

MASTER LIMITED PARTNERSHIPS  
UNIQUE VEHICLE FOR  
INVESTOR VALUE CREATION

By

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Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
DOCTOR OF PHILOSOPHY  
December, 2021

MASTER LIMITED PARTNERSHIPS  
UNIQUE VEHICLE FOR  
INVESTOR VALUE CREATION

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## ACKNOWLEDGEMENTS

I would like to thank Dr. Simkins for her inspiration, encouragement, and support. I also thank the faculty members of the Executive Ph.D. program for sharing their experience and knowledge with me. Most importantly I thank my wife Martha for her support, sacrifice, and encouragement as I pursued this endeavor.

Name: DONALD ROBERT ROWLETT

Date of Degree: DECEMBER, 2021

Title of Study: MASTER LIMITED PARTNERSHIPS UNIQUE VEHICLE FOR INVESTOR  
VALUE CREATION

Major Field: DOCTOR OF PHILOSOPHY

Master Limited Partnerships (MLPs) are a unique vehicle within which to conduct business activities to achieve superior value creation for investors. Very little research has been published that examines how the unique MLP structure contributes to investor recognition of value creation measured by market returns. This dissertation examines three attributes unique to MLPs— income tax treatment, corporate governance advantages, and the regulatory environment in which they operate. I ask how markets value MLPs’ avoidance of double taxation to which traditional corporations are subject. This study also examines how markets react to the commitment of future cash flows to the MLPs’ structural discipline to return cash to investors. Lastly, my research looks at the impact of change to the regulatory regime that alters MLPs’ structural advantage over those of traditional corporations. My research uses two event studies to measure abnormal market returns on or around dates of events that changed the relative distinction of MLPs compared to other investment opportunities available to investors. My research investigates abnormal returns around the enactment of the Tax Cuts and Jobs Act of 2017 and finds that the reduction of income tax policy advantages was detrimental to MLP valuations. Corporate governance advantages of MLPs, measured by subjecting future cash flows to greater management discipline, are examined by analyzing abnormal market returns around the dates when material assets were transferred from a traditional corporate structure to an MLP. The MLPs generated significant abnormal returns as cash-generating assets were subjected to the discipline of the MLP structure. Finally, significant abnormal returns are observed on the date of a major change in the regulatory regime, specific to MLPs, was released. This dissertation improves our understanding of the value creation aspects that differentiate MLPs from traditional corporate business structures.

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## CHAPTER I

### INTRODUCTION

#### **Master Limited Partnerships**

Master Limited Partnerships (MLPs) have been in existence for almost 30 years. The number of businesses choosing to organize as MLPs continues to grow. The MLPs are unique. They are taxed differently than corporations. Most significantly, they are not subject to double taxation. However, they are traded on public stock exchanges much like a publicly-traded corporation.

Over the intervening years, tax laws have evolved. Major income tax legislation over the last 30 years includes the Economic Recovery Tax Act of 1981 (ERTA), Tax Reform Act of 1986, Omnibus Budget Reconciliation Act of 1987, and the Tax Cuts and Jobs Act of 2017. Each has changed the income tax landscape in which MLPs operate and effect how they compete for capital.

Raising capital on attractive terms is critical to the success of any business. While the mineral and natural resource extraction businesses, primarily oil and natural gas, rely on traditional debt and equity investors, it also utilizes other forms of capital formation. The MLP has been utilized since the early 1980s. They have been used throughout the oil and natural gas value chain upstream exploration and development, midstream pipeline and processing, and downstream refining. MLPs provide investors with attractive cash yields, the potential for

investment appreciation, and favorable income tax treatments. Sponsoring businesses can monetize developed assets, retain future upside potential, and maintain control of the business.

### MLP Organizational Structure

The continued success of the MLP structure depends on the continued regulatory treatment of the underlying business and ongoing acceptance of the structure by investors. The typical MLP organizational structure is shown below in Figure 1.

