THE EFFECT OF SHAREHOLDER-LEVEL TAXES ON ORGANIZATIONAL FORM AND STOCK OWNERSHIP: EVIDENCE FROM EQUITY CARVE-OUTS OF MASTER LIMITED PARTNERSHIPS

by

STEVEN WILLIAM UTKE

(Under the Direction of Benjamin C. Ayers)

ABSTRACT

Although organizational form choice is a fundamental business decision, prior literature has not examined the role of heterogeneous shareholder-level taxes in this decision and in subsequent changes in investor stock ownership. I investigate the decision to form a master limited partnership (MLP), which is a tax-advantaged entity for some shareholders (tax-sensitive investors) and tax-disadvantaged for others (tax-exempt investors). I first extend existing organizational form literature by showing that, consistent with predictions, shareholder-level taxes influence organizational form choice – i.e., firms with higher levels of shareholders with a tax disadvantage from MLP ownership are less likely to subsequently carve-out MLPs. I next examine investor stock ownership changes after an organizational form change. Consistent with predictions, I find that tax-sensitive investors, on average, decrease their ownership in the parent and own a relatively larger share of the MLP than the parent after the carve-out. In contrast, tax-exempt investors own less of the MLP than the parent after the MLP carve-out. These results provide the first evidence that heterogeneous shareholder-level taxes affect

organizational form decisions and that shareholder-level taxes are associated with fundamental changes in investor bases after changes in organizational form. More broadly, this study provides evidence that firms cater to investors in making organizational form decisions and that investors sort to firms based on firm tax characteristics inherent to organizational form.

INDEX WORDS: Organizational Form, Master Limited Partnerships, Equity Carve-Outs, Tax-Sensitivity

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CHAPTER 1

INTRODUCTION

Understanding a firm's organizational form choice is one of the most fundamental issues in accounting, finance, and economics (e.g., MacKie-Mason and Gordon 1997; Hodder, McAnally, and Weaver 2003; Goolsbee 2004). However, nearly all entities with publicly available information use only the corporate organizational form, limiting researchers' ability to examine determinants of a firm's organizational form choice.[1] As a result, existing organizational form research typically examines decisions of small, private firms (e.g., Ayers, Cloyd, and Robinson 1996; Hodder et al. 2003; Goolsbee 2004) or uses aggregate economy-wide data (e.g., Mackie-Mason and Gordon 1997; Goolsbee 1998) to obtain cross-sectional variation in organizational forms. Although these settings provide insight into entity-level or economy-wide characteristics that influence organizational form choice, these studies cannot investigate the influence of *heterogeneous shareholder-level* taxes on organizational form choice or on investor reactions to organizational form decisions. This study extends the organizational form literature by examining firms that are publicly traded before and after an organizational form choice, allowing explicit consideration of heterogeneous shareholder-level taxes.

[1] Organizational form refers to a business's legal and tax entity type. From a legal perspective, there are a number of organizational forms; for tax purposes, these forms are generally classified as: sole proprietorship, partnership, S-corporation, or C-corporation. Studies often focus on corporate (C-corporation) versus non-corporate (S-corporation, limited partnership, limited liability company, etc.) forms. This study focuses specifically on C-corporation versus limited partnership organizational forms. Although C-corporations make up nearly all publicly traded firms, they make up only 5 percent of businesses representing less than 40 percent of business net income as of 2011 (The Tax Foundation 2014).

Existing literature suggests that a number of tax and non-tax factors influence organizational form decisions. Theoretical studies suggest that taxes, when considered in isolation, can affect organizational form decisions. However, the existence, direction, and magnitude of the effect depends on various tax attributes (e.g., Jones and Taggart 1984; Scholes, Wolfson, Erickson, Maydew, and Shevlin 2009). The relation is further complicated by non-tax factors and heterogeneity in shareholder-level taxes (e.g., Gordon and MacKie-Mason 1994; Scholes et al. 2009). Empirical studies find that *entity-level* taxes can affect organizational form choice (e.g., Terando and Omer 1993; Beatty, Berger, and Magliolo 1995; Goolsbee 2004), but again, the direction and existence of the effect varies across settings. These results could also be affected by *unexplored shareholder-level* tax effects. Consequently, Graham (2003, p. 1103-1104; 2013) calls for "[a]dditional research investigating organizational form choices using firm- and owner-specific tax information." Similarly, while Hanlon and Heitzman (2010) note that taxes appear to be a factor in organizational form choice (p. 156), they simultaneously call for research into how corporate and individual taxes affect organizational form choice (p. 157).

Unlike prior work that examines how firm characteristics affect organizational form choice, I examine how shareholders (principals) affect firms' (agents') organizational form decisions. To my knowledge, this study is the first to empirically investigate whether *heterogeneous shareholder-level* taxes influence organizational form decisions. Because publicly traded firms' managers, not shareholders, make the firms' decisions it is unclear whether prior findings on the effect of entity-level taxes on organizational form extend to heterogeneous shareholder-level taxes in this principal-

agent setting (see Crocker and Slemrod (2005), Chetty and Saez (2005), and Jacob, Michaely, and Alstadsæter (2014) for discussion). Further, non-tax factors influence the organizational form decision, and theory makes no clear prediction on the overall effect of heterogeneous shareholder-level taxes on organizational form choice (e.g., Scholes et al. 2009). Consequently, I empirically investigate the incremental role of shareholder-level taxes in organizational form choice, after controlling for entity-level taxes and other non-tax factors. Although I focus on the incremental role of shareholder-level taxes, my analysis considers other factors that influence a firm's organizational form decision.

This study extends the organizational form literature by explicitly considering the effect of heterogeneous shareholder-level taxes on organizational form choice as well as on investors' reactions to organizational form decisions. I use equity carve-outs of master limited partnerships (MLPs) from publicly traded corporations to examine these effects (Figure 1.1 depicts a typical MLP carve-out).[2] MLPs are publicly traded partnerships that have the limited liability and public financing advantages of corporations, along with the single layer of taxation advantage of partnerships. MLPs can be formed by publicly traded corporations that remain public after creating the MLP, providing an ideal setting for examining firm and investor characteristics in the period leading up to the organizational form (MLP IPO) decision as well as post-IPO investor holdings in the parent corporation and MLP.

[2] Consistent with prior literature (e.g., Schipper and Smith 1986; Miles and Woolridge 1999), the term *carve-out* refers to situations where a firm sells an equity ownership interest in a subsidiary to the public. Carve-outs represent a subset of initial public offerings (IPOs). In this study, I use the terms "carve-out" and "IPO" interchangeably. Carve-outs differ from a) spin-offs, where a firm distributes the stock of a subsidiary to its existing shareholders, b) sell-offs, where a firm directly sells assets to a third party, and c) seasoned equity offerings (SEOs), where a firm sells its own shares.

To examine the effect of shareholder-level taxes on organizational form choice, I estimate a logit regression of the MLP carve-out decision as a function of heterogeneous shareholder-level taxation (i.e., tax-sensitive and tax-exempt ownership) of each firm in the quarter preceding the MLP IPO announcement. To examine if investors' reactions to organizational form changes vary predictably with shareholder-level taxes, I calculate changes in ownership from the quarter before to the quarter after the MLP IPO effective date. My sample consists of MLP equity carve-outs occurring from 1993 to 2013 and an industry-size-year matched sample of control firms that did not carve-out MLPs.

If a firm's investors prefer its existing asset mix, an equity carve-out would not affect investors' stock ownership absent tax effects. This is because investors can achieve the same asset mix by owning the same proportions of the post-divesture parent firm and divested firm as the investor owned in the combined pre-divestiture firm. However, in an MLP carve-out, taxation of the same type of investor *differs* between the post-divestiture parent firm and the divested firm (i.e., the MLP).[3] Direct ownership in the MLP provides tax advantages to tax-sensitive investors and tax disadvantages to tax-exempt investors.[4] Specifically, tax-sensitive investors choosing to own the MLP are taxed annually on only their proportionate share of MLP business income, which typically represents less than

[3] *Ex ante*, there is no reason, other than taxes, to believe that any subset of investors would have a relatively stronger preference for the set of assets divested into an MLP. In Section 5.9, I examine non-MLP carve-outs, where there are no differential tax effects, to support this *ex ante* prediction.

[4] Many studies classify investors as either tax-sensitive or tax-insensitive (e.g., Blouin, Bushee, and Sikes 2013). Classifying investors into just two groups diminishes the inherent tax differences among investors. As discussed in more detail in Sections 2.1 and 5.2, individuals, followed by tax-sensitive institutions (collectively referred to as tax-sensitive investors), derive the most tax benefit from MLP ownership. Tax-exempt entities (a subset of tax-insensitive investors) suffer tax disadvantages. Other institutions do not have clear preferences in this setting. See Section 3.3 for additional discussion of these other institutions. In additional analysis in Section 5.2, I examine tax-sensitive institutions and individuals separately.

20% of MLP cash distributions (e.g., Wells Fargo 2013).[5] In contrast, tax-sensitive investors are fully taxed on corporate distributions. Tax-exempt investors choosing to own the MLP are *also taxed annually* on their proportionate share of MLP business income whereas corporate distributions are *fully tax-exempt*.[6] Further, unlike income from corporate investments (e.g., dividends, gains) which is not considered business income, high levels of business income from an MLP can cause a tax-exempt entity to lose its exempt status.[7] These differences yield clear predictions of how shareholder-level taxes affect both the firm's organizational form choice and investors' subsequent stock ownership decisions.[8] My setting, which allows identification of heterogeneous shareholder-level taxes, also provides insight into whether firms cater to investors when making organizational form decisions. This is an open question given that existing research reaches conflicting conclusions on catering in other settings (e.g., Grinstein and Michaely 2005; Desai and Jin 2011).

Because of the tax advantages (disadvantages) of MLPs for tax-sensitive (tax-exempt) investors and catering theories suggesting that investor preferences can influence firm decisions in other settings (e.g., Baker and Wurgler 2004), the level of tax-sensitive (tax-exempt) ownership could be positively (negatively) related to the MLP IPO

[5] Cash distributions can exceed allocated taxable income because cash flow and taxable income often differ. For example, if depreciation is the only non-cash expense, then cash flow exceeds taxable income.
[6] Upon MLP IPO, tax-exempt investors need not invest in the MLP IPO, but then they would lose their preferred asset mix. Thus, tax-exempt investors face costs upon the MLP IPO: either direct tax costs from MLP ownership or indirect costs from an altered asset mix.
[7] This business income is referred to as "unrelated business taxable income" (IRC Section 511) and is discussed in more detail in Section 2.1. Virtually all tax-exempt entities are subject to tax on this income (IRC Section 511), including Section 501(c) organizations (e.g., charities and endowments) and Section 401(a) organizations (e.g., pensions).
[8] For anecdotal evidence that MLPs are attractive investments for tax-sensitive investors (e.g., individuals), see, e.g., Urken (2012) and Fessler (2014). For anecdotal evidence that MLPs are disfavored by tax-exempt investors, see, e.g., Tate (2014).

decision.[9] Alternatively, prior research suggests that, at least in some settings, managers choose actions specifically to attract new investors (e.g., Barclay, Pearson, and Weisbach 1998; Allen, Bernardo, and Welch 2000; Bergstresser and Poterba 2002; Le and Lin 2014). If managers act to attract new investors in my setting, parent firms with relatively low tax-sensitive ownership could use a tax-advantaged MLP IPO to attract more of these investors. Therefore, I make no prediction on the relation between tax-sensitive ownership and an MLP IPO because firms could either cater to their existing tax-sensitive investors (positive relation) or seek to attract new tax-sensitive investors when they have few (negative relation). Unlike the potential competing relations for tax-sensitive ownership, an MLP is unlikely to attract new tax-exempt investors. Thus, based upon catering theories, I predict a negative relation between tax-exempt ownership and an MLP IPO. However, the result for tax-exempt investors is not a foregone conclusion. While tax-exempt investors (e.g., pensions) tend to be large, potentially increasing their influence over firms, existing research finds no evidence that firms cater to these investors' tax preferences (e.g., Grinstein and Michaely 2005).

Consistent with shareholder-level taxes influencing organizational form decisions (and firms catering to existing investors), I find that the greater a parent firm's pre-carve-out tax-exempt investor base, the less likely a firm is to form an MLP.[10] For a one standard deviation increase in tax-exempt ownership across the mean tax-exempt

[9] Anecdotal evidence suggests that investors do attempt to influence firms' organizational form choices. For example, activist hedge funds Casablanca Capital and Icahn & Company have pushed for firms to form MLPs (Wethe 2013; StreetInsider 2014). Further, conference calls indicate that firms are aware of investor interest in their MLP carve-out decisions (see, e.g., EQT 2011 and QEP Resources 2012) and consider shareholder interests in making MLP carve-out decisions (see, e.g., TransMontaigne 2004).

[10] An alternative explanation is that this result is driven by public pensions' preferences for control (e.g., Gillan and Starks 2000); MLP owners have limited control rights. This explanation seems unlikely because these investors can control the MLP indirectly through ownership of the parent firm while also owning a direct interest in the MLP. See Section 5.1 for further discussion and analysis that addresses this alternative explanation.

ownership, firms are 20% less likely to form an MLP. I generally find little evidence that tax-sensitive investors affect organizational form choice. However, some robustness tests provide evidence that tax-sensitive ownership is negatively related to the MLP IPO decision, suggesting that firms form MLPs to attract new tax-sensitive investors.

Investors not only influence firm policy, they also *react* to changes in firm policy. My second research question focuses on how investor bases change following an MLP IPO. I provide the first evidence on the role that taxes play in investor stock ownership decisions following organizational form changes, as well as additional insight into whether investors sort into firms with certain characteristics (e.g., Dhaliwal, Erickson, and Trezevant 1999).[11]

I expect that tax-sensitive (tax-exempt) ownership in the MLP will be larger (smaller) than in the parent after the carve-out due to a) existing tax-sensitive investors shifting their ownership to the MLP, b) existing tax-exempt investors avoiding ownership of the MLP, and c) new tax-sensitive investors purchasing MLP units. For tax-sensitive investors to shift some of their parent firm ownership to the tax preferred MLP, I expect that they will sell a portion of their existing parent shares, decreasing tax-sensitive ownership in the parent firm.[12] Once again, these expected results are not foregone conclusions. Non-tax factors could override tax factors. First, if existing investors prefer the pre-divestiture firm's existing asset mix, then they have an interest in owning MLP assets and taxes need not drive the investment decision. Second, MLPs have very low correlations with other asset classes (e.g., Morgan Stanley 2013) making them attractive

[11] As with the catering literature, evidence that investors sort to firms based on tax factors is limited. See Allen and Michaely (2003) for a review of the sorting literature.
[12] Section 5.3 explicitly tests tax-sensitive institutions shifting their ownership from the parent to the MLP. Due to data limitations, I am unable to explicitly test shifts in ownership for individuals.

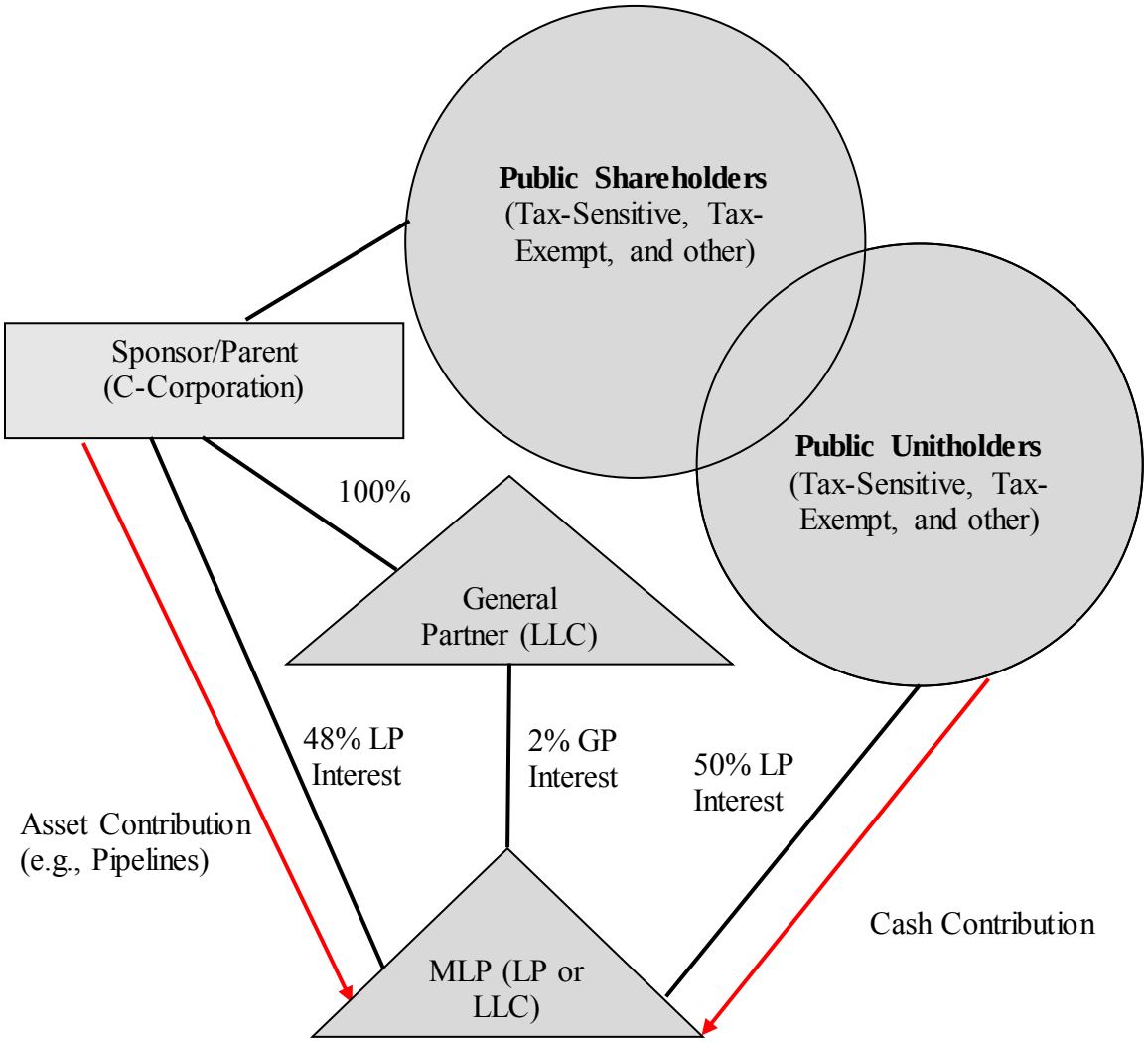
to investors seeking diversification; tax-exempt investors often focus on diversification (e.g., CalPERS 2003). Therefore, asset allocation decisions could dominate tax consequences in this setting. Finally, MLP investments can impose additional compliance costs that tax-sensitive individual investors are not equipped to handle (e.g., Dale 2013) relative to larger institutional investors, possibly reducing tax-sensitive individuals' willingness to invest.

