

Matching Organizational Structure with Firm Attributes: A Study of Master Limited Partnerships

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Abstract. To create value and reduce agency costs, firms adopt available organizational structures that match their attributes. This paper studies the characteristics of firms that choose to become master limited partnerships (MLPs). The MLP sample is dominated by firms in low-growth industries that have highly focused operations and superior profitability compared to their industry peers. After becoming an MLP, sample firms reduce capital expenditures and increase cash distributions, taking advantage of their focus, profitability, and status as non-taxable entities. A subsample of MLPs subsequently change back to corporate form. After becoming corporations, these firms reverse course by cutting cash distributions and increasing capital spending. This cycle demonstrates how firms restructure to adopt organizational forms that best fit their needs.

Corporations have engaged in a variety of restructuring activities since the early 1980s. Jensen and Meckling (1976) assert that one goal in the selection of organizational form is the minimization of agency costs. Changing organizational form or structure can reduce agency costs and create value (Fama and Jensen, 1983a, b). Several researchers have suggested that firms with specific attributes select particular organizational forms. (See Lehn, Netter, and Poulsen (1990) on dual class recapitalizations and LBOs.) Firms' attributes may also change over time, making the adoption of a new organizational form desirable. The development and availability of new organizational forms may present the opportunities firms require to adopt structures that better match their needs.

This paper uses a sample of master limited partnerships (MLPs) to study the matching of firm attributes to organizational structure. The MLP phenomenon is quite small; only about 150 firms adopted this form in the period from 1981 to 1990. While the number of MLPs in existence is minuscule relative to the number of corporations, both in the aggregate and in any given industry, MLPs do provide a unique opportunity to study organizational form changes. Limited partnerships

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and corporations are very different, especially with regard to governance and tax treatment.¹ Most limited partnerships are private firms and access to data about their performance and characteristics is unavailable. MLPs on the other hand are publicly-traded limited partnerships and data are more easily accessible. Apache Petroleum became the first MLP in 1981. Apache and others adopting the MLP form have publicly-traded equity units on a major US exchange.

MLPs have a general partner who controls operations and limited partners (equity investors or unitholders) who are not active in management. Governance in an MLP is accomplished via the partnership agreement; there is no board of directors, as in a corporation. Corporations pay taxes; but, as a partnership, the MLP is not a taxable entity. These two distinguishing features, governance and tax treatment, make studying the MLP a useful way to evaluate reasons for changes in organizational structure. The findings suggest that highly profitable firms in mature industries tend to become MLPs. Upon changeover from corporate form, MLPs reduce capital expenditures and increase cash distributions to investors, taking advantage of favorable tax treatment. A subsample of MLPs subsequently reconverts to corporate form, reversing course by cutting cash distributions and increasing capital spending. This complete cycle illustrates the matching between organizational structure changes and firm attributes.

The impacts of organizational structure changes are of interest to researchers in several different contexts. Masulis (1987) examines the conversion of mutual savings and loans to stock charter. Kaplan (1989), Muscarella and Vetsuypens (1990), and Smith (1990) study management buyouts and their impact on efficiency. Mikkelsen and Partch (1992) evaluate corporate performance after a change to two classes of common stock. Lehn, Netter, and Poulsen (1990) examine dual-class recapitalizations and compare them to leveraged buyouts in terms of operational performance. Brickley and Dark (1987) and Brickley, Dark and Weisbach (1991) analyze the choice of organizational form as it relates to franchising. Denis and Denis (1993) study the effects of leveraged recapitalizations on the operations of publicly-traded firms. Table I presents a summary of selected studies of changes in organizational form.

One goal of this recent literature is to assess and explain any differences in operational performance based on the changes in the organizational form. Muscarella and Vetsuypens (1990), for example, find improved profitability in a sample of firms that undergo a leveraged buyout (LBO). The authors trace these improvements to cost reductions, and document the higher levels of debt and management ownership of equity associated with the LBO firms. The changes in the governance structure for these LBO firms thus create a new organizational structure more efficient for them than its predecessor. Denis and Denis (1993) show that similar operating improvements are gained by firms that issue large amounts of debt but continue to have their equity publicly traded.

¹ See Collins and Bey (1986) for a more complete examination of the differences between the MLP and the corporation.

Table I. Selective studies of changes in organizational form

Change in organizational form	Major feature	Representative studies
Conversion from mutual to stock charter	Stockholders become residual claimants	Masulis (1987)
Conversion from stock charter to mutual	Customers become residual claimants	Mayers and Smith (1986)
Dual-class stock recapitalization	Two classes of stock with different voting rights	Partch (1987) Lehn, Netter and Poulsen (1990) Mikkelsen and Partch (1992)
Management or leveraged buyouts	Company becomes private by issuing a large amount of debt	Kaplan (1989) Muscarella and Vetsuypens (1990) Smith (1990)
Leveraged recapitalization	Company issues a large amount of debt but remain publicly traded	Denis and Denis (1993)
Master limited partnership	Stockholders become limited partners, partnership claims are publicly traded	Michaely and Shaw (1995) Ciccotello and Muscarella (1997)

Lehn, Netter, and Poulsen's (1990) study of dual-class recapitalizations and LBOs finds that firms with greater growth opportunities, lower agency costs, and lower tax liabilities are more likely to consolidate control through dual-class recapitalization than through an LBO. The authors argue that these results help to increase the understanding of organizational form changes by showing the systematic relationship between the methods of organizational change and the underlying attributes of the firm. No one organizational form is thus best for all firms, but efficiencies are gained through closely matching firm attributes and organizational structure.

This paper builds on the existing literature on organizational change by examining MLPs. Like LBOs and leveraged recapitalizations (LRs), MLPs entail a shift in both ownership structure and the monitoring environment of the firm. But in an MLP, the firm abandons the corporate form altogether. This research takes advantage of the publicly-available data for MLPs to assess the differences between the MLP restructuring and those such as the LBO or LR. Since the MLP is unlike the corporation in terms of tax and governance characteristics, this study provides a broader examination of the reasons for organizational change.

