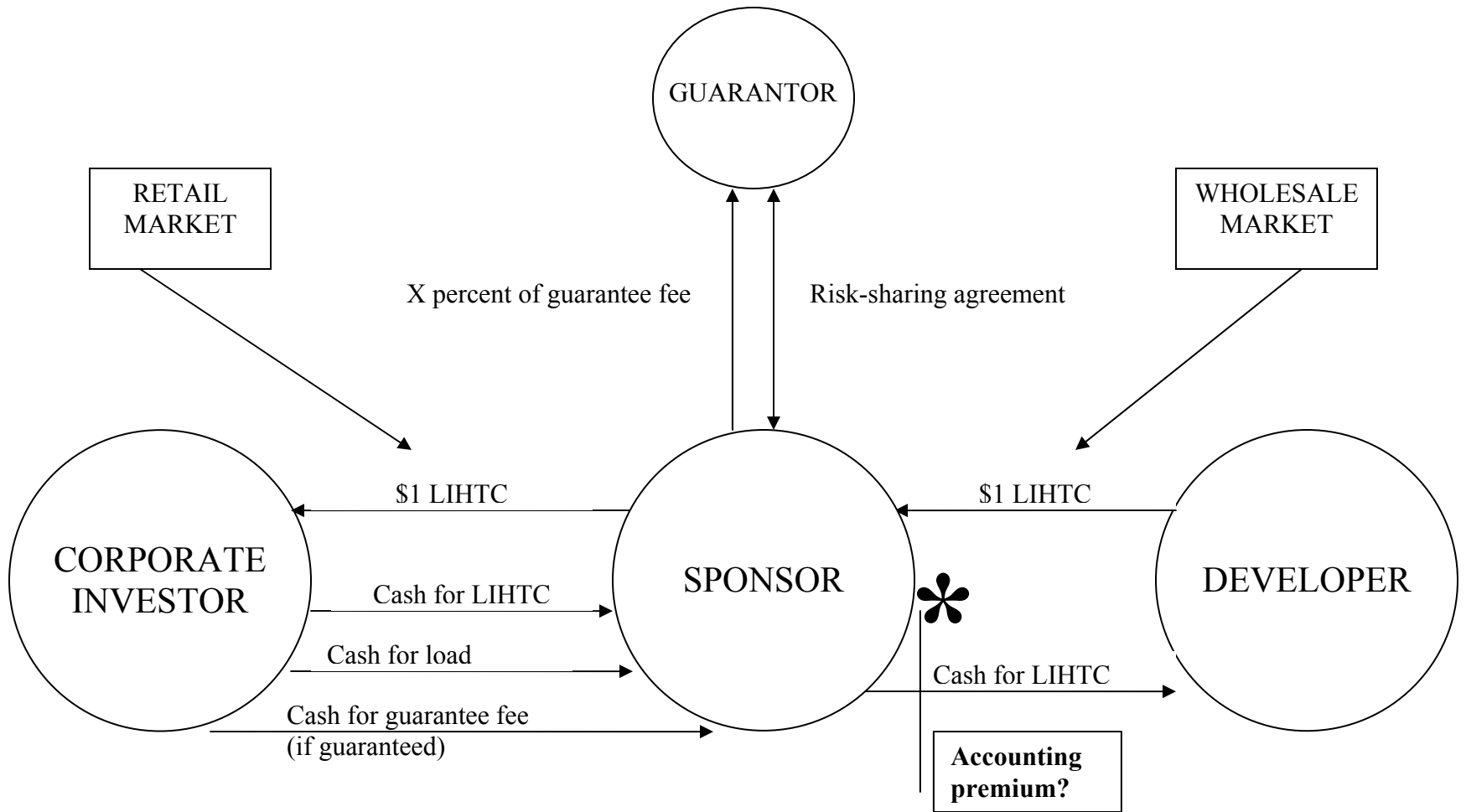


Figure 1b Diagram of tax credit market structure with results from Table 4

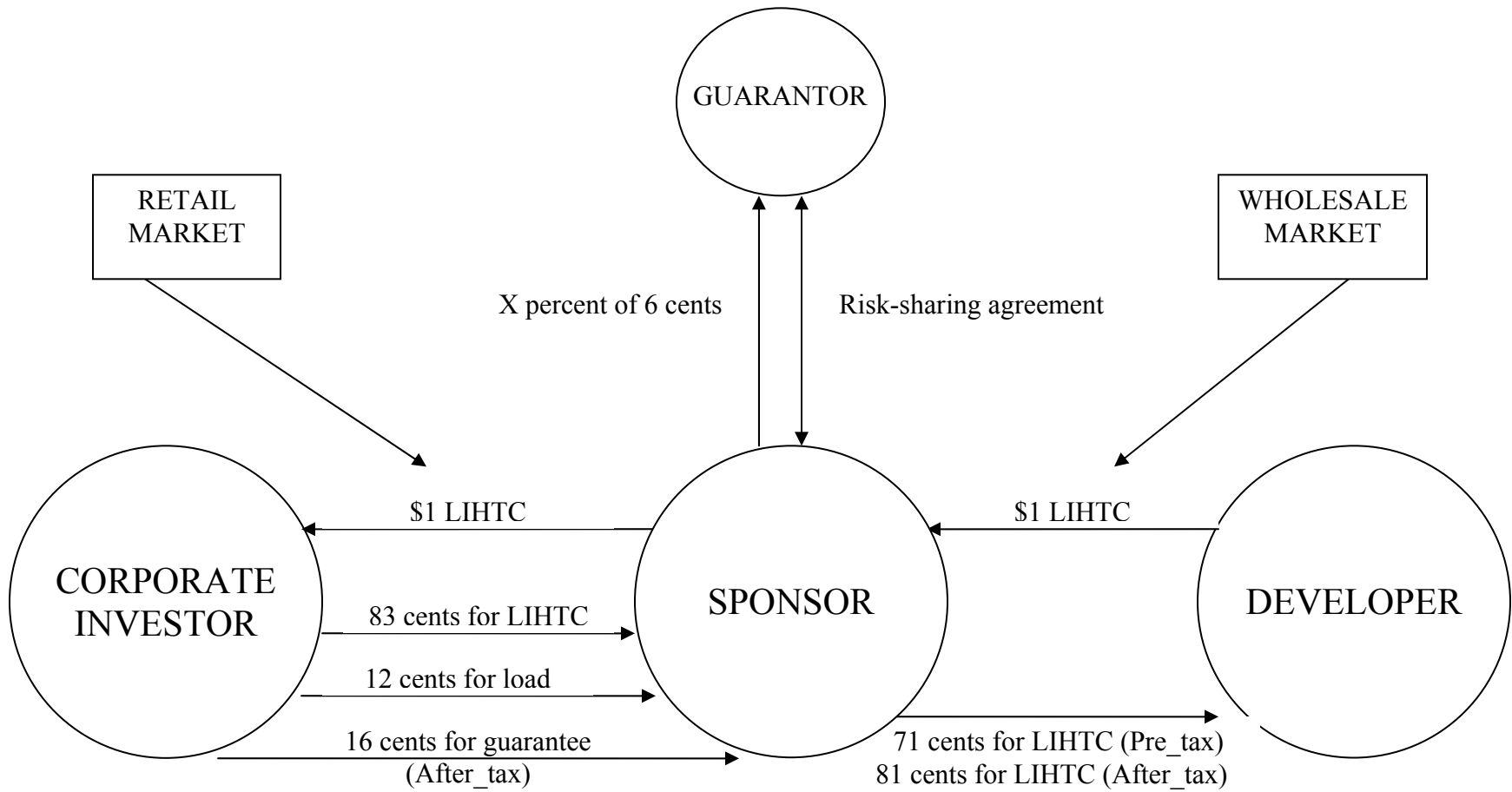


Figure 2 Sample income statements for intersection of accounting treatment and financing type

Pre-tax accounting with other financing^a											
PTL											
Year	1	2	3	4	5	6	7	8	9	10	Cum.
Sales	100	100	100	100	100	100	100	100	100	100	1,000
LIHTC losses ^b	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(80)
Pre-tax earnings	92	92	92	92	92	92	92	92	92	92	920
Current tax expense (benefit) ^c	22	22	22	22	22	22	22	22	22	22	222
Deferred tax expense (benefit) ^d	0	0	0	0	0	0	0	0	0	0	0
Total tax expense	22	22	22	22	22	22	22	22	22	22	222
After-tax earnings	70	70	70	70	70	70	70	70	70	70	698
ETR^e	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24
Taxable income ^f	92	92	92	92	92	92	92	92	92	92	920
Pre-tax accounting with tax-exempt financing^a											
PTH											
Year	1	2	3	4	5	6	7	8	9	10	Cum.
Sales	100	100	100	100	100	100	100	100	100	100	1,000
LIHTC losses ^b	(16)	(14)	(12)	(10)	(8)	(6)	(4)	(4)	(4)	(2)	(80)
Pre-tax earnings	84	86	88	90	92	94	96	96	96	98	920
Current tax expense (benefit) ^c	19	20	21	22	22	23	24	24	24	24	222
Deferred tax expense (benefit) ^d	0	0	0	0	0	0	0	0	0	0	0
Total tax expense	19	20	21	22	22	23	24	24	24	24	222
After-tax earnings	65	66	67	69	70	71	72	72	72	74	698
ETR^e	.23	.23	.24	.24	.24	.24	.25	.25	.25	.25	.24
Taxable income ^f	84	86	88	90	92	94	96	96	96	98	920