Consistent with a fundamental change in a firm's investor base following an organizational form change (and sorting), I find that tax-sensitive investors, on average, reduce ownership in the parent and take larger ownership positions in the MLP following an MLP IPO and that tax-exempt investors own a smaller percentage of the MLP than the parent. Tax-sensitive investors decrease their ownership in the parent by 3.2% from the quarter before to the quarter after the MLP IPO. In the quarter following the MLP IPO, tax-sensitive investors, including former owners of the parent firm as well as new investors, own 43.2% more of the MLP than the parent while tax-exempt investors own 1.8% less of the MLP than the parent. These results suggest that shareholder-level taxes play an important role in investors' ownership decisions for both the parent and the MLP around an organizational form change.

While prior literature examines the effect of *entity-level* taxes on organizational form, I contribute to the organizational form literature by examining the effect of *heterogeneous shareholder-level* taxes on organizational form using a setting where I can identify share ownership before and after an organizational form change. I provide evidence that cross-sectional differences in shareholder-level taxation significantly affect the way firms organize their operations. Additionally, my study suggests that

shareholder-level taxes influence stock ownership decisions, resulting in fundamentally different investor bases across differentially taxed assets. This study answers calls for additional research on shareholder-level taxes and organizational form choice (Graham 2003, 2013; Hanlon and Heitzman 2010) as well as calls for research on how taxes affect stock ownership (Bank and Cheffins 2008). My results also contribute to the broader literature on catering (by firms) and sorting (by investors). From a policy perspective, this evidence suggests that key differences in investor tax policy across entity types has a nontrivial effect on organizational form decisions, as well as on investors' stock ownership decisions.

Figure 1.1 Typical MLP IPO Structure



Upon IPO, the sponsor contributes assets to the MLP in return for GP units and LP units. The parent may also receive cash distributions. The public contributes cash in return for LP units. The GP interest retained by the parent is typically 2%. The percentage of LP units held by the parent can vary; 48% is used for illustrative purposes. The set of public unitholders includes some of the public shareholders.

CHAPTER 2

BACKGROUND, PRIOR LITERATURE, AND HYPOTHESES

2.1. Background on MLPs

In 1981, Apache Corporation created the first MLP, Apache Petroleum Company. MLPs proliferated throughout the early and mid-1980s because any firm could form an MLP and these MLPs were essentially tax shelters (e.g., Wolfson 1985) that allowed partners to deduct the MLP's operating losses against the partner's own income. The proliferation of 1980s MLPs ended abruptly due to tax reforms in 1986 and 1987 (e.g., Schiffres 1989; Terando and Omer 1993). The Tax Reform Act of 1986 limits a partner's ability to deduct a partnership's losses if the partner does not materially participate in the partnership's business.[13] This reform curtailed the tax benefits previously received by MLP investors, reducing the attractiveness of MLPs. The Revenue Act of 1987 (also known as the Omnibus Budget Reconciliation Act of 1987) restricts entities eligible for MLP status to businesses generating specific types of qualifying income.[14] As a result, the vast majority of MLPs created after 1987 operate in the oil and gas industry (e.g., pipelines), and very few 1980s MLPs remain in existence.

Although tax reforms in the 1980s reduced a firm's ability to form an MLP, MLPs are now a large and growing component of the U.S. economy. In 2013, there were

[13] IRC Section 469. These rules are commonly referred to as the passive activity loss rules.
[14] IRC Section 7704. Qualifying income generally includes passive income and income from natural resources. In considering which types of income would qualify for MLP treatment, Congress explicitly considered the types of businesses typically operating in non-corporate form as well as the need to provide incentives for private sector investment in energy infrastructure (e.g., Rangel 1988; Morgan Stanley 2013).

20 MLP IPOs which raised $7.5 billion, compared to the previous record of 13 MLP IPOs in 2007 (Duffy 2013). In 1996, the total market capitalization of MLPs was $8 billion compared to over $450 billion in 2013 (Morgan Stanley 2013). Further, as of 2013, MLPs were the top job creating sector in the U.S. economy (ClearBridge Investments 2013). Unlike the limited life tax shelter MLPs of the 1980s (e.g., Shaw and Wier 1993), modern MLPs are viable going concerns. Modern MLPs are increasingly relevant to the economy and substantially different from 1980s MLPs.

Modern MLPs are typically formed through equity carve-outs where a parent corporation places some of its assets into a separate entity which is then sold to the public through an IPO.[15] Figure 1.1 presents the typical MLP IPO structure. Upon IPO, the corporate parent (i.e., the sponsor) contributes assets to the MLP in exchange for the general partner (GP) interest in the MLP as well as a portion of the limited partner (LP) units. The public, potentially including some of the corporate parent's existing shareholders, contributes cash to acquire the remaining LP units. Generally, the parent must consolidate the MLP for financial reporting purposes following the IPO because the parent owns the controlling general partner interest and typically retains 50% or more of the total partnership units (see, e.g., Miles and Woolridge 1999 for a general discussion of equity carve-outs).

An MLP carve-out provides only limited direct tax advantages to a parent firm; most of the benefits accrue indirectly through the parent's access to tax-advantaged

[15] An MLP can also be formed as a spin-off from a corporation or as a complete conversion to an MLP instead of a carve-out. These types of formation transactions were common in the 1980s but are rare in later periods because of the 1986 and 1987 tax acts. Conversions and spin-offs are excluded from my sample. Michaely and Shaw (1995) examine the choice between a spin-off and equity carve-out for 1980s firms that create an MLP. Michaely and Shaw (1995) do not examine the initial decision to form an MLP.

financing through the MLP.[16] The immediate tax advantage to the parent is the option to receive, under several circumstances, untaxed or low taxed cash proceeds upon initial asset contribution to the MLP (Fields, Belanger, and Lee 2010a). This defers gains which would have been recognized if the parent directly sold the assets to a third party and, because MLPs have less tax impounded into price, provides the parent with a relatively larger amount of financing than selling its own shares. Once the MLP begins operations, taxable income is allocated to the parent as if the parent directly owned and operated its share of the MLP's assets, providing the parent no tax advantage. A tax disadvantage arises, relative to continuing to hold the assets in corporate form, because tax rules require that any gain deferred by the parent at the MLP formation be amortized into the parent's income by the end of the depreciable life of the assets contributed to the MLP.[17]

On the other hand, an MLP carve-out provides significant tax advantages to tax-sensitive investors. MLPs typically pay high distributions relative to corporate dividends due to the lack of the requirement to pay corporate income taxes on the MLP's profits. Furthermore, a portion of MLP distributions are tax deferred. Only the partner's allocated share of income is taxable, and cash distributions exceed the allocated share of income fivefold, on average (Wells Fargo 2013; Morgan Stanley 2013). To the extent cash distributions exceed allocated income, the partner's tax basis is reduced, deferring income recognition until sale of the MLP units.

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[16] The financing advantage can be thought of as arising from the removal of the entity-level tax burden. Therefore, MLP carve-outs provide tax-advantaged financing relative to corporate carve-outs or corporate share issuances. Parent firms expect to receive more cash by selling units of an MLP IPO than shares of a comparable C-corporation IPO (or their own shares) because corporate taxes are not impounded in the MLP's valuation. This advantage also carries over to MLP unit issuances after the IPO. Denis and Sarin (2002) provide empirical evidence that MLPs enjoy valuation premiums over comparable C-corporations.

[17] IRC Section 704(c) and related Treasury Regulations. The explanation above is an extreme oversimplification of the process, which is technically referred to as the remedial method of partnership income allocation. Refer to Fields, Belanger, and Lee (2010b) and Lind, Schwarz, Lathrope, and Rosenberg (2008) for additional details.

While the MLP structure is beneficial to tax-sensitive investors, the MLP structure is *disadvantageous* to tax-exempt investors. Because of the flow through of income in a partnership structure, where income retains its character upon allocation to partners, MLP income is often *taxable* to tax-exempt shareholders. Specifically, income categorized as "ordinary," such as income from business activities, is considered unrelated business taxable income (UBTI) and becomes taxable for otherwise tax-exempt organizations. Further, tax-exempt organizations receiving "substantial" amounts of UBTI are at risk of losing their tax-exempt status.[18] These shareholder-level taxation differences yield clear predictions related to taxation and enable an examination of how shareholder-level taxes affect both firm and investor decisions.

2.2. Prior Literature and Hypotheses

2.2.1. Taxes and Organizational Form

Existing literature suggests that a number of tax and non-tax factors influence organizational form decisions. Theoretical studies suggest that taxes, when considered in isolation, can affect organizational form decisions. However, the existence, direction, and size of the effect vary based on an asset's endowment of tax deductions (e.g., Jones and Taggart 1984), the *expected* corporate, personal, and preferential tax rates, as well as the

[18] Additionally, gains on the sale of MLP units can be reclassified to ordinary income (IRC Section 751) which is also taxable UBTI. Though there is no bright-line test for substantial UBTI, practitioners suggest that UBTI in excess of 20% of a tax-exempt organization's gross income presents risks, while UBTI in excess of 50% of gross income makes it difficult to defend tax-exempt status (Hurwit and Associates 2014).

expected investment horizon (e.g., Scholes et al. 2009).[19] The relation is further complicated by non-tax factors and heterogeneity in shareholder-level taxes (e.g., Gordon and MacKie-Mason 1994; Gordon and Slemrod 2000; Scholes et al. 2009). Accordingly, while theory suggests that taxes can affect organizational form choice, it is unclear whether, how (i.e., in what direction), and how much (i.e., after considering other factors) taxes will affect organizational form choice (e.g., MacKie-Mason and Gordon 1997, p. 480, 481; Scholes et al. 2009, p. 112).

Several empirical studies examine whether, how, and how much *entity-level* taxes influence organizational form choice.[20] Most closely related to this paper, Terando and Omer (1993) model the decision to form an MLP as a function of firm size, leverage, corporate taxes, and cash flow.[21, 22] Terando and Omer (1993) find some evidence that firms with higher tax rates, leverage, and cash flow are more likely to form MLPs. Shevlin (1987) and Beatty et al. (1995) examine the corporate decision to form a research and development (R&D) partnership. Unlike MLPs, R&D partnerships are usually not consolidated with the parent firm, providing off-balance-sheet financing. Shevlin (1987)

[19] Even the seemingly obvious statement that, from a tax perspective, investors are better off avoiding the double taxation associated with corporate forms is, in fact, only true under certain conditions (Scholes et al. 2009, p. 98).

[20] In this study, entity-level taxes refer to corporate taxes. Elschner (2013) examines how an entity-level tax that can apply to corporate and non-corporate entities affects organizational form choice. She finds mixed results, consistent with the organizational form literature examining corporate taxes.

[21] Guenther (1992), Gentry (1994), and Omer and Terando (1999) investigate differences between MLPs and corporations *after* the formation of the MLP. They report that MLPs have lower return on assets, lower debt, and higher payout ratios than matched corporations. These papers focus on differences across organizational forms, as opposed to the organizational form choice, and do not consider shareholder-level taxes or stock ownership.

[22] Damodaran, John, and Liu (1997) examine how leverage, dividends, divestitures, and investments change when real estate firms change organizational forms between "tighter" structures (e.g., REITs which have qualifying income and payout requirements) and "looser" structures (corporations). They find that dividend yields decrease, while asset sales and purchases increase for firms shifting to looser structures compared to firms shifting to tighter structures. Again, these authors focus on differences across organizational forms, as opposed to the organizational form choice, and do not consider shareholder-level taxes or stock ownership.

and Beatty et al. (1995) find evidence of off-balance-sheet and financing motivations for R&D partnerships, as well as some evidence of a tax motivation. Specifically, estimated coefficients on entity-level taxes (when significant) are *negatively* related to the decision to form an R&D partnership. While Terando and Omer (1993) suggest that firms form partnerships to avoid taxes themselves, Shevlin (1987) and Beatty et al. (1995) suggest firms form partnerships when the firm is least likely to benefit from available tax deductions. These papers do not examine the relation between shareholder-level taxes and organizational form, nor do they examine investor stock ownership following partnership formation. My study is the first to examine investor base changes following organizational form changes; prior literature is generally unable to investigate investor reactions to organizational form changes due to the use of private firm settings or aggregate economy-wide data.

For small, private firms, prior literature uses IRS data to examine the choice between a C- and S-corporation, as well as S-corporation conversions.[23] Like partnerships, S-corporations are subject to only one layer of taxation. There is generally a positive association between entity-level tax rates and S-corporation formations and conversions (Scholes and Wolfson 1991; Plesko 1994, 1995a, 1995b; Carroll and Joulfaian 1997; Omer, Plesko, and Shelley 2000; Hodder et al. 2003).[24] Data limitations prevent identification of the owners of pre-conversion C-corporations in these studies. As such, these studies cannot examine heterogeneous shareholder-level taxes.

[23] Most prior research, like my study, is unable to examine the initial organizational form choice but instead examines a choice made subsequent to an entity's initial formation. See Plesko (1994) for an exception.
[24] Some prior organizational form studies estimate the corporate tax burden relative to the individual tax burden, assuming all investors are homogenous (e.g., only individuals). Similar assumptions are made when using aggregate data (e.g., MacKie-Mason and Gordon 1997).

Ayers et al. (1996) find only partial support for taxes influencing the organizational form choice between partnership, C-, and S-corporation for small businesses. Goolsbee (2004) examines the corporate share of firms in the retail industry and finds that higher corporate taxes reduce the corporate share of firms, but only for firms with one business location (i.e., small firms). Similarly, Goolsbee and Maydew (2002) examine potential real estate investment trust creation and find that, given non-tax costs, tax incentives likely induce action for only a specific subset of firms. This suggests that taxes are, at best, a second-order factor in firm decisions (e.g., Myers, McConnell, Peterson, Soter, and Stern 1998). Non-tax factors such as business risk, liability risk, and the ability to raise equity capital also influence organizational form choice (e.g., Ayers et al. 1996; Hodder et al. 2003). None of these studies examine heterogeneous shareholder-level taxes.

In summary, while these studies generally find that *entity-level* taxes can affect organizational form choice, the direction and existence of the effect varies across settings (in addition to possibly being affected by unexplored shareholder-level tax effects).[25] Because publicly traded firms' managers, not shareholders, make the firms' decisions it is unclear whether findings on the effect of entity-level taxes on organizational form extend to heterogeneous *shareholder-level* taxes in this principal-agent setting (see, e.g., Crocker

[25] In their discussion of historical developments in corporate ownership, Bank and Cheffins (2008) suggest that taxes partly drive private equity firms' decision to organize as partnerships. However, they do not quantify the potential effect or its influence relative to non-tax factors. Specifically, first-order effects for the use of partnerships by private equity firms include the general partner's ability to control the partnership with only a very small capital contribution and the ability to create compensation structures required to attract talented employees (e.g., Fenn, Liang, and Prowse 1997). Further, a number of private equity funds exist in which the "carried interest" is not taxed preferentially, indicating the existence and size of the tax effect in the organizational form decision, if any, is unclear after considering non-tax factors.

and Slemrod (2005)).[26] Further, non-tax factors influence the organizational form decision, and theory makes no clear prediction on the overall effect of heterogeneous shareholder-level taxes on organizational form choice (e.g., Scholes et al. 2009). Consequently, Graham (2003, 2013) and Hanlon and Heitzman (2010) call for additional research on the effect of entity- and shareholder-level taxes on organizational form.

2.2.2. Investor Preferences, Taxes, and Firm Policy

Several studies investigate whether firms cater to their *own* shareholders' preferences, whether shareholders sort themselves into firms with given characteristics, or whether both effects occur.[27] For example, Dhaliwal et al. (1999) find that institutional ownership, their proxy for tax-insensitive investors, increases following dividend initiation. This suggests sorting based on investor dividend taxation. Hartzell and Starks (2003) find evidence that increases in institutional ownership result in subsequent changes in executive compensation (catering). They find no evidence that changes in compensation lead to changes in institutional ownership (sorting) although they find that institutions generally own firms with certain compensation characteristics.[28] Grinstein

[26] A few studies examine how taxes affect the decisions of individuals to incorporate. For example, Romanov (2006) finds that increased personal income rates result in an increase in incorporation by individuals, but only for those individuals in the top one percent of the income distribution. My study differs substantially from that research because I examine decisions of widely-held firms whose owners have heterogeneous shareholder-level taxes.