One important difference between the MLP and the corporation is that the MLP is not a taxable entity. To maintain partnership tax status, MLPs must follow US federal tax guidelines. These tax rules can limit the flexibility of MLP operations. One example is The Revenue Act of 1987, which states that MLPs formed after that time can have only one line of business taxed as a partnership.² Partnership tax status can be a desirable feature. Tell (1986) suggests that it is the primary motivation for the creation of an MLP. Michaely and Shaw (1995) outline the advantages in this way: 'Partnerships, unlike corporations, do not pay tax on earned income. Instead, the tax is paid by each shareholder on the pro-rata share of the MLP's income at the time the income is earned. In addition, dividends received by the partnership shareholders are not taxed, which allows shareholders to avoid the double taxation borne by corporate shareholders. These tax benefits were increased in the Tax Reform Act of 1986, under which the average tax rates paid by individuals were reduced to levels below that paid by corporations' (id. at page 21). As Collins and Bey (1986) note, this feature makes MLPs attractive organizations from which to distribute cash to equity investors. Despite these advantages, the recordkeeping requirements for tax purposes in an MLP are cumbersome. As Guenther (1992) observes, the extra costs for partnership tax reporting can easily consume more than 2% of total revenues. Partnership tax forms are a nightmare for investors as well. This is due, in part, to the partial return of principal accompanying each cash distribution to investors. This return of principal alters the investor's basis in the MLP equity units.

² The 1987 Act also preserved the tax benefits for existing MLPs and limited favorable tax treatment for new MLP formations to particular industries. Most MLPs in the sample form in 1987 or earlier.

While MLPs have tax advantages for individual investors, they present tax problems for institutional investors. MLP income is considered unrelated business income and it is taxable to normally tax-exempt institutions. In addition, corporate shareholders in MLPs do not receive a deduction for MLP distributions as they would if they were receiving dividends from another corporation. The result of these tax treatments is that MLP equity units are typically held by individuals, and not institutions or corporations.

Besides the differences in tax treatments from a corporation, MLP governance structures also differ. An MLP has no board of directors. It is run by a general partner whose removal is often only by supermajority vote of the limited partners. Michaely and Shaw (1995) suggest that this may be another reason why institutional shareholders avoid MLPs, as they would have less control over management than they would in a corporation. In an MLP, the rights of investors and the duties of management are delineated in great detail via the partnership agreement prior to the commencement of operations. Kensinger and Martin (1986, 1988) point out that the reduction of management discretion on matters like scope of operations, cash distributions to investors, and investment policy reduces agency costs.³ Kensinger and Martin (1986) call the MLP a 'quiet restructuring' and argue that the MLP form is superior to the corporation in a low-growth sales environment.⁴ Management generally has less discretion in an MLP than a corporation. Managers are often restricted, either by the partnership agreement or by tax law to investing in specific lines of business, limiting the variety of ventures the firm can undertake.

Given these agency cost and tax advantages, why didn't all firms become MLPs? One significant reason is that the form became unavailable for most firms after the Revenue Act of 1987. This Act limited any future adoptions of the form to firms in natural resource industries (such as oil and gas or timber) or to companies in industries that generate passive income, such as royalties or rentals. But the MLP form was generally available for the period from 1981 through 1987; yet only about 150 firms chose to adopt it. One possible reason for the small sample of MLPs is that the structure has costs that more than offset the benefits for many firms. Since the discretion of managers is often greatly limited in an MLP, the form is ill suited for businesses that require a great deal of managerial flexibility. In addition, tax considerations of the MLP form favor (and in many cases the partnership agreement requires) the distribution of large amounts of cash to investors. If the firm does not generate large amounts of cash or has the need to reinvest cash to fund favorable projects, the MLP's tax characteristics will be unfavorable (see Collins and Bey, 1986). Further, as Guenther (1992) observes, the tax reporting requirements for MLPs are cumbersome.

³ See Jensen (1986, 1989), for a discussion of free cash flow in mature industries.

⁴ Moore, Christensen, and Roenfeldt (1989) found an increase in value of about 5% upon the announcement of the conversion of a corporation to an MLP. The authors suggest that this increase is due in part to the potential for reduced capital expenditures and increased cash distributions to investors.

In addition, adopting the MLP structure is not the only choice for firms with high free cash flows. Other organizational restructurings, such as LBOs or LRs, reduce managerial discretion and cut free cash flow. Similarly, corporations could alter internal contracting, such as managerial compensation, to be more in line with shareholder interests. The MLP is a radical organization change compared to most previously studied organizational or contractual solutions to agency and tax problems. Corporations that become MLPs are thus an interesting data source for studying and comparing the impact of organizational form changes.

Servicemaster MLP is one example of a firm that chose to become an MLP. Servicemaster is in the management services industry, mainly providing maintenance and janitorial services. Servicemaster had been in operation as a corporation for about 26 years prior to its conversion to MLP status on December 31, 1986. Servicemaster is one of the larger firms in its industry; in 1986, its sales of \$1.1 billion were about five times the industry median. Sales growth had been slowing over the period prior to conversion, and for the year prior to conversion (1985–1986), Servicemaster's sales had grown approximately 10%. Servicemaster had been highly profitable for a number of years, especially so in the period of time immediately prior to the conversion. In 1986, its return on assets (9.6%) was about 30% higher than the industry median.

Servicemaster had paid dividends for 26 consecutive years prior to the conversion. Over the last three years prior to conversion, its annual dividend yield averaged over 4%, compared to an industry average of just over 3%. In its 1989 annual report to shareholders, Servicemaster's General Partner noted that the cash payments to investors had significantly increased in the three years of operations as an MLP. The average annual yield for the three-year period exceeded 10%. The partnership had paid out just over \$160M to shareholders in three years, compared to a total of just over \$310M paid to shareholders over the 26 years of corporate operations.