^a Annual and cumulative differences due to rounding

^b Tax deductions generated by operating losses on the underlying real estate

^c Pre-tax earnings*ETR OR Pre-tax earnings*.35 minus 10 from LIHTCs

^d (Pre-tax earnings minus Taxable income) * .35; if > 0 then a deferred tax expense, if < 0 then a deferred tax benefit.

^e Total tax expense divided by Pre-tax earnings

^f Sales minus LIHTC losses recorded on tax return

Figure 2 (cont.) Sample income statements for intersection of accounting treatment and financing type

After-tax accounting with other financing^a											
ATL											
Year	1	2	3	4	5	6	7	8	9	10	Cum.
Sales	100	100	100	100	100	100	100	100	100	100	1,000
LIHTC losses	0	0	0	0	0	0	0	0	0	0	0
Pre-tax earnings	100	100	100	100	100	100	100	100	100	100	1,000
Current tax expense (benefit) ^b	30	30	30	30	30	30	30	30	30	30	302
Deferred tax expense (benefit) ^c	0	0	0	0	0	0	0	0	0	0	0
Total tax expense	30	30	30	30	30	30	30	30	30	30	302
After-tax earnings	70	70	70	70	70	70	70	70	70	70	698
ETR^d	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Taxable income ^e	92	92	92	92	92	92	92	92	92	92	920
Pre-tax earnings b4 reclassification ^f	92	92	92	92	92	92	92	92	92	92	920
After-tax accounting with tax-exempt financing^a											
ATH											
Year	1	2	3	4	5	6	7	8	9	10	Cum.
Sales	100	100	100	100	100	100	100	100	100	100	1,000
LIHTC losses	0	0	0	0	0	0	0	0	0	0	0
Pre-tax earnings	100	100	100	100	100	100	100	100	100	100	1,000
Current tax expense (benefit) ^b	27	28	29	30	30	31	32	32	32	32	302
Deferred tax expense (benefit) ^c	3	2	1	1	0	(1)	(1)	(1)	(1)	(2)	0
Total tax expense	30	30	30	30	30	30	30	30	30	30	302
After-tax earnings	70	70	70	70	70	70	70	70	70	70	698
ETR^e	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Taxable income ^e	84	86	88	90	92	94	96	96	96	98	920
Pre-tax earnings b4 reclassification ^f	92	92	92	92	92	92	92	92	92	92	920

^a Annual and cumulative differences due to rounding

^b $100 * .35 - 10 + (8-3)$; less deferred taxes if tax-exempt financing

^c $(\text{Pre-tax earnings before reclassification} - \text{Taxable income}) * .35$; if > 0 then a deferred tax expense, if < 0 then a deferred tax benefit.

^d Total tax expense divided by Pre-tax earnings

^e Sales minus LIHTC losses recorded on tax return

^f $100 - 8$; the same regardless of the type of financing used

Table 1
Sample selection and description

Panel A: Sample selection

Total LIHTC transactions in dataset	13,503
(Less) LIHTC transactions before 1994	4,934
(Less) LIHTCs not for corporate distribution	1,526
(Less) projects with tax credits other than federal LIHTCs	379
(Less) incomplete data	<u>1,407</u>
 Sample	 <u>5,257</u>

Panel B: Sample description

Intersection of accounting-type and investor-type distribution channels

	Proprietary	Multi-Investor	Total
After-tax	92	808	900
Pre-tax	1,044	3,313	4,357
Total	1,136	4,121	5,257

Investors purchasing LIHTCs through *Proprietary (Multi-investor)* distribution channels have relatively more (less) transparent disclosure of LIHTC investments in their GAAP financial statements. Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings.