[27] A separate set of studies examine how taxation of the shareholders of an acquisition target, as opposed to a firm's *own* shareholders, affect merger and acquisition activity. For example, Ayers, Lefanowicz, and Robinson (2003, 2004, 2007) find that acquisition premiums for taxable acquisitions are increasing in target shareholder tax rates, that the likelihood of taxable acquisition is decreasing in target shareholder taxes, that corporations time their acquisitions around tax rate changes to minimize target shareholder taxes, and that overall acquisition activity is decreasing in tax rates. These papers examine transactions and investor bases substantially different from those examined in my paper.

[28] There is a large literature on the monitoring role of institutional investors (e.g., Bushee 1998). While this literature is tangentially related to the catering and sorting literature, I focus my discussion in this section on literature explicitly focused on catering or sorting (or both), especially related to taxes. The findings in the monitoring literature would generally support the existence of catering, if institutional ownership

and Michaely (2005) find that institutional investors prefer dividend paying stocks with low dividends. However, they find no evidence that institutional owners invest in firms that increase dividends (sorting) or that high institutional ownership causes firms to alter their payout policy (catering). Desai and Jin (2011) use heterogeneity in the taxation of institutional owners and find that increases in dividend yield reduce a firm's ownership by dividend-averse investors (sorting) and that decreases in the proportion of a firm's dividend-averse investors lead to increases in the firm's dividend yield (catering).

While most literature suggests that firms cater to existing investors, a smaller stream of literature suggest that managers adjust policies to attract new investors. In other words, managers cater to non-shareholders. For example, Barclay et al. (1998) suggest that mutual fund managers reduce the total amount of capital gains available for realization, at the expense of existing shareholders, to attract new shareholders. Allen et al. (2000) argue that managers will pay dividends to attract certain investors. Le and Lin (2014) suggest that managers set IPO prices to attract certain investors.

Four concurrent working papers examine catering and sorting. Using U.K. tax law changes which had varying effects across different types of investors (e.g., individuals, pensions, etc.), Geiler and Renneboog (2014) find no evidence of catering or sorting based on shareholder-level taxation of corporate payouts. Howard, Pancak, and Shackelford (2014) exploit a tax law change for foreign investors in U.S. firms which resulted in varying tax rates based on the investor's home country. They find that ownership of U.S. firms increased more for investors in countries experiencing larger tax rate decreases (sorting). They also find that managers of firms with relatively higher tax

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influences managerial decisions, or sorting, if institutions invest in firms with given governance or financial characteristics.

rate foreign investors recognize relatively less taxable income (catering). Jacob et al. (2014) examine closely held Swedish corporations and find evidence of catering in corporate payouts following a tax law change, but only for firms with less than five owners.[29] Li, Liu, Ni, and Ye (2014) find that, following a Chinese tax law change, firms are more likely to increase their dividends when their investors are more likely to face a lower dividend tax rate (catering). While these papers examine different settings than this study, the continuing research in this area indicates the importance of understanding catering and sorting to more fully understand firm and investor behavior.

I extend organizational form research to modern MLPs, which represent viable, economically important businesses with limited ability to provide tax shelters to investors.[30] In contrast to prior organizational form literature, I focus on the effect of heterogeneous shareholder-level taxes on the organizational form choice, which Scholes et al. (2009) have identified as a factor that likely complicates the ultimate effect, if any, of taxes on organizational form choice. MLPs provide limited direct tax benefits to parent firms, but provide clear tax benefits (disadvantages) to tax-sensitive (tax-exempt) investors. Given the importance of the organizational form choice for businesses and their investors, I contend that heterogeneous shareholder-level taxes are likely an important, but empirically unexplored determinant of organizational form. Because MLPs generally provide tax benefits to tax-sensitive investors, firms with a higher proportion of tax-sensitive investors could be more likely to form an MLP to cater to

[29] This is true even when the shareholders have homogenous tax preferences, indicating that the effect of taxes on corporate policy is less clear in a principal-agent setting.
[30] Gentry (1994) notes that examining alternative organizational forms requires viable alternative forms, which may not have been the case with limited life 1980s MLPs (e.g., Shaw and Wier 1993).

these existing investors.[31] Alternatively, firms with low tax-sensitive ownership could intend to attract a new set of tax-sensitive investors by forming an MLP. Therefore, I present my hypothesis on the relation between tax-sensitive ownership and MLP formation in the null.

> **H1a**: A firm's level of tax-sensitive ownership is not related to the firm's decision to form an MLP.

Because MLPs provide tax disadvantages to tax-exempt investors, I expect that firms with a higher proportion of tax-exempt owners will be less likely to form an MLP. In contrast to tax-sensitive investors, firms are unlikely to attract new tax-exempt investors by forming MLPs; therefore, I make a directional prediction regarding tax-exempt ownership based upon catering theories.

> **H1b**: Firms with higher levels of tax-exempt ownership are less likely to form an MLP.

However, this hypothesis is not a foregone conclusion. While tax-exempt investors (e.g., pensions) tend to be large, potentially increasing their influence over firms, existing research finds no evidence that firms cater to these investors' tax preferences (e.g., Grinstein and Michaely 2005).

I also use my MLP carve-out setting, where firms make an important, fundamental business decision, to provide additional insight on whether investors sort to firm tax characteristics. As discussed above, prior literature finds mixed evidence on whether investors sort to firms based on tax characteristics (see also Allen and Michaely

[31] See also DeAngelo, DeAngelo, and Skinner (2008a, b) for a review and discussion of the generally mixed results on catering in dividend policy.

(2003) for a review). Evidence suggesting that investors sort, based on shareholder-level taxes, in my organizational form setting has important implications; specifically, tax differences associated with alternative organizational forms can result in substantial differences in investor bases. As discussed in Section 2.1, tax-sensitive investors generally have a preference for ownership in an MLP, while tax-exempt investors have a clear disincentive to own an MLP. Therefore, I expect that, upon the IPO of an MLP, a) tax-sensitive owners will shift their ownership away from the parent and towards the MLP,[32] b) tax-exempt owners will avoid ownership of the MLP, and c) new tax-sensitive owners that previously avoided the parent firm will invest in the MLP. I propose the following hypotheses:

> **H2a**: The tax-sensitive proportion of ownership of the parent firm will decrease after the formation of a tax-preferred entity.
> **H2b**: The tax-sensitive (tax-exempt) proportion of ownership of the tax-preferred entity will be higher (lower) than the tax-sensitive (tax-exempt) proportion of ownership of the parent entity.

Despite the tax advantages (disadvantages) to tax-sensitive (tax-exempt) investors in my setting, these hypotheses are not certain to hold. First, if existing investors prefer the pre-divestiture firm's existing asset mix, then they have an interest in owning MLP assets and taxes need not drive the investment decision. Second, MLPs have a very low correlation with other asset classes (e.g., Morgan Stanley 2013) making them attractive to investors seeking diversification; tax-exempt investors often focus on diversification

[32] I assume that tax-sensitive investors are risk averse and do not have access to unlimited amounts of costless capital (e.g., Shleifer and Vishny 1997). That is, tax-sensitive investors must sell some shares in the parent to purchase shares in the MLP.

(e.g., CalPERS 2003).[33] Therefore, asset allocation decisions could dominate tax consequences in this setting.[34] Finally, MLP investments can impose additional compliance costs that tax-sensitive individual investors are not equipped to handle (e.g., Dale 2013) relative to larger institutional investors, possibly reducing tax-sensitive individuals' willingness to invest.

[33] Discussions with a tax-exempt investor indicate that the investor invests in MLPs for total return and diversification purposes, consistent with basic finance theory (e.g., Markowitz 1952; Sharpe 1964).
[34] For example, see Morgan Stanley (2013, p. 22) for a brief list of pensions willing to invest in MLPs. Empirically, however, only a small minority of tax-exempt entities are willing to incur UBTI from investments such as MLPs. IRS statistics indicate that there are over 1,300,000 tax-exempt organizations and 700,000 pensions as of 2010. However, less than 20,000 tax-exempt entities (1%) reported positive UBTI in 2010 (the latest year with available data). In addition to imposing direct tax costs on tax-exempt entities, UBTI can present tax compliance challenges for otherwise tax-exempt entities (e.g., IRS 2013).

CHAPTER 3

RESEARCH DESIGN

3.1. Sample Selection

I identify MLPs by examining the National Association of Publicly Traded Partnerships (NAPTP 2014) listing of currently traded MLPs. I supplement this list with currently traded MLPs according to industry publications (Morgan Stanley 2013; Wells Fargo 2013; Yield Hunter 2014) and listings specifically containing MLP IPOs (MLP Guy 2009; Schulte 2012; Latham and Watkins 2013; Vinson and Elkins 2014). Finally, I search IPOScoop's and Jay Ritter's lists of IPOs beginning in 1993 for terms common to MLPs: LP, L.P., Midstream, Pipeline, Pipe Line, Partner, Ptr, and Prt. This process resulted in 133 potential MLP IPOs. I eliminate entities electing to be taxed as corporations, publicly traded general partners of MLPs, MLPs created by entities that are not publicly traded corporations, and MLPs created by spin-off instead of IPO. Because the vast majority of MLPs are in the energy industry, I eliminate MLPs created by a parent whose main business is not energy related (e.g., Wendy's Co.). This yields 39 parent/MLP IPO combinations.[35] Table 3.1 presents the sample selection process.

To obtain a control sample for the parent firms, I follow Terando and Omer (1993) and Omer and Terando (1999) and match on industry, size, and year. I use four-

[35] An alternative design would involve comparing investor bases of firms that carve-out MLPs to firms that carve-out C-corporations. Because tax law requires MLPs to hold certain types of assets, I cannot validly compare the decisions of a parent and control firm when the control firm is prohibited from forming an MLP.

digit SIC to match industry, total assets to match size, and the MLP announcement year (obtained from Factiva searches) to match the year. Because of the nature of four-digit SICs in the energy industry, I allow more than one SIC when appropriate. For example, SIC 4922 (Natural Gas Transmission) and SIC 4923 (Natural Gas Transmission and Distribution) are interchangeable. Following Terando and Omer (1993), I eliminate all potential matches that own an interest in an MLP at any point during my sample period. I initially match all firms within plus or minus 20% of the parent's assets in the MLP announcement year. As discussed in Section 2.1, tax rules limit the types of assets held in MLPs to certain passive activity and natural resource assets. Therefore, from this tentative list of control firms, I review 10-Ks to verify that the control firm owns assets that match those of the MLP formed by the parent firm. For example, SIC 2911 is petroleum refining. Many refiners created pipeline MLPs (e.g., Sunoco, Valero). However, not every refiner owns pipelines; therefore, in this example, I require that the control refiner owns pipelines. For firms without matches, I expand my matching to control firms within plus or minus 60% of assets.[36] I match all but 8 parent firms, leaving a total of 31 parent firms. Following Terando and Omer (1993), I use "one-to-many" matching, allowing for multiple matches to my parent firms.[37] My control sample consists of 43 matched firms. The control sample is only required for testing my first

[36] Omer and Terando (1999) do not use a threshold percentage for matching on assets. I impose a limit to ensure reasonable matches and avoid matching MLP parents to control firms that are many times larger or smaller. Only two control firms fall outside of the plus or minus 50% of assets range and only five control firms fall outside of the plus or minus 40% of assets range. I present and discuss robustness tests dropping both sets of control firms (and the corresponding MLP parent) in Section 4.2. With one exception not related to my hypotheses, results are robust using only matches within 40% or 50% of assets.

[37] See also Roberts and Whited (2013, p. 556) for a discussion of matching procedures. They argue that choosing as many matches as possible without sacrificing accuracy is ideal. They note one way of doing this is selecting all matches within a defined radius of the parent firm, as I do here. In Section 4.2, I also present results using one-to-one matching. My main inferences are unchanged.

hypothesis on the decision to form an MLP. The remaining tests are not limited to firms with matched controls and consist of the 39 parent/MLP IPO combinations.

3.2. Descriptive Statistics: MLPs, the Energy Industry, and Institutional Ownership

Because my sample is relatively small, I provide a number of descriptive statistics to compare my MLP sample with the energy industry and MLPs overall.[38] I also present overall data on institutional ownership in MLPs and the energy industry over time. Table 3.2, Panel A, columns 1 and 2 show that at the beginning of the sample period, MLPs comprise less than 1% of the energy industry. The low percentage of MLPs in the early 1990s follows the Tax Reform Act of 1986 and the Revenue Act of 1987, which decreased investor interest in MLPs by reducing the tax benefits of MLP ownership and limiting the types of assets eligible to be held in MLPs. Beginning around 2000, the steady increase in assets held by MLPs is apparent, with substantial growth occurring from 2011 to 2013.

Table 3.2, Panel A, columns 3 and 4 show the percentage of the total MLPs (from columns 1 and 2) included in my final sample. This percentage is very low initially due to a few 1980s MLPs, which are excluded from my sample, existing into the 1990s. Beginning in 1995 my sample captures about 20% of total MLPs, with the percentage increasing to around 30% at sample period end. As noted in Table 3.1, I cannot capture a

[38] Although my sample is small relative to many accounting studies, the size is consistent with prior MLP studies with similar data requirements. Sample sizes of prior studies range from 15 unique MLPs (Denis and Sarin 2002) to 53 unique MLPs (Denning and Shastri 1993), with a median sample size of 25 for the 10 MLP studies cited in this paper (including Moore, Christensen, and Roenfeldt (1989), Rao and Krishnan (1993), and Shelley, Omer, and Atwood (1998) which examine market reaction to MLP announcements). Some other studies examining tax based reactions for certain asset classes have a similar sample size (e.g., Erickson and Maydew 1998, sample size of 51 preferred stocks).

higher percentage of MLPs largely because many MLPs were not created by publicly traded corporations. In sum, MLPs are increasingly important in the economy (e.g., leading job growth (ClearBridge Investments 2013)), as well as in the energy sector, holding about one fifth of all energy assets by 2013.

Table 3.2, Panel B presents data on institutional ownership in the energy industry and institutional ownership of MLPs by year. Table 3.2, Panel B, column 1 shows that institutional ownership of all energy firms ranges from 27% to 51%. This falls approximately 20% below overall institutional ownership, which increased from about 45% in 1993 to 72% in 2006 (Gillan and Starks 2007). Table 3.2, Panel B, column 2 shows that institutional ownership of MLPs is much lower than institutional ownership of the average energy firm. However, institutions do not completely avoid MLPs; ownership averages between 5% and 11% from 1993 to 2003 with a broad range each year. The maximum institutional ownership reaches nearly 40% in several years during this timeframe. Institutional ownership of MLPs begins increasing rapidly in 2004; for years after 2005 the average ownership ranges from 24% to 38% and the maximum ownership exceeds 75% in every year but one.[39]

Table 3.2, Panel C, column 1 (2), presents total energy industry MLP IPOs (percentage of total) by year. Table 3.2, Panel C, column 3 (4) presents the same information for the MLP IPOs in my sample. The difference between the total MLPs and my sample MLPs are those MLP IPOs created by private parent firms (see Table 3.1).

[39] Beginning around 2009, a number of new investment vehicles (including mutual funds and ETFs) allow investors to access MLPs without suffering negative tax consequences. For example, an MLP mutual fund will elect to be taxed as a corporation so that a tax-exempt institution will not incur UBTI (see, e.g., SteelPath MLP Alpha Fund Prospectus 2014). Data limitations prevent me from examining which investors own which mutual funds. In Section 5.10, I examine ownership of the limited number of MLP-type entities electing to be taxed as corporations (as noted in Table 3.1).

The sample MLP IPOs (columns 3 and 4) track the total MLP activity (columns 1 and 2) very closely. The growth in MLP IPOs also mirrors the growth in assets held in MLP form discussed earlier and presented in Table 3.2, Panel A. A relatively large number of MLP IPOs occur more recently in the sample, likely due to investors seeking high yields in a low interest rate environment (e.g., Urken 2012) and the increased economic activity related to the energy industry (e.g., ClearBridge Investments 2013; Fessler 2014). Therefore, it is important to match my control firms on year, as I do in my matching procedure described in Section 3.1.

3.3. Classification of Tax-Exempt and Tax-Sensitive Investors

My hypotheses focus on two types of investors: tax-exempt (*TAX_EXEMPT*) and tax-sensitive (*TAX_SENS*).[40] Following prior literature (e.g., Blouin et al. 2013; Sikes 2014), I classify tax-exempt entities based on their legal type (e.g., pensions, foundations, and charities; all are exempt from taxation under IRC Section 501) obtained from Brian Bushee's website. This data is based on classifications in Thomson Reuters' 13F database prior to 1998 and Bushee and colleagues' research (e.g., Abarbanell, Bushee, and Raedy 2003) into institutions entering the database in 1998 and afterwards. Because tax-exempt investor classification is based on legal status, there is relatively little noise in this measure. Refer to Appendix A for the detailed definition of *TAX_EXEMPT*.