Generalizing from the example of Servicemaster, the MLP organizational structure appears well suited for firms that have begun to generate large amounts of free cash flow but have few favorable investment opportunities. As the sales environment becomes more mature, growth for these firms slows or even declines. In this environment, altering the firm's structure becomes desirable. As Jensen (1989) argues, the corporate form represents a poor match for these kinds of firms. It penalizes cash distributions and favors reinvestment. The MLP, on the other hand, offers a better match by permitting tax-advantaged cash distributions. It is thus expected that the MLP would be most attractive for firms in mature industries that generate large amounts of free cash flow.

To study the attributes of MLP firms, this paper compares the operating performance and accounting characteristics of a set of MLPs with a matched (by industry and size) set of corporations. The MLP sample itself illustrates the types of industries that fit the MLP form. By focusing on the differences in the MLP and corporate samples, the findings highlight the kinds of firms within those industries

that convert. Because MLPs favor cash distributions and limit managerial discretion, it is expected that firms within specific industries that choose the MLP form will be highly profitable and focused, relative to their corporate peers.

The subsample of MLPs that were once corporations is then examined to look for changes in operating characteristics after the change in organizational form. Upon changeover, MLPs should cut capital spending in recognition of operating restrictions and increase cash distributions to take advantage of tax benefits. The paper also examines the characteristics of firms that change back from MLP to corporate status. In returning to corporate form, firms should reverse course by increasing capital spending and cutting back cash payments to investors.

This paper proceeds as follows: Section 1 of the paper describes the MLP and matched corporation samples and provides some descriptive statistics. Section 2 compares the performance of the MLP and matched corporation samples. Section 3 examines the subsample of MLPs that were once corporations and the subsample of MLPs that change back to corporate form. Section 4 summarizes the findings of the earlier sections and presents conclusions.

1. Sample Selection and Data

The initial sample consists of 147 MLPs that were publicly traded anytime from 1981 to 1990. These MLPs were located by searching various sources including *Companies Required to File Annual Reports with the Securities and Exchange Commission*, *Standard and Poor's Corporation Records*, *Compustat* annual company files, and *Investment Dealer's Digest*. Operational data is available for 116 of these 147 MLPs from *Compustat*, *Moody's Manuals*, *Standard and Poor's Corporation Records*, and company reports such as 10K's. Insider ownership data is obtained from *Spectrum 6*.

The final sample contains these 116 MLPs. Panel A of Table II provides a breakdown of the sample by Standard Industrial Classification (SIC) code. This table shows that MLPs cover a broad spectrum of industries. The heaviest concentration of firms in the sample are those in the oil and gas developers (27 firms), real estate operators, lessors, and builders (18 firms), real estate and miscellaneous investing institutions (11 firms), general contractors (7 firms), hotels and motels (6 firms), pipelines (4 firms), and cable and other pay television operators (4 firms). Based on market value computed at the end of the first year that the MLP is listed on an exchange, the average market value of the group is about \$220 million and the median market value is approximately \$81 million. Sun Energy Partners is the largest company in the sample with a market value of just over \$5 billion. New England Realty Associates is the smallest firm in the group, with a market value of \$1.35 million.

Panel B of Table II provides a breakdown of the MLP sample by year of formation. This paper examines MLPs that come into existence over a ten-year

Table II. Distribution of MLP sample

Panel A:
Frequency distributions by two-digit SIC code for 116 MLPs that were publicly traded from 1981 through 1990.

SIC	Industry	Number of MLPs	Total (%)
01	Field crops	1	0.8
08	Forestry	2	1.7
13	Crude petroleum	27	23.3
15	Building contractors	7	6.0
24	Lumber & wood products	1	0.8
28	Chemicals, plastics	2	1.7
29	Petroleum refining	3	2.6
35	Office & computer equipment	1	0.8
37	Transportation equipment	1	0.8
44	Water transportation	1	0.8
46	Pipelines	4	3.4
48	Cable & pay TV	4	3.4
49	Natural gas trans.	2	1.7
50	Wholesale durables	2	1.7
51	Wholesale petroleum	1	0.8
54	Retail food stores	1	0.8
55	Automotive stations	1	0.8
58	Eating & drinking	3	2.6
59	Retail miscellaneous	1	0.8
61	Mortgage bankers	2	1.7
62	Brokers/Invest. advisors	3	2.6
64	Finance	1	0.8
65	Real estate	18	15.5
67	Investing institutions	11	9.5
70	Hotels, motels	6	5.2
73	Leasing	2	1.7
78	Motion picture productions	1	0.8
79	Amusement & recreation	3	2.6
80	Skilled nursing care	1	0.8
83	Retirement centers	1	0.8
87	Management services	2	1.7
	Total	116	100.0

period. But the majority of MLPs start operations in either 1986 or 1987.⁵ This pattern reflects firms' desires to adopt the form after favorable tax legislation (Tax

⁵ Clustered data can cause some concerns about serial correlation and misspecified standard errors. To mitigate this problem, non-parametric statistics are used in the empirical tests.

Table II. Continued.

Panel B: Frequency distribution based on year of MLP formation.		
Year of formation	Number of MLPs	Total (%)
1981	1	0.8
1982	3	2.6
1983	3	2.6
1984	6	5.2
1985	8	6.9
1986	38	32.7
1987	36	31.0
1988	13	11.2
1989	4	3.5
1990	4	3.5

Reform Act of 1986) and prior to the onset of restrictive changes in the tax code (the Revenue Act of 1987). The distribution shows that MLP formation slows after 1987, but does not stop. About 21 MLPs in the sample commence operations in the 1988–1990 time frame.⁶

MLPs can come into existence in several ways. Some MLPs do not have a prior operating history as a corporation, but begin business as a partnership. One process, known as a roll-up, creates an MLP from the combination of several non-public partnerships. Other MLPs commence operations in partnership form and make an initial public offering of partnership units.⁷ The remaining MLPs evolve from the corporate form in some fashion. The simplest way is the direct conversion of a corporation into an MLP. In this transaction shareholders in the corporation receive a specified number of equity units in the MLP in exchange for each share of common stock. Other MLPs come about from the sale of a defined set of assets, such as a division of operations, by a conglomerate corporation. These transactions are similar to the equity carve-outs studied by Schipper and Smith (1986). Units of the MLP are sold directly to the public with the parent corporation receiving most of the proceeds. In these transactions, it is not unusual for the parent to maintain a significant share of ownership in the newly-formed MLP. MLPs also come into existence from the initial public offering of units representing interests in assets that had previously comprised a non-public corporation (called an equity ‘roll out’). Finally, MLPs can be ‘spun off’ from corporations in a process similar to that studied by Hite and Owers (1983) and Cusatis, Miles and Woolridge (1993). In these transactions, the direct ownership of a subset of corporate assets is transferred

⁶ These firms are in natural resource or passive income industries and receive partnership tax treatment under the 1987 Act.