Table 2
Descriptive statistics for dependent and control variables

Panel A: Dependent variable, LIHTC price ^a					
Year	N	Mean	Standard Deviation	10 th percentile	90 th percentile
1994	239	.55	.13	.45	.69
1995	338	.60	.13	.50	.78
1996	359	.60	.11	.52	.73
1997	415	.65	.12	.55	.80
1998	439	.72	.13	.60	.89
1999	490	.76	.11	.67	.89
2000	537	.79	.11	.70	.88
2001	528	.80	.10	.71	.88
2002	489	.81	.09	.75	.89
2003	574	.81	.09	.74	.88
2004	523	.81	.08	.76	.87
2005	326	.83	.07	.78	.89
Sample	5,257	.73	.10	.64	.84

Panel B: Control variables: Pre-tax versus after-tax ^a					
	Variable	Pre-tax	After-tax	Difference in Means	
Region	Midwest	.27	.21	.06	**
	Northeast	.20	.07	.12	**
	West	.20	.26	-.06	**
	South	.33	.46	.12	**
Tenant	Family	.74	.76	-.02	
	Mixed	.02	.02	.00	
	Special_Needs	.01	.01	.00	
	Other	.02	.01	.01	**
	Senior	.21	.21	-.00	
Financing	Tax-Exempt	.10	.36	-.26	**
	Soft_Only	.06	.03	.03	**
	RD	.12	.00	.12	**
	Other	.22	.02	.19	**
	Conventional	.50	.59	-.09	**
Location	Urban	.64	.79	-.15	**
	Suburban	.19	.14	.05	**
	Rural	.13	.03	.10	**
	Units	73.63	139.29	-65.66	**
	Subsidy	.10	.02	.08	**
	Rent_to_Income	.25	.25	.01	
	Vacancy_Rate	.08	.08	.00	
	Income_to_Poverty	.24	.19	.05	**

Table 2
Descriptive statistics for dependent and control variables
(cont.)

Panel C: Control variables: Proprietary versus multi-investor ^a

	Variable	Proprietary	Multi-investor	Difference in Means	
Region	Midwest	.15	.29	-.14	**
	Northeast	.15	.18	-.04	**
	West	.25	.20	.06	**
	South	.45	.33	.12	**
Tenant	Family	.74	.74	.00	
	Mixed	.03	.02	.01	
	Special_Needs	.01	.01	.00	
	Other	.00	.02	-.02	**
	Senior	.22	.21	.01	
Financing	Tax-Exempt	.18	.13	.05	**
	Soft_Only	.06	.05	.01	
	RD	.07	.11	-.05	**
	Other	.11	.20	-.09	**
	Conventional	.58	.50	.08	**
Location	Urban	.67	.67	.00	
	Suburban	.20	.18	.02	
	Rural	.10	.12	-.02	
	Units	95.17	82.03	13.14	**
	Subsidy	.09	.09	.01	
	Rent_to_Income	.26	.25	.00	
	Vacancy_Rate	.09	.09	-.01	
	Income_to_Poverty	.23	.14	.10	**

^a *LIHTC price* is the ratio of the capital contribution to the number of federal LIHTCs purchased. Investors purchasing LIHTCs through *Proprietary (Multi-investor)* distribution channels have relatively more (less) transparent disclosure of LIHTC investments in their GAAP financial statements. Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings. *Region* designates one of four regions of the United States, as defined by the U.S. Census Bureau. *Tenant* designates one of five tenant types occupying the housing project. *Financing* designates one of five types of permanent financing on the underlying housing project. *Location* designates one of three location types in which the housing project is located based on population density, as defined by the U.S. Census Bureau. *Units* is the number of rental units offered by the housing project. *Subsidy* equals one if the housing project receives a government subsidy. *Rent_to_Income* is the ratio of median gross rent to median income in the 5-digit zip code area in which the housing project is located. *Vacancy_Rate* is the rental vacancy rate for market rate apartments in the 5-digit zip code area in which the housing project is located. *Income_to_Poverty* is the percentage of households that have a ratio of median income to poverty level less than 1.25 in the 5-digit zip code area in which the housing project is located. Huber-White standard errors, clustered by sponsor, are in parentheses. *, and ** denote significance at five and one percent levels, respectively (two-tailed).

Table 3
Summary statistics of regression of LIHTC price on distribution channel indicators and control variables^a

N=5257 Variable		Prediction	Coefficient	H_{1N} $\beta_2 = 0$ $\beta_2 + \beta_3 = 0$	<i>p</i> -value
Intercept		+		.7099** (.0441)	
Proprietary		+		.0321** (.0088)	
After_Tax		+	β_2	.0980* (.0422)	$\beta_2 + \beta_3 = 0$ < . 91
Proprietary*After_Tax		-	β_3	-.0967* (.0396)	
Region	Midwest	-		.0047 (.0078)	
	Northeast	+		-.0068 (.0152)	
	West	+		.0051 (.0058)	
Tenant	Family	-		-.0064 (.0071)	
	Mixed	?		-.0155 (.0107)	
	Special_Needs	?		-.0643* (.0237)	
	Other	?		.0067 (.0084)	
Financing	Tax-Exempt	-		.0254** (.0075)	
	Soft_Only	+		.0360** (.0109)	
	RD	?		-.0028 (.0125)	
	Other	?		-.0093 (.0050)	
Location	Urban	?		.0033 (.0061)	
	Suburban	+		.0019 (.0048)	
	Units	+		-.000019 (.000033)	
	Subsidy	+		-.0043 (.0081)	
	Rent_to_Income	+		-.0186 (.0466)	
	Vacancy_Rate	-		.0115 (.0199)	