Tax-sensitive investors include those investors likely to be individuals, as well as institutions classified as tax-sensitive. Prior literature suggests that non-institutional

[40] A third group of investors, typically considered tax-insensitive, are not a focus of my study. These investors do not have identifiable shareholder-level taxes and taxes are unlikely to factor into their investment decisions. These investors could include, for example, index funds that follow an index regardless of shareholder-level taxes. See Blouin et al. (2013) for details on tax-insensitive institutions by type. As discussed in Section 2, I only make predictions for tax-sensitive and tax-exempt investors.

investors (i.e., one minus the institutional ownership percentage) are a reasonable proxy for tax-sensitive individual investors (e.g., Ayers et al. 2003; Dhaliwal, Li, and Trezevant 2003; Dai, Maydew, Shackelford, and Zhang 2008; Blouin et al. 2013). For simplicity, I refer to these investors as individual investors. Following Jin (2006) and Sikes (2014), Blouin et al. (2013) note that even within institutions, there is heterogeneity in taxation. Jin (2006) and Sikes (2014) hand collect Form ADV from the SEC's Investment Adviser Public Disclosure (IAPD) database and use these data to identify which investment advisers likely serve tax-sensitive and tax-insensitive investors. For example, Form ADV would identify an institution serving mainly high net-worth individuals, which would then be classified as tax-sensitive. Blouin et al. (2013) use these hand-collected data to model the likelihood that an institution is tax-sensitive. They find, among other things, that tax-sensitive institutions have smaller and more diverse portfolios than tax-insensitive institutions, indicating that these investors hold relatively smaller positions in equities. I follow Blouin et al. (2013) to classify tax-sensitive institutions. Refer to Appendix A for the detailed definition of *TAX_SENS*. This measure contains more noise than *TAX_EXEMPT*, which is based only on legal type. Specifically, *TAX_SENS* consists of a noisy measure of individual ownership plus a noisy measure of tax-sensitive institutional ownership. However, given the findings of Blouin et al. (2013) that tax-sensitive investors are relatively small, as well as prior research (e.g., Ayers et al. 2003), it is reasonable to conclude that individual investors (i.e., investors not required to file Form 13F; those with less than $100 million in assets under management) are more likely to be tax-sensitive than tax-insensitive. In addition, Blouin et al. (2013) perform a number

of validation tests on their tax-sensitive institution measure. Nonetheless, noise in *TAX_SENS* biases against finding results on the tax-sensitive ownership variable.

3.4. Decision to Form an MLP

I test my first hypotheses using the following logistic model:

$$\begin{aligned} MLP = \quad & \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 TAX\_SENS + \beta_3 ETR + \\ & \beta_4 TAX\_GAIN + \beta_5 NOL + \beta_6 LEVERAGE + \beta_7 CF + \\ & \beta_8 SIZE + \beta_9 CAPEX + \beta_{10} CF\_VOL + \beta_{11} PE + \\ & \beta_{12} DIV\_YLD + \varepsilon \end{aligned} \tag{1}$$

where *MLP* equals one if the firm creates an MLP and zero otherwise. *TAX_EXEMPT* (*TAX_SENS*) represents the percentage of tax-exempt (tax-sensitive) investors in the parent firm for the quarter preceding the MLP IPO announcement. I expect a negative coefficient on *TAX_ EXEMPT*, consistent with hypothesis 1b, but make no prediction on *TAX_SENS*, consistent with hypothesis 1a.

ETR represents *GAAP_ETR* or *CASH_ETR*. I control for *ETR* because prior literature (e.g., Terando and Omer 1993) finds that entity-level *ETR* affects organizational form choice, although the direction of the effect is not clear (e.g., Shevlin 1987). If firms form MLPs to avoid corporate taxes, the coefficient will be positive; if they form MLPs when they are unable to use tax benefits, the coefficient will be negative. I include *TAX_GAIN*, which is the estimated accumulated tax depreciation of assets scaled by total assets, as a proxy for the parent's deferred gain at MLP IPO. Because the parent's gain deferred upon MLP formation is amortized into income over time, firms with higher

gains will face a higher tax burden from an MLP formation. Therefore, I predict a negative coefficient on *TAX_GAIN* (similar to Hodder et al. 2003).

NOL represents the firm's deferred tax asset for net operating losses scaled by assets, and *LEVERAGE* equals total debt scaled by assets.[41] I make no prediction on *NOL* for reasons similar to *ETR*; NOLs could represent low corporate tax rates and little tax benefit to creating an MLP, or could reflect the corporation's generation of excess deductions that it is unable to use (e.g., Beatty et al. 1995). I make no prediction on *LEVERAGE* because leverage could represent tax factors (high leverage generates high tax deductions) or financing concerns (highly levered firms need an alternative financing source such as an MLP).

CF represents operating cash flow scaled by assets. Companies indicate that MLPs are often formed when firms need cash to finance projects. Therefore, I expect a negative coefficient on cash flow. *SIZE* represents the logarithm of total assets, and *CAPEX* represents total capital expenditures scaled by assets. Although I match on size, I include size as a control variable but make no prediction. I make no prediction on *CAPEX* because capital expenditures generate a tax shield (i.e., accelerated depreciation) that MLP investors prefer, but high capital expenditures may indicate the firm does not need to access financing via an MLP. *CF_VOL* represents cash flow volatility over the three prior years. Because MLP investors generally want a predictable, low volatility stream of distributions, I predict a negative coefficient on *CF_VOL*. *PE* is the price-to-earnings

[41] I use the deferred tax asset, hand-collected from 10-Ks, instead of the Compustat tax loss carryforward (TLCF) for the *NOL* variable for two reasons. First, Mills, Newberry, and Novack (2003) identify misclassification errors in the Compustat TLCF variable. Second, the tax loss carryforward does not represent the dollar amount of tax savings a firm will receive from its tax losses. The tax rate (e.g., high federal versus low state) also impacts the tax savings. For example, a firm with a $5 million federal carryover has a much larger benefit than a firm with a $5 million state carryover, even though the TLCF is the same. The deferred tax asset recorded by a firm accounts for the various tax rates applied to the TLCF and is more appropriate in my setting.

ratio of the firm. I make no prediction on *PE* because firms with high PE ratios may create MLPs because they believe that they will receive high multiples on the MLP, whereas firms with low PE ratios may be inclined to create MLPs if they believe the market is undervaluing their MLP-type assets. Finally, I include the dividend yield of the firm (*DIV_YLD*). I make no prediction on *DIV_YLD* because firms with higher dividends could form an MLP so they can make distributions of pretax profits, or firms with lower dividends could form an MLP to allow them to increase their distribution amount (as suggested by Damodaran et al. 1997). Appendix A provides details on the computation of each variable.

3.5. Ownership Changes around IPO Effective Date

For each parent firm, I obtain institutional ownership data in the quarter prior to the MLP IPO (quarter q-1, see Figure 3.1) and calculate tax-sensitive and tax-exempt ownership. I then calculate tax-sensitive and tax-exempt ownership in the parent and the MLP in the quarter following the MLP IPO (quarter q, see Figure 3.1). Following Abarbanell et al. (2003), I calculate the mean change in parent ownership from the quarter prior to the IPO to the quarter following the IPO for each type of investor (*ΔTAX_SENS*, *ΔTAX_EXEMPT*).[42] Hypothesis 2a predicts that the change in tax-sensitive ownership will be significantly negative for parent firms.

I then compare the tax-sensitive (tax-exempt) ownership in the MLP to the tax-sensitive (tax-exempt) ownership in the parent firm following the MLP IPO (i.e., all at

[42] Abarbanell et al. (2003) adjust changes in ownership by the mean change in all institutional ownership for the quarter of interest to account for time trends. Matching parent firms to control firms in my sample eliminates the need for this adjustment for parent firms (hypothesis 2a). Because my MLP analysis (hypothesis 2b) compares differences at a point in time, rather than over time, no adjustment is necessary for the MLP analysis.

quarter q). Hypothesis 2b predicts that tax-sensitive (tax-exempt) ownership will be significantly higher (lower) in the MLP than in the parent following the MLP IPO.

TABLE 3.1
Sample Selection

Data Restrictions	**N**
MLPs beginning trading from 1993-2013	133
Less:	
Entities electing corporate taxation	(5)
General Partners in lower tier MLPs	(11)
Entities without a publicly traded corporate parent	(74)
Spin-offs	(1)
Entities with parents operating outside the energy industry	(3)
Total MLP/Parent combinations available	39
Less:	
Parent firms without a matching control firm	(8)
Total Parent firms available for tests of H1	31

TABLE 3.2
MLPs, the Energy Industry, and Institutional Ownership

Panel A: MLPs as a Percentage of Energy Industry; Sample MLPs as a Percentage of MLPs

	(1)	(2)	(3)	(4)
Year	MLPs as a % of Energy Industry (Assets)	MLPs as a % of Energy Industry (Market Value of Equity)	% of MLPs captured by my Sample (Assets)	% of MLPs captured by my Sample (Market Value of Equity)
1993	0.76%	0.40%	13.63%	0.00%
1994	0.93%	0.75%	13.64%	9.48%
1995	1.37%	1.08%	26.64%	26.96%
1996	1.43%	1.16%	26.39%	23.72%
1997	1.42%	1.29%	27.97%	22.68%
1998	2.02%	1.67%	28.26%	19.27%
1999	2.52%	1.51%	35.29%	17.92%
2000	2.69%	1.75%	29.17%	13.88%
2001	3.14%	3.50%	26.35%	20.90%
2002	3.67%	4.51%	23.15%	21.61%
2003	4.12%	5.46%	23.00%	20.51%
2004	5.47%	5.66%	20.93%	22.19%
2005	6.50%	5.28%	23.28%	22.44%
2006	6.97%	6.46%	27.19%	23.76%
2007	8.93%	6.96%	24.88%	25.87%
2008	10.70%	6.91%	22.83%	24.84%
2009	11.26%	10.66%	23.48%	26.14%
2010	12.66%	14.39%	28.86%	27.72%
2011	13.57%	16.98%	28.29%	28.51%
2012	17.51%	20.23%	27.79%	31.98%
2013	20.99%	23.15%	28.05%	32.76%

Percentages in column 1 (2) represent total assets (market value of equity) of MLPs as a percentage of the energy industry. Total assets equals Compustat variable AT and market value of equity represents Compustat variables CSHOxPRCC_F. Percentages in column 3 (4) represent the total assets (market value of equity) of MLPs in my sample as a percentage of MLPs in column 1 (2). The energy industry includes the following SICs: 1220, 1221, 1222, 1241, 1311, 1321, 1381, 1382, 2870, 2873, 2874, 2911, 4400, 4412, 4424, 4432, 4449, 4610, 4612, 4613, 4619, 4922, 4923, 4924, 4925, 5171, 5172, 5983, 5984, 5989, 6792.

TABLE 3.2 (Cont'd)
MLPs, the Energy Industry, and Institutional Ownership

Panel B: Institutional Ownership of Energy Firms and MLPs

	All Energy Firms	MLPs		
	(1)	(2)	(3)	(4)
Year	Mean	Mean	Minimum	Maximum
1993	27.50%	10.62%	2.42%	29.92%
1994	29.87%	7.85%	0.33%	29.79%
1995	31.57%	6.72%	0.93%	32.51%
1996	32.67%	5.32%	1.08%	17.41%
1997	33.53%	6.37%	1.05%	32.45%
1998	31.57%	6.46%	0.45%	34.85%
1999	34.90%	8.95%	0.26%	38.64%
2000	37.97%	9.32%	0.52%	39.56%
2001	35.58%	11.24%	0.19%	38.47%
2002	37.59%	9.76%	0.74%	37.37%
2003	39.07%	11.06%	1.02%	36.09%
2004	45.42%	17.59%	0.38%	37.41%
2005	47.06%	27.18%	3.22%	83.35%
2006	49.16%	30.46%	4.97%	84.03%
2007	51.32%	37.86%	7.15%	81.45%
2008	48.10%	31.63%	1.29%	100.00%
2009	45.90%	24.37%	3.20%	82.63%
2010	47.51%	26.79%	1.00%	75.84%
2011	48.51%	28.06%	0.09%	65.58%
2012	49.39%	35.37%	3.60%	94.10%
2013	50.93%	37.40%	0.00%	100.00%

Percentages above represent the percentage of shares outstanding owned by institutions for energy firms and MLPs, according to the Thomson Reuters' 13F database. The energy industry includes the following SICs: 1220, 1221, 1222, 1241, 1311, 1321, 1381, 1382, 2870, 2873, 2874, 2911, 4400, 4412, 4424, 4432, 4449, 4610, 4612, 4613, 4619, 4922, 4923, 4924, 4925, 5171, 5172, 5983, 5984, 5989, 6792.

TABLE 3.2 (Cont'd)
MLPs, the Energy Industry, and Institutional Ownership

Panel C: Energy Industry MLP IPOs by Year

Year	(1) Total	(2) Percent of Total	(3) Sample MLPs	(4) Percent of Total
1993	2	1.77%	0	0.00%
1994	3	2.65%	1	2.56%
1995	2	1.77%	2	5.13%
1996	4	3.54%	1	2.56%
1997	1	0.88%	0	0.00%
1998	2	1.77%	1	2.56%
1999	2	1.77%	0	0.00%
2000	0	0.00%	0	0.00%
2001	4	3.54%	3	7.69%
2002	6	5.31%	2	5.13%
2003	0	0.00%	0	0.00%
2004	5	4.42%	1	2.56%
2005	6	5.31%	2	5.13%
2006	9	7.96%	3	7.69%
2007	13	11.50%	6	15.38%
2008	4	3.54%	2	5.13%
2009	0	0.00%	0	0.00%
2010	6	5.31%	0	0.00%
2011	12	10.62%	5	12.82%
2012	13	11.50%	5	12.82%
2013	19	16.81%	5	12.82%
Total	113		39	

This table presents the total energy industry MLP IPOs by year, including the MLPs in my sample (39) as well as the MLPs created by non-public entities (74).

Figure 3.1
Timeline for MLP IPOs

Each date on the timeline represents a calendar quarter end date relative to the effective date of the IPO. The effective date is the first date the MLP begins trading.

CHAPTER 4

RESULTS

4.1. Descriptive Statistics: Regression Variables and Ownership Change Variables

Table 4.1, Panel A presents descriptive statistics for the 31 parent firms and 43 control firms used in Equation 1. Overall, there are very few differences in means or medians between the parent firms and control firms, indicating that the matching procedure discussed in Section 3.1 generated reasonable matches. Univariate statistics indicate that parent firms have a lower expected tax gain on assets (*TAX_GAIN*; *p*-values<0.01) suggesting that firms facing potentially higher taxes upon MLP formation are less likely to form an MLP, consistent with findings in Terando and Omer (1993). I also find that control firms have higher cash flow (*CF*) and capital expenditures (*CAPEX*) (*p*-values<0.05), consistent with financing playing a role in the MLP IPO decision (e.g., Terando and Omer 1993). Most relevant to this study, I find that parent firms have marginally lower tax-exempt ownership (*TAX_EXEMPT*) than control firms prior to the MLP IPO (*p*-values<0.10), providing weak support for hypothesis 1b. However, univariate tests should be interpreted with caution; Section 4.2 presents results from my full multivariate model.

Table 4.1, Panel B presents the ownership of the 39 parent firms in my full sample for each type of investor (i.e., tax-sensitive and tax-exempt) before and after the

MLP IPO. Consistent with hypothesis 2a, tax-sensitive ownership in the parent decreases from the quarter prior to the MLP IPO to the quarter following the MLP IPO. Table 4.1, Panel C shows the ownership of the MLP as well as the parent firm immediately following the MLP IPO. Consistent with hypothesis 2b, tax-sensitive (tax-exempt) ownership is higher (lower) for the MLP than the parent firm. I discuss these results further in Section 4.3 along with statistical tests.

Table 4.2 presents correlations for the regression variables. Consistent with the descriptive statistics in Table 4.1, Panel A, MLP formation is significantly negatively correlated with the expected tax gain on the assets (*TAX_GAIN*), cash flow (*CF*), capital expenditures (*CAPEX*) (p-values<0.02), as well as marginally negatively correlated with tax-exempt ownership (*TAX_EXEMPT*) (p-values≤0.10, one-tailed).

4.2. Decision to Form an MLP

Table 4.3, column 1 presents the results from estimating Equation 1 using *GAAP_ETR*.[43] Consistent with hypothesis 1b, tax-exempt ownership is negatively related to the decision to form an MLP (p-value=0.019). This suggests that tax-exempt investors are, on average, less supportive of MLP structures and that firms cater to this preference. For a one standard deviation increase in tax-exempt investors across the mean (i.e., from ½ standard deviation below to ½ standard deviation above the mean tax-exempt ownership; see Long and Freese 2005), firms are 20% less likely to form an MLP. However, tax-sensitive ownership is not related to the MLP formation decision (p-

[43] VIFs and condition indices do not exceed 5 in these regressions, well below cutoffs commonly used to assess multicollinearity (Belsley, Kuh, and Welsch 1980; Mendenhall and Sincich 2003).

value=0.172), consistent with the competing alternatives discussed with hypotheses 1a.[44] GAAP ETR is negatively related to MLP formation (*p*-value=0.059), consistent with Shevlin (1987).[45] The potential tax gain on assets is also negatively related to MLP formation (*p*-value=0.030), as predicted, indicating that taxes on built-in gains discourage MLP formation. As expected, cash flow and cash flow volatility are also negatively related to MLP formation (*p*-values=0.061 and 0.074), indicating that financing is a factor in the MLP decision. Finally, price-to-earnings ratio is positively related to the decision to form an MLP (*p*-value=0.076), suggesting that firms carve-out MLPs when their equity receives a relatively higher valuation. Table 4.3, column 2 presents the results from a one-to-one matched sample, using only the best match based on assets. Inferences are generally unchanged, although ETR and price-to-earnings ratio lose significance in this smaller sample.

Table 4.3, column 3 presents the results using *CASH_ETR* in place of *GAAP_ETR*. Results are consistent with column 1 except that ETR and cash flow volatility are no longer significant. Table 4.3, column 4 presents the *CASH_ETR* results using the one-to-one matched sample. Results mirror column 3, however, the coefficient on the level of tax-sensitive ownership becomes marginally significant (*p*-value=.098), providing some weak evidence that the MLP IPO decision is associated with a desire to attract new tax-sensitive investors. The models in columns 1 through 4 correctly predict the MLP decision for between 84% and 87% of the observations, which compares

[44] Noise in the tax-sensitive investor measure, discussed in Section 3.3, could also be responsible for the lack of findings.