⁷ These MLP offerings are studied by Muscarella (1988).

to shareholders via the receipt of a specified number of equity ownership units in the MLP for each share of stock in the corporation. Michaely and Shaw (1995) compare the performance of MLPs that are created from equity carve outs and spin-offs.

To examine MLPs that have a prior operating history as a corporation, the paper focuses on the equity carve-out, direct conversion, roll-out, and spin-off categories. Out of a possible 67 firms in these groups, both corporate and MLP data are available for 52 companies. Comparisons of this sample of 52 MLPs with the entire sample of 116 MLPs reveals two interesting differences. First, this sample does not have as high a concentration of oil companies (13%) as the entire sample (23%). Second, the subsample is much larger in terms of market value than the entire sample. The median market value of equity for these 52 firms is almost twice that of the 116 MLPs, \$145M versus \$80M. Lastly, the paper also investigates the 20 MLPs that have changed back to corporate form. Data from *Compustat* and company reports is available for 16 of these 20 firms.

2. MLP versus Matched Corporation Operating Performance

2.1. MATCHING PROCEDURE AND METHODOLOGY

Matching an MLP to a similar-size corporation in the same industry permits an examination of the relative operating characteristics of firms within the industry that become MLPs versus those who don't. Each MLP in the sample is matched with a corporation in the same (or most similar) industry and closest market value. Market value is computed by multiplying year-end closing price by the number of shares outstanding. Using *Compustat*, matched firms are chosen according to the following priority: (1) Four-digit SIC match and within 30% of the market value of the MLP to be matched, (2) Three-digit SIC match and within 30% of the market value of the corresponding MLP, (3) Two-digit SIC match and within 30% of MLP market value, and (4) The closest possible match in terms of SIC followed by the closest possible match in market value.⁸ No matched firm is used more than once. If a matched corporations data becomes unavailable, the next best match is then used. The mean (median) market value for the MLP sample is \$220 million (\$81 million) while the mean (median) market value for the matched corporate firms is \$204 million (\$75 million).

Once the MLP and the matched corporation samples are formed, various accounting data are obtained for each firm from *Compustat* or from company reports. Three years of data are examined for each accounting variable. Year one is defined as the first complete year of operations after the MLP is listed. The results

⁸ Over 70% of the sample are a type one match; that is, they follow rule one above. Type four matches represent about 12% of the sample. Half of these are one-digit SIC matches and the other half are two-digit or higher SIC matches with market value differences exceeding 30%. The results are not sensitive to excluding these type four matches from the analysis. This method is very similar to that used by Cusatis, Miles, and Woolridge (1993).

report the median sample values for the MLP and matched corporation samples, the number of individual differences that are positive (that is, the MLP value is greater than the matched corporation value) and the two-tailed p -value for the Wilcoxon test statistic for difference in distribution.

2.2. PERFORMANCE COMPARISONS

The MLP form rewards cash distributions and restricts managerial flexibility. As such, MLPs should be most prevalent in low-growth industries. Panel A of Table II shows that MLPs exist in a number of industries. Notably absent from the sample, however, are firms representing industries normally classified as high growth (such as software or pharmaceuticals). The sample is dominated by firms in mature industries. This assertion is supported by sales growth figures. During their first four years of operations, the median growth in sales for the MLP sample is 1.3% per year. The corresponding value for the matched corporation sample is 2.2% per year. For comparison purposes, the median growth in sales per year for the firms in the Standard and Poor's 500 over the 1986 to 1990 time frame is 8.8% per year. Twenty-six percent of the firms in the MLP sample are in the oil and gas industry (SIC code 13 and 29). Jensen (1986) uses the oil and gas business of the 1980s as a specific example of an industry where firms generated high cash flows but had few favorable investment opportunities. Jensen (1986) observes that most of the oil firms in this era that attempted to diversify into other higher-growth industries failed miserably. With diversification efforts largely unsuccessful and oil and gas industry growth slowing, management of oil and gas firms turned to several restructuring activities, including the adoption of the MLP form.⁹ In sum, the results in Table II, Panel A are supportive of the argument that MLPs are popular in low-growth industries.

Within low-growth industries, MLPs should be favored by firms with relatively high profitability/cash flows and focused operations since the MLP's features reward firms with these attributes. Table III presents some operating performance comparisons for the samples of MLPs and matched corporations. Gross margins in the MLP sample are larger than those in the matched corporations in the first three years of comparisons. Two of the three comparisons are statistically different at the 10% level. Operating margins for MLPs are significantly higher than those of their corporate counterparts at the 5% level in all three years.¹⁰ Higher MLP operating margins suggest that MLPs have the advantage of lower operating costs compared to their corporate counterparts. This finding is consistent with prior studies by Coase (1937) and Schipper and Smith (1986) suggesting that improved asset management

⁹ Why management would 'choose' to adopt the MLP form and not an alternative method of solving the free cash flow problem is an unresolved issue. We find no evidence that management changeover accompanied or preceded the change in form.