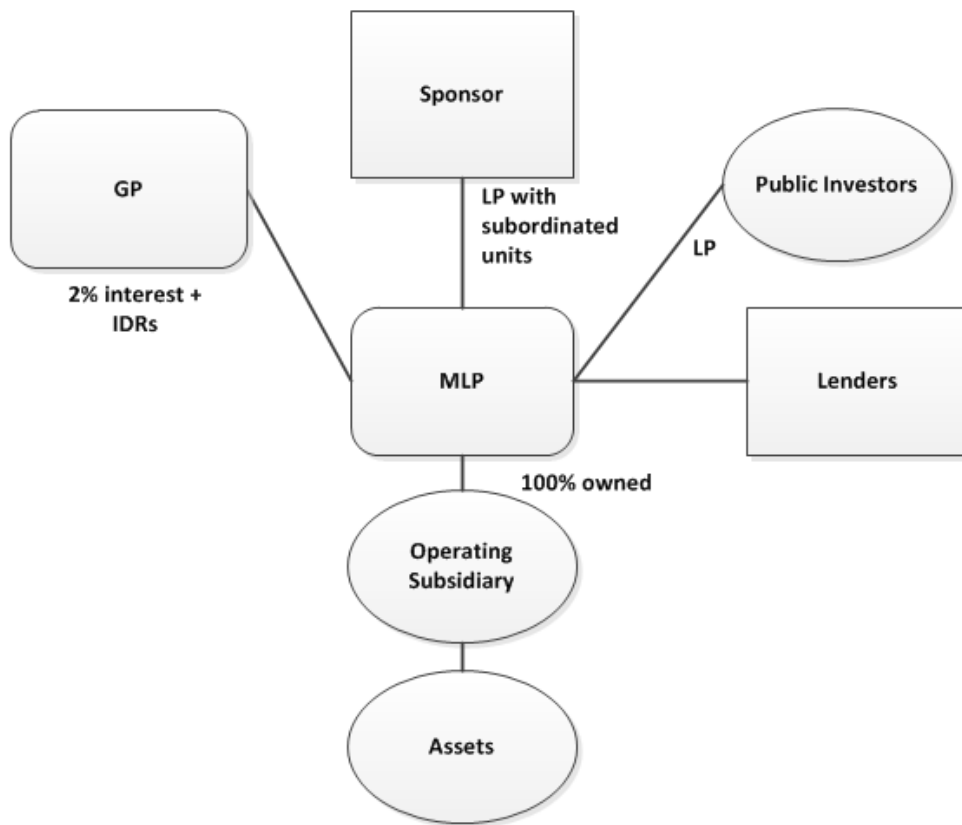


Figure 1. Typical MLP Organizational Structure.

The MLP structure faces threats on both fronts. Regulatory treatment of income tax expense as a component of regulated pipeline rates threatens cash flow generated by pipelines regulated by the Federal Energy Regulatory Commission (FERC). In Docket PL 17-1-000, the

FERC disallowed an income tax allowance for MLPs. Incentive Distribution Rights (IDRs) provided for in partnership agreements threaten to diminish investor yields and valuation of their investments primarily due to the resulting rise of the cost of capital.

The MLPs are business organizations designed to provide investors attractive returns as a result of business operations and favorable income tax treatment. The MLPs have a general partner (GP) and limited partners (LP). The GP is responsible for managing the partnership while the LPs provide capital in exchange for future cash distributions. The LPs have no role in the management of the partnership activities. The LPs' ownership is held as units, which are traded on public securities exchanges such as the New York Stock Exchange and NASDAQ. The units are traded like corporate stock shares.

The MLP structure is available to entities that derive at least 90% of their income from qualifying activities. These activities include exploration, development, mining or production, processing, refining, transportation, storage, and marketing of mineral or natural resources. This includes oil and natural gas.

### **Master Limited Partnership Agreements**

Organization documents establish the agreements between the GP and LPs that define how cash will be used by the business and distributed between them. Jensen and Meckling (1976) identified the upfront agreements between general partners and limited partners as an effective tool for addressing the inherent agency issue that arises from the manager/owner relationship. Most MLP agreements define "available cash flow" as:

1. Net income, plus
2. Non-cash reductions that were used to determine net income, such as depreciation, amortization, and deferred income taxes, less

3. Cash retained to provide for the capital investment necessary to maintain the current asset base and cash flow streams.