[45] Interestingly, the coefficient on entity-level taxes seems to be generally negative in partnership studies (this study, Shevlin (1987), Beatty et al. (1995)), while the coefficient tends to be generally positive in S-corporation studies (see discussion in Section 2.2.1). I leave further investigation of this difference to future research.

favorably to models in Terando and Omer (1993) which correctly predict between 66% and 89% of the observations. Similarly, the models have area under the ROC curves between 0.84 and 0.87, indicating excellent ability to discriminate between firms that do and do not carve out MLPs (Hosmer, Lemeshow, and Sturdivant 2013). Likelihood ratio tests show that models including ownership variables provide a better fit than models excluding ownership variables (p-values<0.10, untabulated), also suggesting that shareholder-level taxes are an important, previously unexplored determinant of organizational form choice.

In robustness tests, I drop all control firms that do not fall within plus or minus 40% of assets (Table 4.4) or 50% of assets (Table 4.5) of the matched parent firm. I also drop the corresponding parent firm. All results hold except cash flow volatility is no longer significant in the regression using GAAP ETR. Results are also robust to including only tax-sensitive (Table 4.6) or tax-exempt (Table 4.7) ownership in the regression model. When including only tax-sensitive ownership, cash flow volatility is no longer significant in the GAAP ETR regression. When including only tax-exempt ownership, cash flow is no longer significant. Finally, because an NOL could offset the recognition of a built-in gain, I also include an interaction term between *TAX_GAIN* and *NOL* (Table 4.8). Results are robust to this specification, except GAAP ETR is no longer significant.

In sum, these tests show that shareholder-level taxes have a significant influence on organizational form decisions. Specifically, firms with high levels of tax-exempt owners, who are at a tax disadvantage when investing in a partnership, are less likely to form an MLP.

4.3. Ownership Changes around IPO Effective Date

Table 4.9 presents results of tests of the second set of hypotheses. Hypothesis 2a predicts that tax-sensitive investors shift their ownership away from the parent firm following the MLP IPO. Table 4.9, Panel A shows that tax-sensitive investors decrease their ownership in the parent by 3.2% from the quarter prior to MLP IPO to the quarter after the MLP IPO (*p*-value=0.005), consistent with hypothesis 2a, indicating a shift from the parent to the tax-favored MLP.

Table 4.9, Panel B shows the changes in ownership of the control firms from the quarter before the corresponding parent firm created the MLP to the quarter after the parent firm created the MLP. I find no significant change in ownership for control firms, indicating that the MLP IPO for the parent firms, rather than market wide ownership changes, is responsible for the results in Table 4.9, Panel A.

Table 4.9, Panel C compares MLP ownership to parent firm ownership in the quarter following the MLP IPO. Consistent with hypothesis 2b, I find that tax-sensitive (tax-exempt) ownership is higher (lower) in the MLP than in the parent firm (*p*-values<0.001). Tax-sensitive (tax-exempt) investors own 43.2% (1.8%) more (less) of the MLP than the parent.[46] The fact that investors identified as tax-sensitive make up the majority of MLPs' investors helps validate the tax-sensitive measure.

Table 4.9 presents my results following Abarbanell et al.'s (2003) methodology as described in Section 3.5. An alternative methodology uses regression analysis to control for the effect of non-tax factors on the change in institutional ownership, as in Dhaliwal et al. (1999). Table 4.10, column 1 (2) presents the results of regressing the change in the

[46] Due to data limitations, I am unable to determine how much of the increase in tax-sensitive ownership is driven by former parent shareholders versus new investors. See Section 5.3 for additional tests to address tax-sensitive institutions shifting from the parent to the MLP.

parent's tax-sensitive (tax-exempt) ownership from the quarter before to the quarter after the MLP IPO on the MLP indicator variable (*MLP*) as well as *ΔBETA*, *CG*, *LAGIO%*, *ROA*, and *SIZE* following Dhaliwal et al. (1999). I define all variables in Appendix A. In this regression, the MLP indicator equals one for firms that created an MLP and zero otherwise. The results of the regression are nearly identical to those presented in Table 4.9. Specifically, I find that tax-sensitive investors decrease their ownership in parent firms 3.3% more than in control firms following an MLP IPO (*p*-value=0.016). Table 4.10, column 3 (4) regresses tax-sensitive (tax-exempt) ownership in the parent firms and MLPs after the MLP IPO on an MLP indicator, *BETA*, *LAGIO%*, *ROA*, and *SIZE*. In this regression, the MLP indicator equals one for MLPs and zero for parent firms. Results mirror those in Table 4.9. Specifically, I find that tax-sensitive (tax-exempt) investors own 45.2% (1.5%) more (less) of the MLP than the parent (*p*-values<0.001). Results on control variables are generally consistent with Dhaliwal et al. (1999). In untabulated robustness tests, I control for dividend yield and share turnover (a measure of liquidity). Results are robust to the inclusion of these additional control variables.

In sum, results suggest that shareholder-level taxes play an important role in ownership decisions for investors in the parent and MLP around an organizational form change. Evidence suggests that investors sort into firms based on their own taxation and the tax attributes of the firm. While existing tax-sensitive investors appear to have limited power to influence firm policy decisions, they react once those decisions are made. Tax-exempt investors – i.e., those associated with the firm's organizational form choice – predictably avoid MLP ownership.

TABLE 4.1
Descriptive Statistics

Panel A: Parents and Control Firms - Determinants of MLP IPO Regression Sample

	Parents (N= 31)						Controls (N= 43)						
Variable	**Mean**	**StdDev**	**Q1**	**Median**	**Q3**	**Pred. (H1b)**	**Mean**		**StdDev**	**Q1**	**Median**		**Q3**
TAX_EXEMPT	0.0221	0.0170	0.0078	0.0233	0.0333	<	0.0282	*	0.0187	0.0168	0.0276	*	0.0382
TAX_SENS	0.3684	0.2367	0.2244	0.3459	0.4884		0.3912		0.2318	0.1812	0.3749		0.4952
GAAP_ETR	0.2974	0.1817	0.2477	0.3576	0.3827		0.3531		0.1898	0.3190	0.3606		0.3925
CASH_ETR	0.1516	0.2440	0.0000	0.0743	0.1659		0.1720		0.2103	0.0000	0.1151		0.2522
TAX_GAIN	0.1829	0.0791	0.1319	0.1700	0.2188		0.2664	***	0.1076	0.1859	0.2409	***	0.3352
NOL	0.0167	0.0259	0.0000	0.0056	0.0219		0.0210		0.0303	0.0000	0.0089		0.0319
LEVERAGE	0.3186	0.1260	0.2264	0.3155	0.4407		0.2692		0.1367	0.1572	0.2990		0.3597
CF	0.0835	0.0463	0.0544	0.0767	0.1172		0.1488	***	0.0869	0.0772	0.1313	***	0.2086
SIZE	8.0852	1.5473	6.8818	7.6474	9.3505		7.6516		1.5739	6.3165	7.5359		9.2328
CAPEX	0.1181	0.0835	0.0460	0.0988	0.1830		0.2017	***	0.1387	0.0647	0.1790	**	0.3103
CF_VOL	0.0389	0.0416	0.0167	0.0250	0.0412		0.0401		0.0349	0.0167	0.0345		0.0486
PE	11.1488	27.9447	5.6754	14.9444	24.3314		8.4203		24.7643	8.7055	12.5951		16.7519
DIV_YLD	0.0139	0.0166	0.0000	0.0105	0.0232		0.0127		0.0176	0.0000	0.0070		0.0212

***, **, * indicate significant differences in means or medians between parents and control firms at the one percent, five percent, or ten percent level, respectively. Continuous variables are winsorized at 2.5% and 97.5%. When predictions are made, *p*-values are one-tailed. See Appendix A for variable definitions.

TABLE 4.1 (Cont'd)
Descriptive Statistics

Panel B: Parent Ownership around IPO

Variable	Mean	StdDev	Q1	Median	Q3
TAX_SENS Before	0.3845	0.2468	0.2123	0.3529	0.5372
TAX_SENS After	0.3529	0.2430	0.1763	0.3057	0.4875
ΔTAX_SENS	-0.0317	0.0731	-0.0602	-0.0204	0.0074
TAX_EXEMPT Before	0.0193	0.0146	0.0066	0.0182	0.0281
TAX_EXEMPT After	0.0194	0.0136	0.0082	0.0185	0.0279
ΔTAX_EXEMPT	0.0001	0.0046	-0.0013	0.0000	0.0020

Ownership "Before" refers to ownership in the quarter prior to the MLP IPO (date q-1 in Figure 3.1). Ownership "After" refers to ownership in the quarter after the MLP IPO (date q in Figure 3.1).

Panel C: MLP Ownership compared to Parent Immediately After IPO

Variable	Mean	StdDev	Q1	Median	Q3
TAX_SENS MLP	0.7849	0.1892	0.6697	0.8695	0.9263
TAX_SENS Parent	0.3529	0.2430	0.1763	0.3057	0.4875
ΔTAX_SENS	0.4320	0.2961	0.3034	0.4470	0.5617
TAX_EXEMPT MLP	0.0018	0.0043	0.0000	0.0000	0.0003
TAX_EXEMPT Parent	0.0194	0.0136	0.0082	0.0185	0.0279
ΔTAX_EXEMPT	-0.0176	0.0143	-0.0274	-0.0168	-0.0055

"MLP" ownership refers to ownership of the MLP in the quarter after the MLP IPO (date q in Figure 3.1). "Parent" ownership refers to ownership in the quarter after the MLP IPO (date q in Figure 3.1).

TABLE 4.2
Correlations

Variable		(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	*MLP*	1.0000	-0.1684	-0.0488	-0.1480	-0.0454	-0.3965	-0.0735
		(<0.0001)	(0.1514)	(0.6797)	(0.2083)	(0.7010)	(0.0005)	(0.5340)
(2)	*TAX_EXEMPT*	-0.1507	1.0000	-0.5185	0.1947	0.0667	0.2401	-0.1031
		(0.2000)	(<0.0001)	(<0.0001)	(0.0964)	(0.5723)	(0.0393)	(0.3822)
(3)	*TAX_SENS*	-0.0494	-0.5292	1.0000	-0.1154	0.0075	-0.1355	0.0812
		(0.6762)	(<0.0001)	(<0.0001)	(0.3276)	(0.9497)	(0.2498)	(0.4918)
(4)	*GAAP_ETR*	-0.1188	0.1704	-0.0619	1.0000	0.2485	0.0234	0.1277
		(0.3134)	(0.1468)	(0.6004)	(<0.0001)	(0.0328)	(0.8429)	(0.2781)
(5)	*CASH_ETR*	-0.1297	0.2132	-0.0564	0.2490	1.0000	-0.0284	-0.0327
		(0.2707)	(0.0681)	(0.6332)	(0.0324)	(<0.0001)	(0.8102)	(0.7821)
(6)	*TAX_GAIN*	-0.4007	0.2650	-0.1664	-0.0016	0.1617	1.0000	-0.0098
		(0.0004)	(0.0225)	(0.1566)	(0.9892)	(0.1687)	(<0.0001)	(0.9338)
(7)	*NOL*	-0.0372	-0.0909	-0.0120	-0.0990	-0.3687	0.0951	1.0000
		(0.7531)	(0.4414)	(0.9190)	(0.4012)	(0.0012)	(0.4202)	(<0.0001)
(8)	*LEVERAGE*	0.1462	-0.1258	0.2268	0.0036	-0.1194	-0.1015	0.0130
		(0.2139)	(0.2857)	(0.0520)	(0.9756)	(0.3109)	(0.3895)	(0.9125)
(9)	*CF*	-0.3796	0.1581	-0.2417	-0.0341	-0.0806	0.4963	0.0587
		(0.0009)	(0.1786)	(0.0381)	(0.7729)	(0.4949)	(<0.0001)	(0.6192)
(10)	*SIZE*	0.1468	0.5141	-0.4762	0.1940	0.2465	0.0940	-0.2216
		(0.2119)	(<0.0001)	(<0.0001)	(0.0976)	(0.0343)	(0.4257)	(0.0578)
(11)	*CAPEX*	-0.2860	-0.0932	-0.0498	-0.1382	-0.3059	0.3278	0.3320
		(0.0135)	(0.4298)	(0.6737)	(0.2404)	(0.0080)	(0.0044)	(0.0039)
(12)	*CF_VOL*	-0.0955	-0.2762	0.1900	-0.2427	-0.2367	-0.1271	0.1611
		(0.4181)	(0.0172)	(0.1049)	(0.0372)	(0.0423)	(0.2805)	(0.1702)
(13)	*PE*	0.1052	0.1038	0.0696	0.1944	0.1067	0.2091	-0.0911
		(0.3726)	(0.3789)	(0.5555)	(0.0970)	(0.3658)	(0.0738)	(0.4403)
(14)	*DIV_YLD*	0.0597	0.1732	0.2258	0.1663	0.4258	-0.0581	-0.6043
		(0.6132)	(0.1401)	(0.0531)	(0.1566)	(0.0002)	(0.6229)	(<0.0001)

TABLE 4.2 (Cont'd)
Correlations

Variable		*(8)*	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*
(1)	*MLP*	0.1835	-0.4096	0.1375	-0.3321	-0.0167	0.0522	0.0334
		(0.1177)	(0.0003)	(0.2428)	(0.0038)	(0.8879)	(0.6590)	(0.7774)
(2)	*TAX_EXEMPT*	-0.0464	0.1872	0.4268	-0.0791	-0.2904	0.1330	0.0405
		(0.6948)	(0.1103)	(0.0001)	(0.5029)	(0.0121)	(0.2585)	(0.7319)
(3)	*TAX_SENS*	0.2007	-0.2359	-0.4389	-0.0162	0.1040	0.0024	0.3297
		(0.0864)	(0.0431)	(<0.0001)	(0.8913)	(0.3778)	(0.9840)	(0.0041)
(4)	*GAAP_ETR*	-0.0605	-0.0246	0.1492	-0.1041	-0.3593	0.0863	0.1139
		(0.6085)	(0.8352)	(0.2046)	(0.3772)	(0.0017)	(0.4646)	(0.3339)
(5)	*CASH_ETR*	0.0088	-0.1835	0.1421	-0.3078	-0.0084	0.0200	0.1974
		(0.9404)	(0.1175)	(0.2270)	(0.0076)	(0.9437)	(0.8656)	(0.0919)
(6)	*TAX_GAIN*	-0.1000	0.5567	0.0427	0.3128	-0.1399	0.2406	-0.1005
		(0.3965)	(<0.0001)	(0.7177)	(0.0067)	(0.2344)	(0.0390)	(0.3941)
(7)	*NOL*	0.0252	-0.1453	-0.2702	0.1322	0.1948	-0.2735	-0.3714
		(0.8316)	(0.2168)	(0.0199)	(0.2616)	(0.0962)	(0.0184)	(0.0011)
(8)	*LEVERAGE*	1.0000	-0.4099	-0.0599	-0.1575	-0.2451	0.0507	0.1061
		(<0.0001)	(0.0003)	(0.6120)	(0.1803)	(0.0353)	(0.6682)	(0.3684)
(9)	*CF*	-0.4555	1.0000	-0.1254	0.6537	0.0662	0.2807	-0.2675
		(<0.0001)	(<0.0001)	(0.2869)	(<0.0001)	(0.5754)	(0.0154)	(0.0212)
(10)	*SIZE*	-0.0890	-0.0882	1.0000	-0.3211	-0.3695	0.1825	0.1192
		(0.4508)	(0.4550)	(<0.0001)	(0.0053)	(0.0012)	(0.1196)	(0.3119)
(11)	*CAPEX*	-0.1800	0.6166	-0.2874	1.0000	0.0663	0.0685	-0.4540
		(0.1250)	(<0.0001)	(0.0130)	(<0.0001)	(0.5745)	(0.5622)	(<0.0001)
(12)	*CF_VOL*	-0.3053	0.1937	-0.4537	0.1801	1.0000	-0.2857	-0.2770
		(0.0082)	(0.0982)	(<0.0001)	(0.1246)	(<0.0001)	(0.0136)	(0.0169)
(13)	*PE*	0.2197	0.0227	0.0772	0.0491	-0.1806	1.0000	0.1872
		(0.0600)	(0.8481)	(0.5133)	(0.6778)	(0.1236)	(<0.0001)	(0.1103)
(14)	*DIV_YLD*	0.0256	-0.1811	0.3008	-0.4377	-0.2154	0.1616	1.0000
		(0.8285)	(0.1226)	(0.0092)	(<0.0001)	(0.0653)	-0.1689	(<0.0001)

Pearson (Spearman) correlations are above (below) the diagonal. *p*-values are listed in parentheses below each correlation. Variables are defined in Appendix A.