¹⁰ This result is not biased by tax treatment. Comparisons of operating margins are made before tax.

arises from a decreased diversity of tasks required of management. To compare the degree of focus between the samples, the number of business segments reported by each MLP and matching corporation firm is used as an empirical proxy. For the 61 MLPs with data available from *Compustat* the average number of business segments reported is 1.16. For the 61 matched corporations, the corresponding average is 1.90. Only 8% (5 of 61) of the MLPs report operations in more than one business segment, while 46% (28 of 61) of the matched corporations report operations in more than one business segment.¹¹ These results demonstrate the narrower focus of the MLPs relative to their corporate counterparts (see Comment and Jarrell, 1995). But for MLPs changing from the corporate form, the required diversity of tasks may not decrease dramatically in the short term. This finding suggests that these firms were already more focused in their operations as corporations. Choosing the MLP form does not overly restrict managerial behavior, because the firms were focused in their operations prior to entering the form. Adopting the MLP form, however, does not benefit all firms, only those that intend to remain narrowly focused in their operations. When firms make this commitment, operational efficiencies should continue. For firms in these industries with growth or diversification objectives, the MLP form is not advantageous.

MLPs also have significantly higher ratios of cash flow (earnings before taxes plus depreciation) to sales in two of the three years studied. These findings may reflect the larger up front depreciation expenses available to MLPs that are commencing operations.¹² These findings also suggest that MLPs have large amounts of cash flow available to distribute to investors. In sum, the profitability results indicate that MLPs tend to dominate matched corporations in terms of operating performance and cash flow ratios.¹³

MLPs should also dominate matched corporations in terms of cash distribution levels. At the same time, MLPs should have lower levels of capital expenditures

¹¹ This result is not surprising given the tax regulations in the Revenue Act of 1987. That Act required MLPs to have only one line of business taxable as a partnership.

¹² Ratios of operating income to total assets are also significantly higher in MLPs, which is generally consistent with the profit margin results. The conclusion that MLPs have higher profitability is not sensitive to whether income is standardized by sales or by assets. Upon formation of MLPs, asset values may be 'stepped up' for accounting purposes. Any bias generated would thus make the MLP ratios deflated by assets appear lower. In general, assets are transferred to the MLP at their historical accounting basis. But some revaluation is apparent from statements made in the prospectus accompanying either the conversion or the sale of MLP units. In the Intelligent Systems MLP conversion, for example, almost two million dollars in taxes resulting from the recapture of previously claimed depreciation is payable upon conversion. Recaptured depreciation results in a higher book value for the transferred assets in the newly-formed MLP. This higher asset value deflates profits more severely and makes them look low relative to the corporate values.

¹³ Some evidence of a downward trend in operating performance is apparent in both samples. This may be due to problems in the construction, real estate, and oil industries in the late 1980s. These groups together comprise about 40% of the sample. To examine the impact of these groups, both the oil and gas and the real estate subsamples were examined separately. These subsamples revealed similar profitability comparisons to the sample as a whole. In addition, the type one matches were examined independently as a check on the matching methodology. The results are consistent with the findings in Table III.

Table III. Financial and operating performance of MLPs and matched corporations

This table presents three years of median financial ratios for the MLP and matched corporation samples. The percentage of positive values indicates what percentage of the individual comparisons resulted in the MLP having a higher value. The *p*-value given is for the two-tailed Wilcoxon test statistic for difference in distribution. The sample collection period ends in 1992, causing the loss of some data (seven firms) in the third-year comparisons.

Operating ratios	Year of operation	MLPs	Matched firms	Sample size	Percent positive	<i>p</i> -value
Gross Income/Sales	1	0.46	0.38	108	54%	0.08
	2	0.47	0.32	102	55%	0.14
	3	0.43	0.33	90	62%	0.09
Operating Income/Sales	1	0.38	0.21	112	64%	0.00
	2	0.38	0.18	106	63%	0.00
	3	0.35	0.15	93	69%	0.00
Cash Flow/Sales ^a	1	0.23	0.12	111	60%	0.01
	2	0.22	0.12	105	63%	0.13
	3	0.16	0.09	93	61%	0.04
Dividend Yield ^b	1	0.12	0.00	108	90%	0.00
	2	0.12	0.00	102	86%	0.00
	3	0.11	0.00	93	77%	0.00
Percent Cash Distributed ^c	1	81.9%	0.0%	96	83%	0.00
	2	73.2%	0.0%	95	79%	0.00
	3	67.5%	0.0%	86	75%	0.00
Capital Expenditures/Sales	1	0.08	0.06	109	54%	0.39
	2	0.06	0.06	103	47%	0.90
	3	0.05	0.06	90	52%	0.71
Debt Ratio ^d	1	0.24	0.25	113	46%	0.61
	2	0.24	0.27	106	48%	0.40
	3	0.27	0.26	95	56%	0.46

^a This is earnings before taxes plus depreciation (cash flow) divided by sales.

^b The annual dividend divided by the high price for the year plus the low price for the year divided by two.

^c This is the cash value of the total dividends for the year divided by earnings before taxes plus depreciation (cash flow). Note that an observation is deleted if cash flow is negative.

^d The ratio of long-term debt to total assets.

and less debt.¹⁴ Table III compares the distribution policy, capital expenditures to sales ratios, and debt levels of the MLP and matched corporation samples. The

¹⁴ Since cash distributions are expected to be high, the additional managerial bonding that debt payments provide should not be necessary.

Table IV. Insider ownership of MLPs and matched corporations

This table presents four years of median percentages of insider ownership for the MLP and the matched corporation samples. Year zero is defined as the year that the MLP is listed on an exchange. The percentage of positive values indicates what percentage of the individual comparisons resulted in the MLP having a higher value. The *p*-value given is for the two-tailed Wilcoxon test statistic.

Operating ratios	Year of operation ^a	Matched MLPs	Matched firms	Sample size	Percent positive	<i>p</i> -value
Insider ownership ^b	0	23.3%	32.0%	53	47%	0.75
	1	19.4%	27.0%	66	44%	0.76
	2	17.7%	29.2%	74	46%	0.75
	3	24.0%	22.0%	60	52%	0.84

^a Insider ownership levels are measured at the close of the year indicated. Year zero is the year that the MLP is listed on an exchange.