	Income_to_Poverty	+		-.0387 (.0253)	
	R-Square			.4830	

^a *LIHTC price* is the ratio of the capital contribution to the number of federal LIHTCs purchased. Investors purchasing LIHTCs through *Proprietary (Multi-investor)* distribution channels have relatively more (less) transparent disclosure of LIHTC investments in their GAAP financial statements. Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings. *Region* designates one of four regions of the United States, as defined by the U.S. Census Bureau. *Tenant* designates one of five tenant types occupying the housing project. *Financing* designates one of five types of permanent financing on the underlying housing project. *Location* designates one of three location types in which the housing project is located based on population density, as defined by the U.S. Census Bureau. *Units* is the number of rental units offered by the housing project. *Subsidy* equals one if the housing project receives a government subsidy. *Rent_to_Income* is the ratio of median gross rent to median income in the 5-digit zip code area in which the housing project is located. *Vacancy_Rate* is the rental vacancy rate for market rate apartments in the 5-digit zip code area in which the housing project is located. *Income_to_Poverty* is the percentage of households that have a ratio of median income to poverty level less than 1.25 in the 5-digit zip code area in which the housing project is located. Huber-White standard errors, clustered by sponsor, are in parentheses. *, and ** denote significance at five and one percent levels, respectively (two-tailed)

Table 4
Economic significance of premium on after-tax credits^a

Sample Period: 1994-2005	Multi-Investor Retail Market			Sponsor Compensation		Multi-Investor Wholesale Market
	N	Mean Yield	Mean Price	Load	Guarantee	Mean Price (From Table 3)
After Tax	47	.061	.99	.12	.06	.81
Pre Tax	146	.090	.83	.12	n/a	.71
Total guarantee fee paid by corporate investor						
		.029*	.16*	63 percent of total guarantee fee [10/16] is lower bound on value derived from accounting benefits		
Sponsor's share			.06			
Developer's share			.10			

^a Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings. *Retail Market* transactions occur between corporations and sponsors. *Wholesale Market* transactions occur between sponsors and developers. *, and ** denote significance at five and one percent levels, respectively (two-tailed).

Table 5
Test of effect of cash flow versus book earnings on LIHTC price ^a

Panel A: Summary statistics
Dependent variable is *LIHTC price*

N=5257 Variable		Coefficient	Prediction	H_{2N} $\beta_6 - \beta_4 = 0$	p-value
Intercept	PTL		+	.7076** (.0456)	
Proprietary			+	.0363** (.0107)	
After_Tax	ATL		+	.1049* (.0459)	
Proprietary*After_Tax			-	-.0817* (.0399)	
Tax_Exempt	PTH	β_4	+	.0427** (.0131)	$\beta_6 - \beta_4 = 0$ < .01
Proprietary*Tax_Exempt			?	-.0242 (.0125)	
Tax_Exempt*After_Tax	ATH	β_6	+	.0111** (.0037)	
Proprietary*Tax_Exempt* After_Tax			?	-.0341* (.0133)	
R-Square				.4830	

^a *LIHTC price* is the ratio of the capital contribution to the number of federal LIHTCs purchased. Investors purchasing LIHTCs through *Proprietary (Multi-investor)* distribution channels have relatively more (less) transparent disclosure of LIHTC investments in their GAAP financial statements. Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings. *Tax-exempt* financing provides investors with accelerated depreciation relative to all other forms of financing.

Panel B: Sample description
Intersection of financing type and accounting treatment

	Tax-Exempt	Other	Total
After_Tax	420	577	997
Pre_Tax	323	3,937	4,260
Total	743	4,514	5,257

Investors demanding guarantees purchase LIHTCs through the *After_Tax* distribution channel, where investors report tax deductions in tax expense as offsets to revenue from the LIHTCs. Investors not demanding guarantees purchase LIHTCs through the *Pre_Tax* distribution channel, where investors report tax deductions as reductions to pre-tax earnings. *Tax-exempt* financing provides investors with accelerated depreciation relative to all *Other* forms of financing.