TABLE 4.3
Determinants of MLP IPO

$$MLP = \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 TAX\_SENS + \beta_3 ETR + \beta_4 TAX\_GAIN + \beta_5 NOL + \beta_6 LEVERAGE + \beta_7 CF + \beta_8 SIZE + \beta_9 CAPEX + \beta_{10} CF\_VOL + \beta_{11} PE + \beta_{12} DIV\_YLD + \varepsilon$$

		(1)			(2)			(3)			(4)		
		Coefficient		dy/dx	Coefficient		dy/dx	Coefficient		dy/dx	Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***			***(p-value)***			***(p-value)***			***(p-value)***		
Intercept	?	6.4058			8.0682			4.4092			8.0468		
		(0.0860)			***(0.0330)***			***(0.1650)***			***(0.0400)***		
TAX_EXEMPT	-	-52.0129	**	-0.2027	-68.6943	***	-0.3037	-50.4430	**	-0.1998	-71.7245	***	-0.3173
		(0.0190)			***(0.0040)***			***(0.0210)***			***(0.0025)***		
TAX_SENS	?	-3.2695		-0.1638	-3.7276		-0.2149	-2.9901		-0.1524	-3.8376	*	-0.2218
		(0.1720)			***(0.1120)***			***(0.1520)***			***(0.0980)***		
GAAP_ETR	?	-3.0624	*	-0.1239	-1.4028		-0.0606						
		(0.0590)			***(0.4260)***								
CASH_ETR	?							-1.4111		-0.0695	-1.7476		-0.1023
								(0.2800)			***(0.1750)***		
TAX_GAIN	-	-8.4472	**	-0.1899	-10.9375	**	-0.2502	-6.9991	**	-0.1604	-10.9267	**	-0.2509
		(0.0295)			***(0.0285)***			***(0.0420)***			***(0.0220)***		
NOL	?	-0.2464		-0.0015	4.6183		0.0318	-5.2678		-0.0331	5.1847		0.0358
		(0.9850)			***(0.7210)***			***(0.6550)***			***(0.6870)***		
LEVERAGE	?	0.1016		0.0029	-1.4690		-0.0484	1.0726		0.0316	-1.7652		-0.0584
		(0.9640)			***(0.5820)***			***(0.6380)***			***(0.5280)***		
CF	-	-11.3975	*	-0.1940	-12.5918	*	-0.2292	-11.8283	*	-0.2043	-14.0169	*	-0.2550
		(0.0605)			***(0.0905)***			***(0.0570)***			***(0.0755)***		
SIZE	?	0.1422		0.0483	0.0474		0.0177	0.1678		0.0579	0.0576		0.0216
		(0.6400)			***(0.8760)***			***(0.5190)***			***(0.8450)***		
CAPEX	?	-5.0065		-0.1353	-2.3690		-0.0706	-5.0552		-0.1388	-2.5793		-0.0772
		(0.1930)			***(0.5360)***			***(0.2490)***			***(0.5570)***		
CF_VOL	-	-12.7838	*	-0.1039	-14.7433	*	-0.1408	-2.1906		-0.0182	-10.9455		-0.1052
		(0.0735)			***(0.0665)***			***(0.3920)***			***(0.1295)***		
PE	?	0.0208	*	0.1171	0.0234		0.1300	0.0257	**	0.1467	0.0287	*	0.1597
		(0.0760)			***(0.1410)***			***(0.0490)***			***(0.0840)***		
DIV_YLD	?	-17.6185		-0.0653	-7.4086		-0.0312	-18.3548		-0.0691	-5.9086		-0.0250
		(0.5740)			***(0.8260)***			***(0.5450)***			***(0.8530)***		

TABLE 4.3 (Cont'd)
Determinants of MLP IPO

	(1)	(2)	(3)	(4)
N	74	62	74	62
Pseudo-R2	33.80	32.78	32.29	34.20
% Correctly Predicted	86.3%	86.0%	84.3%	85.8%
Area under the ROC curve	0.863	0.861	0.844	0.859

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.4
Determinants of MLP IPO - Require Matches within 40% of Parent Assets

$$MLP = \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 TAX\_SENS + \beta_3 ETR + \beta_4 TAX\_GAIN + \beta_5 NOL + \beta_6 LEVERAGE + \beta_7 CF + \beta_8 SIZE + \beta_9 CAPEX + \beta_{10} CF\_VOL + \beta_{11} PE + \beta_{12} DIV\_YLD + \varepsilon$$

	(1)			(2)		
	Coefficient		dy/dx	Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
Intercept	?	5.0967		?	2.7428	
		(0.1720)			***(0.3840)***	
TAX_EXEMPT	-	-37.2560	* -0.1383	-	-35.8777	* -0.1344
		(0.0650)			***(0.0730)***	
TAX_SENS	?	-1.8108	-0.0875	?	-1.8734	-0.0913
		(0.4390)			***(0.3850)***	
GAAP_ETR	?	-3.6562	** -0.1400			
		(0.0350)				
CASH_ETR				?	-1.0436	-0.0487
					(0.4540)	
TAX_GAIN	-	-9.1508	** -0.1935	-	-7.6349	** -0.1633
		(0.0165)			***(0.0265)***	
NOL	?	4.8083	0.0267	?	-3.2695	-0.0183
		(0.7330)			***(0.7850)***	
LEVERAGE	?	-0.4102	-0.0108	?	1.3463	0.0357
		(0.8660)			***(0.5760)***	
CF	-	-16.7172	** -0.2718	-	-17.1901	** -0.2815
		(0.0265)			***(0.0170)***	
SIZE	?	0.2972	0.0896	?	0.2921	0.0889
		(0.3660)			***(0.2990)***	
CAPEX	?	-4.3301	-0.1137	?	-3.4684	-0.0920
		(0.3150)			***(0.4620)***	
CF_VOL	-	-8.4499	-0.0606	-	3.1001	0.0225
		(0.2260)			***(0.3740)***	
PE	?	0.0258	* 0.1342	?	0.0327	** 0.1712
		(0.0530)			***(0.0180)***	
DIV_YLD	?	-34.8166	-0.1256	?	-33.5769	-0.1222
		(0.3230)			***(0.3230)***	
N		64			64	
Pseudo-R2		37.94			35.43	
% Correctly Predicted		87.2%			85.7%	
Area under the ROC curve		0.872			0.858	

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.5
Determinants of MLP IPO - Require Matches within 50% of Parent Assets

$$MLP = \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 TAX\_SENS + \beta_3 ETR + \beta_4 TAX\_GAIN + \beta_5 NOL + \beta_6 LEVERAGE + \beta_7 CF + \beta_8 SIZE + \beta_9 CAPEX + \beta_{10} CF\_VOL + \beta_{11} PE + \beta_{12} DIV\_YLD + \varepsilon$$

	(1)			(2)		
		Coefficient		dy/dx		Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***			**Pred.**	***(p-value)***		
Intercept	?	5.4539			?	3.7563		
		(0.1210)				***(0.2220)***		
TAX_EXEMPT	-	-48.5586	**	-0.1931	-	-46.2388	**	-0.1868
		(0.0250)				***(0.0280)***		
TAX_SENS	?	-2.9527		-0.1503	?	-2.7494		-0.1422
		(0.1950)				***(0.1750)***		
GAAP_ETR	?	-2.7510	*	-0.1117				
		(0.0840)						
CASH_ETR					?	-1.0340		-0.0505
						(0.4260)		
TAX_GAIN	-	-7.9039	**	-0.1813	-	-6.4819	**	-0.1513
		(0.0285)				***(0.0470)***		
NOL	?	-0.1954		-0.1954	?	-4.9936		-0.0318
		(0.9880)				***(0.6590)***		
LEVERAGE	?	0.0351		0.0010	?	1.0408		0.0304
		(0.9870)				***(0.6460)***		
CF	-	-11.8699	**	-0.2066	-	-12.5899	**	-0.2221
		(0.0465)				***(0.0375)***		
SIZE	?	0.1849		0.0612	?	0.1770		0.0595
		(0.5310)				***(0.5010)***		
CAPEX	?	-3.9143		-0.1074	?	-3.7371		-0.1042
		(0.2780)				***(0.3560)***		
CF_VOL	-	-10.0970		-0.0835	-	-0.2609		-0.0022
		(0.1220)				***(0.4865)***		
PE	?	0.0219	*	0.1258	?	0.0267	**	0.1548
		(0.0740)				***(0.0420)***		
DIV_YLD	?	-16.7867		-0.0636	?	-17.3350		-0.0666
		(0.5890)				***(0.5630)***		
N		70				70		
Pseudo-R2		32.63				31.13		
% Correctly Predicted		85.5%				83.7%		
Area under the ROC curve		0.857				0.837		

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.6
Determinants of MLP IPO - Excluding the Level of Tax-Exempt Ownership

$$MLP = \beta_0 + \beta_1 TAX\_SENS + \beta_2 ETR + \beta_3 TAX\_GAIN + \beta_4 NOL + \beta_5 LEVERAGE + \beta_6 CF + \beta_7 SIZE + \beta_8 CAPEX + \beta_9 CF\_VOL + \beta_{10} PE + \beta_{11} DIV\_YLD + \varepsilon$$

	(1)			(2)		
	Coefficient		dy/dx	Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
Intercept	?	5.9161		?	3.8989	
		(0.1450)			***(0.2440)***	
TAX_SENS	?	-1.5778	-0.0833	?	-1.3491	-0.0721
		(0.4770)			***(0.4900)***	
GAAP_ETR	?	-2.9709 *	-0.1260			
		(0.0540)				
CASH_ETR				?	-1.4000	-0.0720
					(0.2550)	
TAX_GAIN	-	-8.0438 **	-0.1895	-	-6.6131 **	-0.1582
		(0.0235)			***(0.0310)***	
NOL	?	-4.7929	-0.0310	?	-9.5206	-0.0623
		(0.6890)			***(0.4030)***	
LEVERAGE	?	-0.4572	-0.0139	?	0.3698	0.0114
		(0.8250)			***(0.8570)***	
CF	-	-13.3419 **	-0.2366	-	-14.2442 **	-0.2548
		(0.0310)			***(0.0245)***	
SIZE	?	-0.0360	-0.0128	?	0.0076	0.0027
		(0.9070)			***(0.9780)***	
CAPEX	?	-3.1904	-0.0906	?	-2.8466	-0.0818
		(0.3770)			***(0.4310)***	
CF_VOL	-	-8.0990	-0.0691	-	2.2278	0.0193
		(0.1730)			***(0.3840)***	
PE	?	0.0219 **	0.1291	?	0.0255 **	0.1514
		(0.0440)			***(0.0310)***	
DIV_YLD	?	-24.2323	-0.0941	?	-23.7082	-0.0931
		(0.3510)			***(0.3670)***	
N		74			74	
Pseudo-R2		29.06			27.59	
% Correctly Predicted		83.2%			82.0%	
Area under the ROC curve		0.832			0.820	

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.7
Determinants of MLP IPO - Excluding the Level of Tax-Sensitive Ownership

$$MLP = \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 ETR + \beta_3 TAX\_GAIN + \beta_4 NOL + \beta_5 LEVERAGE + \beta_6 CF + \beta_7 SIZE + \beta_8 CAPEX + \beta_9 CF\_VOL + \beta_{10} PE + \beta_{11} DIV\_YLD + \varepsilon$$

	(1)				(2)			
		Coefficient		dy/dx		Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***			**Pred.**	***(p-value)***		
Intercept	?	3.9799			?	2.3516		
		(0.1410)				***(0.3830)***		
TAX_EXEMPT	-	-33.7969	*	-0.1328	-	-33.9447	*	-0.1362
		(0.0785)				***(0.0770)***		
GAAP_ETR	?	-2.7950	**	-0.1134				
		(0.0490)						
CASH_ETR					?	-1.4181		-0.0703
						(0.2890)		
TAX_GAIN	-	-9.6983	**	-0.2177	-	-8.1731	**	-0.1880
		(0.0150)				***(0.0240)***		
NOL	?	-3.4161		-0.0211	?	-7.1620		-0.0452
		(0.7870)				***(0.5450)***		
LEVERAGE	?	-0.2675		-0.0078	?	0.6504		0.0193
		(0.9090)				***(0.7830)***		
CF	-	-9.2457		-0.1582	-	-9.2345		-0.1613
		(0.1125)				***(0.1090)***		
SIZE	?	0.2642		0.0898	?	0.2782		0.0966
		(0.2880)				***(0.2210)***		
CAPEX	?	-4.8378		-0.1310	?	-5.2975		-0.1463
		(0.2160)				***(0.2420)***		
CF_VOL	-	-11.8369	*	-0.0964	-	-2.3477		-0.0196
		(0.0935)				***(0.3845)***		
PE	?	0.0193	*	0.1084	?	0.0232	*	0.1331
		(0.0720)				***(0.0720)***		
DIV_YLD	?	-31.4408		-0.1164	?	-30.7940		-0.1165
		(0.2280)				***(0.2370)***		
N		74				74		
Pseudo-R2		30.78				29.64		
% Correctly Predicted		54.2%				83.0%		
Area under the ROC curve		0.842				0.831		

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.8
Determinants of MLP IPO - Including *TAX_GAIN*NOL* Interaction

$$MLP = \beta_0 + \beta_1 TAX\_EXEMPT + \beta_2 TAX\_SENS + \beta_3 ETR + \beta_4 TAX\_GAIN + \beta_5 NOL + \beta_6 LEVERAGE + \beta_7 CF + \beta_8 SIZE + \beta_9 CAPEX + \beta_{10} CF\_VOL + \beta_{11} PE + \beta_{12} DIV\_YLD + \beta_{13} TAX\_GAIN*NOL + \varepsilon$$

	(1)			(2)		
	Coefficient		dy/dx	Coefficient		dy/dx
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
Intercept	?	7.5453		?	6.2434	
		(0.0620)			***(0.1000)***	
TAX_EXEMPT	-	-54.2940 **	-0.2056	-	-53.3706 **	-0.2032
		(0.0165)			***(0.0150)***	
TAX_SENS	?	-2.8061	-0.1369	?	-2.4198	-0.1188
		(0.2380)			***(0.2320)***	
GAAP_ETR	?	-2.4780	-0.0976			
		(0.1380)				
CASH_ETR				?	-1.2175	-0.0576
					(0.3460)	
TAX_GAIN	-	-12.6819 *	-0.2744	-	-12.7885 *	-0.2779
		(0.0605)			***(0.0545)***	
NOL	?	-44.2941	-0.2611	?	-56.0571	-0.3284
		(0.3780)			***(0.2010)***	
LEVERAGE	?	-1.3479	-0.0380	?	-1.0501	-0.0297
		(0.6220)			***(0.6990)***	
CF	-	-14.8340 *	-0.2441	-	-15.8691 **	-0.2617
		(0.0600)			***(0.0485)***	
SIZE	?	0.1489	0.0492	?	0.1820	0.0604
		(0.6210)			***(0.5020)***	
CAPEX	?	-3.3317	-0.0877	?	-2.9695	-0.0786
		(0.4560)			***(0.5360)***	
CF_VOL	-	-13.5838 *	-0.1073	-	-5.8512	-0.0466
		(0.0725)			***(0.2585)***	
PE	?	0.0189 *	0.1034	?	0.0221 *	0.1211
		(0.0870)			***(0.0770)***	
DIV_YLD	?	-20.8609	-0.0751	?	-21.3248	-0.0772
		(0.5200)			***(0.4940)***	
*TAX_GAIN*NOL*	?	203.5026	0.2790	?	240.9646	0.3291
		(0.3400)			***(0.2180)***	
N		74			74	
Pseudo-R2		34.92			34.22	
% Correctly Predicted		87.0%			86.7%	
Area under the ROC curve		0.871			0.868	

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Marginal effects (dy/dx) reflect the effect of a one standard deviation change across the mean of the variable, from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean, with all other variables held at their means. Variables are defined in Appendix A.

TABLE 4.9
Ownership Changes around MLP IPOs

	Panel A: Parent Firms				Panel B: Control Firms				Panel C: MLPs			
		Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO MLP - Post IPO Parent		
		Change	p-value			Change	p-value			Change	p-value	
Change in *TAX_SENS*	-	-3.17%	0.0051	***	?	-0.18%	0.8563		+	43.20%	<0.0001	***
Change in *TAX_EXEMPT*	?	0.01%	0.9172		?	-0.02%	0.8790		-	-1.76%	<0.0001	***

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. When predictions are made, *p*-values are one-tailed. Panel A (B) compares the parent (control) ownership in the quarter after the MLP IPO (date q in Figure 3.1) to the ownership in the quarter prior to the MLP IPO (date q-1 in Figure 3.1). Panel C compares the ownership of the MLP in the quarter following the MLP IPO (date q in Figure 3.1) to the parent ownership in the quarter after the MLP IPO (date q in Figure 3.1).

TABLE 4.10
Institutional Ownership Regression

ΔTAX_SENS or $\Delta TAX\_EXEMPT = \beta_0 + \beta_1 MLP + \beta_2 \Delta BETA + \beta_3 CG + \beta_4 LAGIO\% + \beta_5 ROA + \beta_6 SIZE + \varepsilon$

TAX_SENS or $TAX\_EXEMPT = \beta_0 + \beta_1 MLP + \beta_2 BETA + \beta_3 LAGIO\% + \beta_4 ROA + \beta_5 SIZE + \varepsilon$

	Change from Pre-IPO Parent to Post-IPO Parent				**MLP Ownership vs. Parent Ownership Post IPO**			
	(1)		(2)		(3)		(4)	
	ΔTAX_SENS		***ΔTAX_EXEMPT***		***TAX_SENS***		***TAX_EXEMPT***	
Variable	**Pred.**	Coefficient ***(p-value)***	**Pred.**	Coefficient ***(p-value)***	**Pred.**	Coefficient ***(p-value)***	**Pred.**	Coefficient ***(p-value)***
Intercept	?	0.0329	?	0.0031	?	0.1372	?	-0.0084
		(0.5725)		***(0.5277)***		***(0.3271)***		***(0.1303)***
MLP	-	-0.0325 **	?	-0.0002	+	0.4521 ***	-	-0.0146 ***
		(0.0155)		***(0.8897)***		***(0.0000)***		***(0.0000)***
ΔBETA	?	0.0152	?	0.0036 *	?	-0.0586 *	?	-0.0015
		(0.4338)		***(0.0772)***		***(0.0660)***		***(0.5280)***
CG	?	-0.0092	?	-0.0010				
		(0.5624)		***(0.6971)***				
LAGIO%	?	-0.0469	?	-0.0132	?	0.5808 ***	?	0.3563 ***
		(0.2376)		***(0.8990)***		***(0.0000)***		***(0.0018)***
ROA	?	0.0307	?	-0.0063	?	-0.0825	?	0.0127 *
		(0.7873)		***(0.5917)***		***(0.6091)***		***(0.0725)***
SIZE	?	-0.0019	?	-0.0002	?	0.0074	?	0.0027 ***
		(0.7204)		***(0.7689)***		***(0.6112)***		***(0.0069)***
N		76		76		72		72
Adjusted R2		1.8		(3.4)		72.1		70.8

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Variables are defined in Appendix A.