^b Defined as stock ownership by directors, managers, and those holding more than 10% of the outstanding shares by the total number of shares outstanding. Source: *Spectrum* 6.

results show that MLP debt levels and capital expenditures to sales ratios are very similar to those of the matched corporation sample. Lower capital expenditure ratios for MLPs relative to corporations had been expected because of the disincentive to reinvest under the MLP form and the restrictions placed on management discretion. Consistent with tax incentives to distribute cash, however, the MLPs dominate the matched corporation sample in terms of cash distributions. This dominance is extreme, with MLPs median 'dividend yield' about 11% compared to 0% for the matched corporations. MLPs are also distributing a large percentage (over 70%, on average) of their available cash, especially in the years immediately following changeover.

The performance comparisons reveal interesting differences in the MLP and matched firm samples. The superior operating performance in the MLPs may result from the lower diversity of tasks required of managers, or it could be because of concentration of equity claims, such as those found by Muscarella and Vetsuypens (1990) in LBOs. Table IV compares the levels of insider ownership between the MLP and matched corporation samples. The results show that there are no significant differences in insider ownership between the samples over the four years studied and would rule out concentration of equity ownership as a source of the superior operating performance in MLPs.

In sum, MLPs tend to be observed in low-growth industries. The results of the matched corporation study indicate that MLPs are highly focused and profitable firms compared to their industry peers. Their capital expenditure and debt policies are similar to those of matched corporations, as are their equity ownership structures. But MLPs distribute far more cash to their equityholders.

3. Operating Performance Around Conversions to and from MLP Form

3.1. METHODOLOGY

This section first studies the subsample of 52 MLPs that change over from corporate form. The methodology compares the performance and characteristics of the firms while they were corporations to the same firms' later performance as MLPs. Year zero is defined as the year that the change from the corporate to the MLP form takes place. The methodology compares the operating performance in the year prior to year zero with that of the first year after year zero. Comparisons are also made between the year prior with the second year after, and lastly, for the year prior with the third year of MLP operations. This methodology is similar to that used by Lehn, Netter, and Poulsen (1990) and Mikkelsen and Partch (1992) in their studies of LBOs and dual-class recapitalizations. As in these studies, year zero is eliminated so as to avoid biases and one-time adjustments associated with the actual reorganization.¹⁵

For a public corporation that directly converts to an MLP, data on the firm's operational performance before it becomes an MLP is available from the prospectus sent to investors to solicit approval for conversion of the corporation. In the case of new offerings of MLP equity interests that are equity carve-outs of existing corporations, the corporate division's operating history is obtained either from the parent corporation's 10K's, the initial offering prospectus for the MLP, or from the NYSE listing document if the MLP is to begin trading on that exchange. If the MLP is formed via the equity roll-out process, two sources of data are available for the corporation's operations. They are the MLP offering prospectus and the NYSE listing document. Operating performance data for the MLPs after listing is obtained directly from company reports like 10K's or from *Compustat*. The results report the median percentage change between the operating parameter of interest in the year prior to the reorganization and that parameter in the indicated year after the change. Significance is measured by Wilcoxon test statistics.

MLPs that change back to corporate form are also examined. Most of these conversions occur from four to seven years after the MLP was initially formed. For the sample of these firms, the median operating performance for the last full year of MLP operations is compared to that for the first full year of corporate operations.

¹⁵ Like Lehn, Netter, and Poulsen (1990), changes in operational results are examined in both raw and industry-adjusted terms. The method of computing an industry adjustment closely parallels that used by Mikkelsen and Partch (1992). The industry adjustment is calculated by computing the median operational parameter of interest from all *Compustat* listed companies with the same two-digit SIC as the MLP and with a market value within 50% of the value of the MLP. Three- and four-digit SIC industry adjustments were also made. For each year, the industry-adjusted value is then the difference between the operating parameter of the MLP and this median operating parameter. Industry adjustment may be of interest here since over 30% of the MLPs in this sample are from industries like oil, building, and real estate that suffered severe downturns in the late 1980s, the period of study. Since the patterns of significance among the industry-adjusted performances levels parallels the raw performance results for all the operating parameters examined, only the raw performance results are reported.

3.2. CORPORATE CONVERSION TO MLP FORM

The 52 MLPs studied in this section change from corporate form via either equity carve out, equity roll out, spin-off, or direct conversion.¹⁶ If the MLP conversion changed the nature of the firm's operations then changes in operating performance should be observable. Table V presents the results of profitability comparisons between the last full year of corporate operation and the first full three years of operation as an MLP. Median gross margins for the sample fall after these firms become MLPs in two comparison periods. None of the changes are statistically significant, however. In addition, no significant changes in operating margin are seen after the firms become MLPs. Similar to the first two operational parameters, no significant changes are found in the computation of ratios of cash flow to sales.

These results are consistent with the argument that these firms do not dramatically change the nature of their operations once they become MLPs. These firms were highly profitable prior to conversion. They undertake the change to MLP form during a period of exceptionally good performance. Examination of the industry-adjusted performance of these firms in their last year of corporate operations confirms this suspicion. In that year, these 52 firms dramatically outperform their industry peers. For example, over 78% of these 52 firms have operating margins higher than the industry median during their last full year of operation as a corporation. As an MLP, they can take advantage of tax incentives to distribute cash they generate. They can also consolidate control of their profitable enterprise and insulate management from possible takeover.¹⁷ Both these arguments are in line with the conclusions of Lehn, Netter, and Poulsen (1990) based on their analyses of dual-class recapitalizations and LBOs. These authors trace changes in organizational form to underlying attributes in the firm. Here, highly profitable corporations in mature industries are undergoing changes in form that allow them to disgorge cash without penalty and strengthen control of the firm.

For MLPs in this sample conducting IPOs, timing the sale of equity units to coincide with good performance makes the sale more attractive to the public and more lucrative to the parent firm. As these offerings often come during good times, it is not unreasonable to expect some reduced profitability afterwards. Jain and Kini (1994) have documented the decline in operating performance of initial public offerings (IPOs). This phenomenon could explain the underperformance of the equity carve-out and equity roll-out firms.¹⁸ Despite the IPO phenomenon, it should again be noted that most operating performance measures for the MLPs are insignificantly different from those in their last year of corporate operations.

¹⁶ Direct conversion is the most straightforward of these methods. To examine whether the method of MLP creation influences the findings, the results for the direct conversion subsample of 12 are examined separately. The findings are very similar to those for the sample of 52, so the direct conversion subsample results are not reported.

¹⁷ Most MLPs have supermajority removal provisions for the general partner.

¹⁸ This phenomenon would not offer any compelling rationale for the results of the study of the 12 direct conversion firms, whose performance patterns were very similar to the sample at large.

Table V. Operating performance of firms before and after adoption of the MLP form

This table presents operating performance of MLPs measured by median percentage change in measures from the last complete year of operations of the firm as a corporation (Year -1) to the indicated year of operations as an MLP. Percent positive indicates the percentage of observations for which the MLP value was larger. The significance of these changes is measured by the two-tailed Wilcoxon test statistic. The sample collection period ends in 1992, causing the loss of some data (seven firms) in the third-year comparisons.

Operating ratios	Years of operation compared	Median percent change	Sample size	Percent positive	<i>p</i> -value
Gross Income/Sales	-1 to +1	-2.1%	47	38%	0.12
	-1 to +2	2.4%	45	51%	0.78
	-1 to +3	-10.1%	38	34%	0.10
Operating Income/Sales	-1 to +1	-2.9%	52	44%	0.51
	-1 to +2	-5.7%	49	45%	0.94
	-1 to +3	-4.4%	42	45%	0.60
Cash flow/Sales	-1 to +1	-7.1%	52	40%	0.12
	-1 to +2	-7.8%	49	43%	0.23
	-1 to +3	-9.0%	43	40%	0.35
Capital Expenditures/Sales	-1 to +1	-36.5%	48	35%	0.04
	-1 to +2	-28.2%	45	36%	0.12
	-1 to +3	-25.7%	39	28%	0.04
Debt Ratio	-1 to +1	-4.7%	42	40%	0.17
	-1 to +2	14.8%	39	56%	0.08
	-1 to +3	27.5%	32	63%	0.04

As the last year of corporate operations for these MLPs was a highly profitable one relative to industry performance, it is likely that these MLPs are continuing to outperform their corporate peers. This inference is supported by the results of the previous section showing that MLPs dominate matched corporations in terms of operating performance.

Once becoming MLPs, firms should cut capital expenditures since partnership tax treatment discourages reinvestment. Debt ratios should stay the same or fall since the additional bonding debt payments provide does not appear necessary if cash distributions are high. Table V examines the changes in the capital expenditure to sales ratios and debt levels after the firms' adoption of the MLP form. There is statistically significant evidence of reduced capital expenditures after the changeover, with median drops of around 30%. Reduced capital expenditures are consistent with incentives in the MLP form to disburse cash and not reinvest it.

Table VI. Inside ownership and dividend yield of firms before and after the direct conversion to MLP form

This table shows the mean and median inside ownership and dividend yield for the last full year of corporate operations and the first full year of operations as an MLP for firms that directly converted to MLP form. The percentage of positive values indicates what percentage of the individual comparisons resulted in the MLP having a higher value.

Operating ratios	Corporations		MLPs		Sample size	Percent positive
	Mean	Median	Mean	Median		
Percentage inside ownership ^a	0.419	0.403	0.347	0.353	8	50%
Dividend yield ^b	0.014	0.012	0.102	0.112	10	90%

^a Insider are defined as officers, directors, general partners, and individuals holding more than 10% of the outstanding shares. Source: *Spectrum 6*.

^b This is the annual dividend divided by the average stock price for the year.

Table V also reveals that firms adopting the MLP form increase their use of debt in the three-year window. Unlike LBOs or LRs, this increase in debt for MLPs does not occur immediately upon the change in form; it is gradual. As Easterbrook (1984) discusses, however, debt payments and cash distributions are substitute monitoring mechanisms for management. Contrary to initial expectations, there is evidence that both play a part in curbing management discretion in MLPs.

Table VI summarizes the results of a study of insider stock ownership patterns for corporations that directly convert to MLPs. Eight of the 12 conversion firms in the sample have insider ownership data available for the firm's last full year of corporate operations and the firm's first full year as an MLP. As Table VI shows, insider ownership drops slightly during the period surrounding the conversion from corporate to MLP form. The percentage of shares owned by insiders increases in exactly half of the cases after the firm becomes an MLP. Median insider ownership changes from 40.3% to 35.3% for the sample. These findings show that, unlike the LBO, dramatic changes in ownership structure do not accompany the conversion from corporate to MLP form.

Table VI also shows that distributions rise markedly after the adoption of MLP form to take advantage of the favorable tax treatment. Median dividend yields are 1.2% in the year prior to changeover and 11.2% in the year after. These results are consistent with those derived from the matched corporation study. The MLP structure favors the distribution of cash and not the reinvestment of it. When a firm becomes an MLP, it is matching its desire and ability to distribute cash with a favorable organizational form.

3.3. MLP CONVERSIONS TO CORPORATIONS

Table VII summarizes the performance characteristics of MLPs that convert back to the corporate form. The analysis includes all firms that change back through the end of 1994. For the 20 MLP firms identified as returning to corporate status, data is available for 16 firms. The performance of their last full year of MLP operations is compared to their first full year of corporate operations. The differences are striking in their reversal of many of the MLP trends. After becoming corporations, capital expenditures increase markedly. The median percentage increase in capital expenditures to sales ratios is over 50%. Distributions of cash to investors fall dramatically, with the median percentage drop in excess of 75%. The median dividend yield in the last full year of MLP operations for the 16 firms is approximately 6%; in the first full year of corporate operations, it is zero. Both the cash distribution and capital expenditure policies are the opposite of earlier corporate to MLP changes. These changes appear to reflect a desire to match firm attributes with a form that better supports growth through capital expenditures.

Stated reasons for conversion from MLP to corporate form parallel the operating evidence. Examples are contained in the proxy statements urging the unitholders to vote for a conversion to corporate form. Six of the seven proxies we were able to obtain state that the conversions are necessary to take advantage of investment opportunities and to provide greater access to capital markets. Five of the seven mention the desire to reduce the cost of MLP tax record keeping. Five firms also believe that the corporate form will help them expand their investor base. Tax-free institutions are reluctant to invest in MLPs since it subjects them to unrelated business income tax. Two firms suggest that the conversion to corporate form will increase their ability to engage in acquisitions.