CHAPTER 5

ADDITIONAL ANALYSES

5.1. Preference for Control as an Alternative Explanation

An alternative explanation for some of the results presented in Table 4.3 and 4.9 is that large public pensions, who fall into the tax-exempt category, avoid MLPs for control reasons as opposed to tax reasons. Because unitholders in an MLP are limited partners, they have little ability to control the partnership; control rights are lower than those of stock owners. Public pensions tend to be active in making proxy proposals (e.g., Gillan and Starks 2000), an option generally unavailable to MLP unitholders. However, it is unlikely that this drives the relationships in Tables 4.3 and 4.9 for two reasons. First, because the parent firm typically retains the general partner interest in the MLP and therefore has control rights, pensions can exercise control indirectly through the parent. Second, due to investor demand, a number of investment vehicles (e.g., ETFs, mutual funds) have recently arisen that allow investment in MLPs without generating UBTI for the ultimate shareholder. These investment vehicles are designed to pay corporate taxes, allowing tax-exempt investors to invest in MLPs without UBTI consequences. Only tax-exempt investors benefit from this type of investment vehicle; all other investors owning this vehicle would unnecessarily subject themselves to double taxation (e.g., Fessler 2014). If tax-exempt investors generally avoid MLPs for non-tax reasons (e.g., control), there would be no demand for this type of investment vehicle.

I perform additional analysis to provide further evidence that Tables 4.3 and 4.9 identify tax-driven effects. I split tax-exempt investors into public pensions (i.e., investors likely to have a preference for control) and other tax-exempt investors (i.e., charities and corporate pensions not likely to have a preference for control). If control is the main driver of my results, I expect to see *only* public pensions avoiding MLP ownership. In contrast, in Table 5.1, I find that both public pensions and other tax-exempt investors avoid MLP ownership (p-values<0.001), suggesting that I identify a tax effect rather than a control effect.

5.2. Examining Tax-Sensitive Institutions and Individuals Separately

Within tax-sensitive investors, individuals receive additional tax advantages over tax-sensitive institutions.[47] First, if an individual investor holds an MLP unit until death, the unit receives a basis step-up to fair market value, eliminating gain attributable to previous basis reductions caused by cash distributions in excess of allocated taxable income. Since MLPs generally make high current distributions and older investors prefer income (Graham and Kumar 2006) this basis step-up is likely relevant for many individual MLP investors. Second, small MLP investments in tax-free individual accounts completely avoid taxation.[48]

[47] Barber and Odean (2003) find evidence that individuals consider taxes in their investment decisions, so it is likely individuals are aware of these additional advantages.

[48] All tax-exempt investors (including IRA accounts) are allowed to exempt $1,000 of UBTI from taxation (IRC Section 512(b)(12)). Given the median MLP yield of 6.4% (Wells Fargo 2013), of which 20% is taxable (Wells Fargo 2013), an individual would have to own over $78,000 of MLPs before incurring any tax. This is much larger than a typical individual brokerage account (Graham and Kumar 2006) and as large as a typical individual IRA account (Copeland 2014) but represents a small institutional position. Furthermore, the $1,000 exemption applies to each IRA, not each individual (IRC Section 408(e)(1)). Setting up separate IRAs provides an individual with separate $1,000 exemptions (Schiffres 1989; Equity Trust 2014).

I repeat my analyses after splitting tax-sensitive investors into institutions and individuals. In Table 5.3, Panel A, I continue to find no evidence that either group of tax-sensitive investor is associated with the parent's MLP IPO decision. All other results from Table 4.3 hold. However, in Table 5.2, I find that both the change in ownership of the parent (hypothesis 2a) and the difference in ownership between the MLP and parent (hypothesis 2b) are significantly larger for individual investors than tax-sensitive institutions (p-values<0.01), suggesting that the investors with the strongest incentive to own MLPs exhibit the strongest response to the MLP's formation.

5.3. Identification of Parent Investors Shifting to the MLP

Hypothesis 1a and 1b propose that firms cater to their investor base. Hypothesis 2a and 2b propose that investors sort to firms based on firm tax characteristics. Taken together, this implies that, if firms cater to the preferences of shareholders, those specific shareholders should react (i.e., sort) to the firms' catering behavior – i.e., existing a) tax-sensitive owners shift their ownership away from the parent and towards the MLP and b) tax-exempt owners avoid ownership of the MLP. In other words, the same tax-sensitive (tax-exempt) owners currently holding the parent firm should also own (avoid) the MLP. While I find evidence that only the existing level of tax-exempt investors is related to the firm's organizational form decision, examining which parent investors actually take an ownership position in the MLP provides additional insight on the catering hypothesis. Unfortunately, I can only track the owners across entities for institutions, not individuals.

In untabulated tests, I find that, on average, only 4.7% of tax-sensitive institutional owners of the parent prior to the MLP IPO take ownership in the MLP.[49] A significantly smaller percentage of tax-exempt investors in the parent firm prior to the MLP IPO take ownership in the MLP (1.1%, *p*-value=0.001), as expected. Considering that the MLP has much higher tax-sensitive ownership than the parent, the low percentage of the parent's tax-sensitive institutions taking ownership in the MLP indicates that MLP creation attracts *new* tax-sensitive individuals and institutions that previously had little interest in owning the parent, as discussed earlier.

Individually examining each tax-sensitive institution that owns the pre-carve out parent firm and invests in the MLP, the vast majority (77%) own a larger portion of the MLP than they owned in the parent firm prior to the MLP IPO (*p*-values<0.001 for the sign test and Wilcoxon signed-rank test), providing more direct evidence that at least some existing tax-sensitive investors shift ownership from the parent to the MLP. Further, the majority (61%) of these tax-sensitive institution that invest in the MLP decrease their ownership in the parent firm, suggesting that they are selling parent shares to purchase MLP shares (*p*-values<0.05 for the sign test and Wilcoxon signed-rank test).[50] Overall, this evidence is consistent with a fundamental change in a firm's investor base following an organizational form change.

[49] In other words, if there are 100 tax-sensitive institutional investors in a parent prior to an MLP IPO, on average, five of those same tax-sensitive institutional investors own the MLP following the IPO.
[50] On average, these tax-sensitive institutions own more of the MLP than they owned of the parent prior to the MLP IPO, and decrease their ownership in the parent firm. However, the mean shifts are not significant, likely due to several outliers that increase the standard deviation in the tests.

5.4. Financing Motivations

As discussed earlier, there are financing motivations for an MLP. In my main tests, I control for financing needs using several variables. Alternatively, I can control for financing by requiring matched control firms to exhibit a need for external financing in the year of the MLP announcement. Therefore, I repeat my tests after dropping all control firms that do not seek a sufficient amount of external financing in the year that its match firm announces the MLP IPO. I use stock sales and debt issuances to proxy for financing needs, and require that control firms seek at least $50 million of external financing because that is the minimum sought in my MLP IPO sample. I lose seven matched pairs and five control firms where I have another control firm and can retain the parent firm. Though my results weaken in the smaller sample, my main results hold (Table 5.3, Panel B). The level of tax-exempt ownership is negatively related to the MLP decision. The potential tax gain on the assets loses significance. ETR and cash flow volatility are no longer significant in the GAAP ETR regression, but become significant in the Cash ETR regression.

5.5. Conditional Logit

While conditional logits are rarely performed in accounting research, Cram, Karan, and Stuart (2009) and Stuart, Shin, Cram, and Karan (2013) argue that conditional logit is the proper method for analyzing matched samples of data. Using simulations, Cram et al. (2009) show that failure to use conditional logit when dealing with matched data can lead to incorrect acceptance or rejection of the null hypothesis. Conceptually,

conditional logit creates a pair fixed effect indicator variable for each matched pair.[51] This results in focusing specifically on pairwise differences, the construct of interest, rather than pooled differences. However, as with any fixed effects model, this comes at a cost of a reduction in the available degrees of freedom. This is especially costly in a small sample, as in my study. In order to conserve degrees of freedom and execute my model, I estimate a conditional logit in my sample after dropping the least significant variables in my original analysis: *NOL*, *LEVERAGE*, and *SIZE*.

As expected, results presented in Table 5.3, Panel C, are weaker but generally consistent with my main results. Most importantly, the level of tax-exempt ownership is significantly negatively related to the MLP IPO decision. In this specification, I also find that the level of tax-sensitive ownership is negatively related to the MLP IPO decision, providing some support that managers cater to *new* shareholders in forming the MLP. Unlike some of the examples in Cram et al. (2009), none of my variables of interest or statistically significant variables change signs. The *CAPEX* variable changes signs but is statistically indistinguishable from zero in the main regressions and conditional logit. This suggests that my main results likely do not suffer from the potential problems noted in Cram et al. (2009) and Stuart et al. (2013).

[51] As noted in Cram et al. (2009), actually including the pair dummy is not appropriate for technical reasons; instead the researcher should use the conditional logit routines available in statistical software. I use STATA's CLOGIT command to perform this analysis.

5.6. Reduced Model

An alternative concern is that the main model has too many variables given the small sample size.[52] While the multicollinearity measures noted earlier give no indication of problems in the main model, I run a reduced model to verify that my results are not a product of oversaturation of the model. In this reduced model, I drop all of the insignificant variables in my main model (*NOL*, *LEVERAGE*, *SIZE*, *CAPEX*, and *DIV_YLD*) and repeat my analysis (Table 5.3, Panel D). All inferences are consistent with my main analysis. However, in this reduced model, I find that the level of tax-sensitive ownership is negatively related to the MLP IPO decision, indicating that managers create MLPs to attract new tax-sensitive investors.

5.7. Operational Differences between Parent and Control Firms

In my matching procedure, I match a parent firm and MLP to a control firm based on the control firm's ability to create an MLP IPO with similar assets to the parent firm's MLP IPO. That is, I require that both the parent firm and the control firm have the type of assets that the parent used to form the MLP. However, the parent or control firm could have different mixes of assets in addition to the MLP assets. For example, Markwest Hydrocarbon operated gas pipelines (referred to as "midstream" energy assets) as well as its primary business of exploring for gas ("upstream" operations). It created an MLP containing upstream assets, and matches to a firm with mainly upstream assets (Remington Oil and Gas). To control for the possibility that different asset mixes influence my results, I include dummy variables for any combination of upstream,

[52] For example, Long and Freese (2005) suggest having at least 10 observations per parameter. This reduced model approximately satisfies that suggestion.

midstream, and downstream (e.g., refineries) assets to for account any potential operational differences between parent and control firms. I exclude the dummy variable for integrated firms (i.e., all three industries) to prevent perfect multicollinearity. Results, presented in Table 5.3, Panel E, are generally robust to controlling for these additional dummy variables. Most relevant, I continue to find that the level of tax-exempt ownership is negatively related to the MLP IPO decision. In this specification, I also find evidence that the level of tax-sensitive ownership is negatively related to the MLP IPO decision, indicating that managers use MLP IPOs to attract new tax-sensitive investors. However, ETR and the potential gain on MLP formation are no longer related to the MLP IPO decision.

5.8. Shared Auditors

Recent research (Cai, Kim, Park, and White 2015; Dhaliwal, Lamoreaux, Litov, and Neyland 2015) suggests that shared auditors are involved in a number of mergers and acquisitions and facilitate knowledge sharing between firms. Therefore, an auditor familiar with MLP IPOs could make the process easier for the firms they audit, increasing the likelihood of an MLP IPO. To control for the possibility that parent firms share auditors with MLP experience while control firms do not, I include dummy variables for the Big 5 auditors as well as a dummy variable for other auditors. I exclude the dummy variable for Andersen to avoid perfect multicollinearity. The results presented in Table 5.3, Panel F, are generally consistent with my main results. The level of tax-exempt ownership remains significantly negatively related to the MLP IPO decision.

5.9. Falsification Test: Non-MLP Carve-Outs

To provide additional evidence that taxes as opposed to financing or other factors specific to carve-outs are driving my results, I repeat my tests in a sample of carve-outs, excluding MLP carve-outs. I expect to find no results on my hypotheses in this sample. Specifically, I select all U.S. firm carve-outs from SDC occurring between 1993 and 2013 involving any type of common stock (i.e., not partnership interests).[53] To perform my tests and use a sample similar to my MLP sample, I require that the parent firm own 100% of the carve-out firm before the carve-out. I require public parent firms that have data in Compustat and Thomson Reuters. Finally, I require that each parent firm have at least one industry-size-year match firm following the matching procedures discussed in Section 3.1. This leaves me with 34 parent firms and 48 match firms.

I estimate Equation 1 in this sample of firms to examine results on hypotheses 1a and 1b.[54] As expected, I find no evidence that tax-sensitive or tax-exempt ownership is related to these non-MLP carve-outs (p-values>0.75, untabulated). In sum, I find that only carve-outs with shareholder-level tax consequences (i.e., MLP carve-outs) are associated with shareholder-level taxes. Therefore, it is unlikely that other carve-out specific factors are responsible for my hypothesis 1a and 1b results.

Next, I analyze changes in tax-sensitive and tax-exempt ownership for the parent firm around the non-MLP carve-out (hypothesis 2a). As expected, in the non-MLP carve-out sample, I find no evidence of a change in tax-sensitive ownership in the parent firm from before to after the carve-out (p-value>0.36, untabulated). This suggests that, on

[53] SDC identifies carve-outs by marking the "spinoff type" as yes. Although SDC refers to these as spin-offs, they are carve-outs.
[54] I exclude the *TAX_GAIN* variable from this equation, because there is no requirement to amortize gain into income in a corporate carve-out as there is in an MLP carve-out.

average, tax-sensitive investors shift their ownership from a parent firm to a carve-out when they have clear tax preferences (i.e., MLP carve-outs) and not for carve-outs in general.

Finally, I compare parent ownership to carve-out ownership following the carve-out (hypothesis 2b). As expected, I find no evidence that tax-sensitive ownership differs between the parent and the carve-out (p-value>0.35, untabulated). However, I find evidence that tax-exempt ownership is lower in the carve-out firm than in the parent following the carve-out (p-value=0.001, untabulated). Further investigation shows that this effect occurs only in public pensions (i.e., investors that prefer control). In most carve-outs, the parent retains a significant ownership stake so this lower ownership likely represents public pensions' preference for control. In the sample of MLPs, I find that both public pensions and other tax-exempt investors own less of the MLP than the parent, which is more consistent with a tax effect than a control effect.

In sum, I find very little support for my hypotheses in a sample of non-MLP carve-outs. This provides additional evidence that shareholder-level taxes are responsible for the results in my main tests; using a similar setting without tax differences produces no results.

5.10. Falsification Test: MLP Ownership versus Corporate "MLP" Ownership

As shown in Table 3.1, I drop five observations from my sample that are MLP-like entities which elected to be taxed as corporations. These entities either have operations similar to MLPs or are corporate entities set up to own a portion of a separate MLP. Therefore, comparing the ownership of these entities to MLPs provides additional

insight on whether taxes affect investors' ownership decisions. However, only three of these corporate entities have sufficient ownership data to compare to MLPs, resulting in a relatively low power test.

I find that, on average, in the quarter immediately following the IPO, tax-sensitive investors own 78.5% of the MLPs, but only 53.4% of the corporate entities. Although tax-sensitive MLP ownership is approximately 47% (78.5%/53.4% - 1) higher than tax-sensitive corporate ownership, the difference is not significant at conventional levels (*p*-value=0.19, one-tailed, untabulated) due to the small sample size. Similarly, tax-exempt investors own, on average, 1.3% of the corporate entities but only 0.2% of MLPs. Although tax-exempt ownership is approximately 6.5 times higher in corporate entities than in MLPs, the difference is again not significant at conventional levels (*p*-value=0.13, one-tailed, untabulated) due to the small sample size. Despite the lack of significant results, on balance this suggests that tax-sensitive (tax-exempt) investors purchase (avoid) MLPs for tax reasons, relative to otherwise similar entities that are taxed as corporations.

5.11. Changes in Parent Ownership around MLP Announcement and from Announcement to Effective Date

Finally, I examine ownership changes in MLPs around the IPO announcement date, as well as from the announcement date to the effective date. Hypotheses 2a and 2b assume that the creation of the MLP itself is the point in time that tax effects, and therefore investor reactions, occur. However, it is also possible that investors adjust their ownership prior to the IPO effective date. For example, once an MLP IPO is announced,

tax-sensitive investors could immediately sell parent shares to prepare to shift their ownership to the yet to be created MLP.

I find no evidence that tax-sensitive or tax-exempt ownership in the parent firm changes from before to after the MLP IPO announcement (p-values>0.16, untabulated). I also find no evidence that tax-sensitive or tax-exempt ownership changes from the quarter after the MLP IPO announcement to the quarter before the MLP IPO effective date (p-values>0.36, untabulated). This suggests that the formation of the MLP itself creates the tax incentives that alter investor bases.