Studying this 'round trip' from corporate to MLP and back to corporate status illustrates how firms seek to match their attributes with desirable organizational features. As MLPs, firms cut capital expenditures and increase distributions. As growth objectives reemerge, however, the MLP form's costs begin to outweigh its benefits. As corporations, these firms have increased flexibility and improved access to capital markets. Institutional investors may show renewed interest in owning their shares, and they may receive more analyst coverage. Return to corporate status thus better serves the needs of firms interested in expansion.

4. Summary and Conclusions

Altering a firm's organizational structure to better match its attributes can reduce agency costs and create value (Fama and Jensen, 1983a, b). This paper studies the attributes of firms that drastically alter their organizational structure by adopting the MLP form. Unlike the corporation, the MLP seems well suited for firms that have begun to generate large amounts of free cash flow but exist in low-growth industries. The results show that the sample of 116 MLPs is dominated by firms

Table VII. Operating performance after MLPs change back to corporate form

This table shows the median percentage changes in the operating ratios for the last complete year of operations of the firm as an MLP (Year -1) to the first full year of operations as a corporation. Percent positive indicates the percentage of comparisons for which the corporate value is greater. The significance of these changes is measured by the two-tailed Wilcoxon test statistic.

Operating ratios	Years of operation compared	Median percent change	Sample size	Percent positive	<i>p</i> -value
Gross Income/Sales	-1 to +1	-4.0%	16	38%	0.27
Operating Income/Sales	-1 to +1	-5.5%	16	44%	0.80
Cash flow/Sales ¹	-1 to +1	35.5%	16	56%	0.17
Dividend Yield	-1 to +1	-96.5%	16	0%	0.00
Percent Cash Distribution	-1 to +1	-78.0%	16	0%	0.01
Capital Expenditures/Sales	-1 to +1	51.5%	16	69%	0.04
Debt Ratio	-1 to +1	-4.7%	16	40%	0.17

in mature industries, as measured by sales growth. MLPs are found to be highly profitable relative to their industry counterparts. The evidence demonstrates that MLPs have greater operating and cash flow margins than matched corporations. MLPs also distribute far more cash than their corporate peers.

It is interesting to contrast firms that convert to MLPs with firms that undergo other forms of corporate restructurings such as leveraged buyouts (LBOs) and leveraged recapitalizations (LRs). Table VIII summarizes and compares the findings of the LBO and LR studies with the findings in this paper. All three organizational changes lead to dramatic declines in capital expenditures. Tighter monitoring and the payout of excess cash implied by the repayment burden of higher debt levels lead directly to the substantial efficiency gains observed in LBOs and LRs. Unlike

Table VIII. Comparison of findings for LBO, LR and MLP organizational structure change studies

This table summarizes and compares the findings of studies that examine the changes accompanying a Leveraged Buyout (LBO) and Leveraged Recapitalization (LR) with those resulting from a changeover to a Master Limited Partnership (MLP).

Organizational structure change	Publicly traded equity claims	Change in stock price at announcement	Changes in operating performance	Changes in management monitoring	Changes in management ownership	Changes in capital expenditures	Changes in debt usage	Method of cash distribution
LBO	No	Dramatic increase	Improvement	More	Dramatic increase	Dramatic decrease	Dramatic increase	Repurchase all public common stock now (high debt repayment burden in future)
LR	Yes	Dramatic increase	Improvement	None	Increase	Dramatic decrease	Dramatic increase	Major common stock repurchase (high debt repayment burden in future)
MLP	Yes	Increase	None	Less	None	Dramatic decrease	Slight increase	Dramatic increase in cash dividend payments

LBOs and LRs, efficiency gains are not observed in MLPs in the period after they are formed. But MLP firms had been highly profitable as corporations prior to the changeover. For MLPs, the alteration in form provides the discipline managers need to avoid overinvestment and continue the excellent operating performance seen prior to the conversion. Dramatically higher payouts of cash in MLPs help to limit management discretion. The results also show that MLPs have increasing levels of debt, although the increases are not as dramatic as those observed in LBOs or LRs.

The evidence suggests that the increased ownership concentration seen in LBOs and LRs does not occur after MLP formation. LBOs result in a concentration of management ownership and/or increased monitoring by an LBO specialist. Denis and Denis (1993) find that LRs also result in increased insider ownership. No such change in insider ownership is found for MLPs, however. In fact, outside monitoring declines with MLPs since there is no longer a board of directors.

Instead, the evidence suggests that higher payouts of the firm's cash flows to partnership equityholders are mainly responsible for the continued excellent operating performance of MLPs relative to their corporate peers. Most MLP partnership agreements specify the required level of cash distributions and the level of cash payouts significantly rise after conversion to MLP form. Thus, the common theme among LBOs, LRs, and MLPs is the transfer of large amounts of cash to equity holders. The mechanism by which this payout is achieved distinguishes MLPs from LBOs and LRs. LBOs and LRs result in high cash payouts to the original owners when they relinquish their stock. The repayment burden of the increased debt load for LBOs and LRs restricts cash flow available for management discretion and leads to reduced investment in unprofitable projects. MLPs, on the other hand, initiate a sustained level of high cash distributions to equityholders. *Ceteris paribus* this high distribution payment reduces discretionary cash flow and increases value.

Only about 150 firms became MLPs during the window of eligibility. The MLP form was obviously not appropriate for all firms, only those with certain attributes and objectives. Even some firms that adopted MLP status reconsidered their decision in light of changing circumstances. The reconversion to corporate form is marked by dramatic cuts in cash payouts and increases in capital expenditures, reversing the earlier changes seen when firms became MLPs. The evidence suggests that, for MLPs returning to corporate form, the benefits of being an MLP are outweighed by the costs. This organizational change thus again illustrates the matching of firm attributes with desirable organizational features.

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