TABLE 5.1
Ownership Changes around MLP IPOs - Separating Tax-Exempt Investors With and Without Control Preferences

	Panel A: Parent Firms				Panel B: Control Firms				Panel C: MLPs			
		Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO MLP - Post IPO Parent		
		Change	p-value			Change	p-value			Change	p-value	
Change in *TAX_SENS*	-	-3.17%	0.0051	***	?	-0.18%	0.8563		+	43.20%	<0.0001	***
Change in *TAX_EXEMPT_PENSIONS*	?	0.02%	0.8007		?	-0.04%	0.7726		-	-1.46%	<0.0001	***
Change in *TAX_EXEMPT_OTHER*	?	-0.01%	0.7610		?	0.02%	0.6461		-	-0.29%	<0.0001	***

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. When predictions are made, *p*-values are one-tailed. Panel A (B) compares the parent (control) ownership in the quarter after the MLP IPO (date q in Figure 3.1) to the ownership in the quarter prior to the MLP IPO (date q-1 in Figure 3.1). Panel C compares the ownership of the MLP in the quarter following the MLP IPO (date q in Figure 3.1) to the parent ownership in the quarter after the MLP IPO (date q in Figure 3.1).

TABLE 5.2
Ownership Changes around MLP IPOs - Separating Tax-Sensitive Individuals and Institutions

	Panel A: Parent Firms				Panel B: Control Firms				Panel C: MLPs			
		Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO - Pre IPO				Change In % Ownership: Post IPO MLP - Post IPO Parent		
		Change	p-value			Change	p-value			Change	p-value	
Change in *TAX_SENS_INST*	-	0.11%	0.5891		?	0.06%	0.686		+	0.88%	0.1951	
Change in *TAX_SENS_INDIV*	-	-3.28%	0.0059	***	?	-0.24%	0.7948		+	42.32%	<0.0001	***
Change in *TAX_EXEMPT*	?	0.01%	0.9172		?	-0.02%	0.8790		-	-1.76%	<0.0001	***
Difference: *TAX_SENS_INDIV* - *TAX_SENS_INST*	-	-3.39%	0.0077	***	?	-0.30%	0.7338		+	41.44%	<0.0001	***

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. When predictions are made, *p*-values are one-tailed. Panel A (B) compares the parent (control) ownership in the quarter after the MLP IPO (date q in Figure 3.1) to the ownership in the quarter prior to the MLP IPO (date q-1 in Figure 3.1). Panel C compares the ownership of the MLP in the quarter following the MLP IPO (date q in Figure 3.1) to the parent ownership in the quarter after the MLP IPO (date q in Figure 3.1).

TABLE 5.3
Determinants of MLP IPO - Robustness Tests

Panel A: Separating Tax-Sensitive Individuals and Institutions						
	(1)			(2)		
		Coefficient			Coefficient	
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
TAX_EXEMPT	-	-54.3579	**	-	-52.1969	**
		(0.0190)			***(0.0200)***	
TAX_SENS_INST	?	-0.0834		?	-1.2588	
		(0.9960)			***(0.9400)***	
TAX_SENS_INDIV	?	-3.5596		?	-3.2546	
		(0.1470)			***(0.1320)***	
GAAP_ETR	?	-3.0993	*			
		(0.0570)				
CASH_ETR				?	-1.3805	
					(0.3050)	
TAX_GAIN	-	-8.2939	**	-	-6.8083	**
		(0.0340)			***(0.0480)***	
CF	-	-12.4588	*	-	-12.6365	*
		(0.0620)			***(0.0520)***	
CF_VOL	-	-13.1402	*	-	-2.3900	
		(0.0765)			***(0.3945)***	
PE	?	0.0205	*	?	0.0253	**
		(0.0750)			***(0.0470)***	
All Eqn (1) Control Variables?		Yes			Yes	
N		74			74	
Pseudo-R2		34.41			32.79	
% Correctly Predicted		86.6%			84.1%	
Panel B: Requiring Matches Seek at least $50 Million of External Financing						
TAX_EXEMPT	-	-47.4708	*	-	-50.1062	*
		(0.0710)			***(0.0725)***	
TAX_SENS	?	-2.4684		?	-2.1652	
		(0.3760)			***(0.4520)***	
GAAP_ETR	?	-0.9481				
		(0.6710)				
CASH_ETR				?	-3.2525	*
					(0.0730)	
TAX_GAIN	-	-5.3535		-	-3.7638	
		(0.1320)			***(0.2095)***	
CF	-	-20.6284	**	-	-27.2501	**
		(0.0370)			***(0.0105)***	
CF_VOL	-	-20.6561		-	-37.4410	**
		(0.1385)			***(0.0360)***	
PE	?	0.0238	*	?	0.0229	*
		(0.0760)			***(0.0910)***	
All Eqn (1) Control Variables?		Yes			Yes	
N		55			55	
Pseudo-R2		33.84			37.90	
% Correctly Predicted		85.3%			87.0%	

TABLE 5.3 (Cont'd)
Determinants of MLP IPO - Robustness Tests

Panel C: Conditional Logit						
	(1)			(2)		
		Coefficient			Coefficient	
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
TAX_EXEMPT	-	-462.6906	*	-	-293.0034	*
		(0.0655)			***(0.0760)***	
TAX_SENS	?	-10.9792	*	?	-6.4293	
		(0.1000)			***(0.1210)***	
GAAP_ETR	?	-10.1037				
		(0.1220)				
CASH_ETR				?	-1.0321	
					(0.8070)	
TAX_GAIN	-	-78.5814	*	-	-62.9680	**
		(0.0645)			***(0.0325)***	
CF	-	-149.5372	*	-	-108.7554	**
		(0.0805)			***(0.0190)***	
CF_VOL	-	-61.4130	*	-	-23.9597	*
		(0.0615)			***(0.0580)***	
PE	?	0.0387		?	0.0797	***
		(0.1600)			***(0.0020)***	
All Eqn (1) Control Variables?		exclude *NOL, LEVERAGE, SIZE*			exclude *NOL, LEVERAGE, SIZE*	
N		74			74	
Pseudo-R2		81.04			78.24	
Panel D: Reduced Model						
TAX_EXEMPT	-	-42.0571	**	-	-39.1568	**
		(0.0220)			***(0.0340)***	
TAX_SENS	?	-4.0331	**	?	-3.7522	**
		(0.0170)			***(0.0180)***	
GAAP_ETR	?	-2.9874	**			
		(0.0350)				
CASH_ETR				?	-1.1494	
					(0.3280)	
TAX_GAIN	-	-7.7521	**	-	-6.6276	**
		(0.0300)			***(0.0440)***	
CF	-	-16.5905	***	-	-16.9341	***
		(0.0035)			***(0.0015)***	
CF_VOL	-	-9.8202	*	-	-1.4457	
		(0.0980)			***(0.4295)***	
PE	?	0.0229	*	?	0.0274	*
		(0.0710)			***(0.0960)***	
All Eqn (1) Control Variables?		No			No	
N		74			74	
Pseudo-R2		31.60			29.32	
% Correctly Predicted		85.2%			83.0%	

TABLE 5.3 (Cont'd)
Determinants of MLP IPO - Robustness Tests

Panel E: Controlling for Operational Differences						
		(1)			(2)	
		Coefficient			Coefficient	
Variable	**Pred.**	***(p-value)***		**Pred.**	***(p-value)***	
TAX_EXEMPT	-	-11.5117	**	-	-10.7929	***
		(0.0125)			***(0.0055)***	
TAX_SENS	?	-4.9368	*	?	-4.3317	*
		(0.0690)			***(0.0590)***	
GAAP_ETR	?	-3.8945				
		(0.1020)				
CASH_ETR				?	-3.2079	
					(0.1350)	
TAX_GAIN	-	-3.4889		-	-2.5367	
		(0.1660)			***(0.2735)***	
NOL	?	-3.1412		?	-3.8744	*
		(0.1720)			***(0.0550)***	
CF	-	-8.9051	**	-	-9.4175	***
		(0.0115)			***(0.0065)***	
CF_VOL	-	-7.5015	**	-	-3.2571	
		(0.0395)			***(0.1075)***	
PE	?	4.2165	*	?	5.5566	
		(0.0780)			***(0.1680)***	
All Eqn (1) Control Variables?		Yes			Yes	
N		74			74	
Pseudo-R2		47.02			47.59	
% Correctly Predicted		91.3%			92.3%	
Panel F: Controlling for Auditors						
TAX_EXEMPT	-	-102.4821	***	-	-120.3445	***
		(0.0035)			***(0.0060)***	
TAX_SENS	?	-5.5615	*	?	-5.6194	
		(0.0870)			***(0.2120)***	
GAAP_ETR	?	-0.8486				
		(0.7360)				
CASH_ETR				?	-5.3029	**
					(0.0380)	
TAX_GAIN	-	-13.4252		-	-14.2156	
		(0.1430)			***(0.1180)***	
CF	-	-24.3368	**	-	-36.3737	***
		(0.0170)			***(0.0060)***	
CF_VOL	-	-8.3716		-	-3.3862	
		(0.3010)			***(0.3940)***	
PE	?	7.6074	**	?	11.6581	***
		(0.0140)			***(0.0001)***	
All Eqn (1) Control Variables?		Yes			Yes	
N		74			74	
Pseudo-R2		62.05			66.71	
% Correctly Predicted		95.5%			96.4%	

TABLE 5.3 (Cont'd)
Determinants of MLP IPO - Robustness Tests

***, **, * indicate significance at the one percent, five percent, and ten percent levels, respectively. This table presents results on significant variables and variables of interest for the robustness test indicated. Huber-White robust standard errors are clustered by firm and are used to control for heteroscedasticity and serial correlation. When predictions are made, *p*-values are one-tailed. Variables are defined in Appendix A.

CHAPTER 6

CONCLUSION

Understanding a firm's organizational form choice is one of the most fundamental issues in accounting, finance, and economics. However, nearly all entities with publicly available information use only the corporate organizational form, limiting researchers' ability to examine determinants of a firm's organizational form choice. I extend prior organizational form literature by examining firms that are publicly traded before and after an organizational form choice, allowing explicit consideration of the effect of heterogeneous shareholder-level taxes on organizational form choice as well as on investors' reactions to organizational form decisions. My setting, which allows identification of heterogeneous shareholder-level taxes, also provides insight into whether firms cater to their investor base or investors sort to a firm's tax characteristics, or both.

Consistent with shareholder-level taxes influencing organizational form decisions (and firms catering to existing investors), I find that the greater a firm's tax-exempt investor base, the less likely the firm is to form an MLP. For a one standard deviation increase in tax-exempt investors across the mean tax-exempt ownership, firms are 20% less likely to form an MLP. Including shareholder-level taxes in the organizational form choice models improves the fit, indicating that shareholder-level taxes are an important, previously unexplored determinant of organizational form choice.

Consistent with a fundamental change in a firm's investor base following an organizational form change (and sorting), I find that tax-sensitive investors reduce ownership in the parent and take larger ownership positions in the MLP following an MLP IPO and that tax-exempt investors hold a smaller percentage of the MLP than the parent. Tax-sensitive investors decrease their ownership in the parent by 3.2% from the quarter before to the quarter after the MLP IPO. In the quarter following the MLP IPO, tax-sensitive investors own 43.2% more of the MLP than the parent while tax-exempt investors own 1.8% less of the MLP than the parent. I also find that most tax-sensitive institutional investors in the parent do not take ownership in the MLP, providing further evidence of a fundamental change in a firm's investor base following an organizational form change. In combination, these results suggest that shareholder-level taxes play an important role in investors' ownership decisions for both the parent and the MLP around an organizational form change.

This study answers calls for additional research on the influence of shareholder-level taxes on organizational form (Graham 2003, 2013; Hanlon and Heitzman 2010) and on the effect of taxes on stock ownership (Bank and Cheffins 2008). I provide evidence that cross-sectional differences in shareholder-level taxation have a significant effect on how firms organize their operations. Additionally, my study suggests that shareholder-level taxes influence stock ownership decisions, resulting in fundamentally different investor bases across differentially taxed assets. My results also contribute to the broader literature on catering (by firms) and sorting (by investors). From a policy perspective, this evidence suggests that key differences in investor tax policy across entity types has a

nontrivial effect on organizational form decisions, as well as on investors' stock ownership decisions.

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APPENDIX A
Variable Definitions

Variable	Definition
MLP	is an indicator variable that equals one if the firm created an MLP and equals zero for matched control firms. In Table 4.10, columns 3 and 4, this variable equals one for MLPs and zero for parent firms.
TAX_EXEMPT	equals the number of shares owned by tax-exempt investors (SHARES from Thomson Reuters), such as pensions, endowments, and charities, divided by total shares outstanding and calculated in the quarter immediately prior to each parent firm's MLP IPO announcement. Shares outstanding (in thousands) equal SHROUT2 from Thomson Reuters, or SHROUT from CRSP if missing SHROUT2. For MLPs, shares outstanding are hand collected from 10-Ks due to errors in both Thomson Reuters and CRSP. Tax-exempt institutions are identified using the institution type from Blouin et al. (2013) and available on Brian Bushee's website (CPS, PPS, or UFE).
TAX_SENS	equals the sum of individual (*TAX_SENS_INDIV*) and tax-sensitive institutional (*TAX_SENS_INST*) ownership in the quarter immediately prior to each parent firm's MLP IPO announcement. Tax-sensitive institutional ownership equals the number of shares owned by tax-sensitive institutions (SHARES from Thomson Reuters) divided by total shares outstanding. Shares outstanding (in thousands) equal SHROUT2 from Thomson Reuters, or SHROUT from CRSP if missing SHROUT2. For MLPs, shares outstanding are hand collected from 10-Ks due to errors in both Thomson Reuters and CRSP. Institutions are initially classified as tax-sensitive each year based on the classification method in Blouin et al. (2013). If the majority of the institution's years are classified as tax-sensitive, the institution is classified as tax-sensitive for all years, otherwise the institution is not classified as tax-sensitive. Individual ownership equals the percentage of shares owned by individual investors, calculated as one minus the percentage of shares owned by all institutions (1 - [∑ SHARES]/[SHROUT2 or SHROUT or hand-collected shares]).

APPENDIX A (Continued)
Variable Definitions

Variable	Definition
ETR	equals *GAAP_ETR* or *CASH_ETR*. *GAAP_ETR* equals total tax expense divided by pretax income (TXT/PI). *CASH_ETR* equals cash taxes paid divided by pretax income (TXPD/PI). I hand collect these items from 10-Ks if missing in Compustat and verify all of the computations using firm 10-Ks. If tax expense (taxes paid) is negative, I set *GAAP_ETR* (*CASH_ETR*) equal to zero (Gupta and Newberry 1997). If tax expense (taxes paid) is positive but income is negative, I set *GAAP_ETR* (*CASH_ETR*) to one (Gupta and Newberry 1997). In two cases, firms with losses paid very small positive amounts of tax (<0.5% of pretax income). Because these tax rates were effectively zero, I set *CASH_ETR* to zero instead of one for these firms.
TAX_GAIN	equals the estimated value of the firm's total tax depreciation scaled by assets (AT). The value of total tax depreciation is calculated by calculating the tax benefit of accumulated book depreciation assuming a 35% tax rate ([PPEGT-PPENT]*35%) and adding the total value of accumulated additional tax depreciation. The value of accumulated additional tax depreciation equals the property, plant, and equipment deferred tax liability hand-collected from firm 10-Ks.
NOL	equals the firm's deferred tax asset for net operating losses ignoring any valuation allowances, scaled by total assets (AT). I hand collect the deferred tax asset amount from firm 10-Ks.
LEVERAGE	equals the firm's total debt scaled by assets ([DLC + DLTT]/AT).
CF	equals the firm's operating cash flow scaled by assets ([OANCF-XIDOC]/AT).
SIZE	equals the natural log of the firm's total assets (AT).
CAPEX	equals the firm's total capital expenditures divided by total assets (CAPX/AT).

APPENDIX A (Continued)
Variable Definitions

Variable	Definition
CF_VOL	equals the standard deviation of the firm's cash flow (*CF*) over the current and two prior years (*t* to *t-2*).
PE	equals the firm's price-to-earnings ratio, calculated as share price divided by diluted earnings per share before extraordinary items (PRCC_F/EPSFX).
DIV_YLD	equals the dividends paid by the firm divided by the market capitalization of the firm (DVC/[PRCC_F*CSHO]).
ΔTAX_SENS (Parent)	equals the change in *TAX_SENS* from the quarter immediately prior to the MLP IPO to the quarter immediately following the MLP IPO.
ΔTAX_EXEMPT (Parent)	equals the change in *TAX_EXEMPT* from the quarter immediately prior to the MLP IPO to the quarter immediately following the MLP IPO.
ΔTAX_SENS (MLP)	equals the difference between *TAX_SENS* of the parent and the MLP in the quarter immediately following the MLP IPO.
ΔTAX_EXEMPT (MLP)	equals the difference between *TAX_EXEMPT* of the parent and the MLP in the quarter immediately following the MLP IPO.
ΔBETA	equals the firm's post-MLP IPO beta minus the firm's pre-MLP IPO beta. Beta is calculated using the market model with value-weighted returns as the index (VWRETD). Pre-IPO beta is measured from *n*-250 to *n*-20 where *n* is the IPO effective date. Post-IPO beta is measured from *n*+20 to *n*+250. I require data for 200 days pre-IPO. I require 80 days post-IPO to allow year 2013 observations to remain in the sample. *BETA* used in Table 4.10, columns 3 and 4 represents only the post-IPO beta.
CG	is an indicator variable that equals one if the change in the parent firm's stock price over the four calendar years prior to the calendar year of the MLP IPO is positive, and equals zero otherwise. If the firm does not have four calendar years of data available, I use all available calendar years.
LAGIO%	equals the ownership as of the quarter prior to the MLP IPO. When *ΔTAX_SENS* is the dependent variable, this equals *TAX_SENS*. When *ΔTAX_EXEMPT* is the dependent variable, this equals *TAX_EXEMPT*.
ROA	equals income before extraordinary items divided by total assets in the year of the MLP IPO (IB/AT).