The general partner often receives an increasing percentage of cash flows as an incentive to raise quarterly distributions. These are generally referred to as incentive distribution rights.

In many corporate management structures, the general partner has the discretion not to distribute available cash flow for the proper exercise of the business, to provide for capital expenditures, for repayment of debts, and future distributions. The MLPs typically distribute between 80% and 100% (MLP Primer, 2017) or more of available cash flow, which means that MLPs' cash distributions exceed those of a similarly profitable corporation. Corporate distributions generally are a percentage of net income, whereas MLP distributions include a portion of depreciation and amortization.

Businesses that organize as MLPs typically enjoy stable cash flows, which allow for high cash distribution levels. Due to the high levels of cash distributions, MLPs generally fund capital investments to expand operations or to make acquisitions by issuing debt or by issuing new equity in the form of additional partnership units. Cash distributions to limited partners are important to the valuation of the MLP units. Variable-distribution MLPs are exceptions to the typical MLP.

### **Variable-Distribution MLPs**

Variable-distribution MLPs are usually refiners. Refineries are subject to crack spreads, which means their distributable cash flow depends on the spread between the price of crude oil inputs and the price of refined products such as gasoline and diesel fuel. Cash generation that relies on a crack spread is much more volatile than cash generated by a fee-based business.

Analysts have expressed concern that as MLPs evolve from stable, conservative upstream and midstream assets into new downstream entrants, greater risk may be assumed.

In 2012, we saw the growth of downstream MLPs. Refiners are separating the fuel marketing parts of retail gasoline stores from the convenience store operations. The general partner, as a C corporation, retains the C store operations. The parts of the value chain generating qualifying income are the fuel storage, pipeline, and wholesale terminal assets, which are dropped down to the MLP (Woodman, 2012). Figure 2 (see Appendix A) provides an example of a gasoline retail / C store MLP (Woodman, 2012, p. 74). This was the first MLP to operate in the fuel distribution part of midstream.

My research examines the history and development of the MLP structure, its use by the industry, and the impact on valuations of regulatory uncertainty and investor concern over increasing realization by sponsoring general partners of IDRs. A review of the literature is presented in the next chapter.

## CHAPTER II

### REVIEW OF LITERATURE

#### **Background on Master Limited Partnerships**

The MLP structure has been in existence for almost 40 years. The utilization of the structure as evidenced by the number of MLP initial public offerings since 2000 demonstrates its significance as a financing vehicle.

Even with its popularity by the investment community, there has been very little academic research on MLPs. Most of the research to date occurred around the Tax Reform Act of 1986. At that time, MLPs were being formed by industries outside their traditional oil and natural gas base.

Academic research diminished when U.S. Congress closed the door on further utilization in 1987 of the MLP structure by those industries outside of the natural resource space. Most of the contemporary published research is showing up in law journals. Their research is mainly on the evolution of partnership agreements, particularly as they try to address the issues associated with IDRs.

The following section describes the history of MLPs from their earliest days to their current forms. It also discusses some of the advantages and challenges the organizational structure provides.

### **History of MLPs**

In 1981, Apache Corporation formed the first publicly-traded MLP. The genesis for this first MLP began in the mid-1950s. Raymond Plank, a Yale-educated World War II bomber pilot, and two other young men, Truman Anderson and Charles Arnao, set up an accounting, tax, and business advisory service in Minneapolis. Through this advisory service, they appreciated the substantial tax benefits that could be realized through investments in oil and gas exploration.

In those days, middlemen would raise investor capital, turn it over to a drilling operator and promise investors huge potential returns from one-well wildcat projects. Investors often realized sizable tax benefits but little else. The three entrepreneurs thought they could offer investors a better opportunity.

“They could offer investors the tax advantages of direct participation in the oil and gas business through limited partnerships while also providing them with an honest chance at a decent return. Anderson, Plank, and Arnao added “che” to their last-name initials and, on December 6, 1954, the Apache Oil Corporation was born. Apache would soon be the first in the oil and gas business to file a registration with the Securities and Exchange Commission for a drilling program.” (First 40 Years of Apache, p. 2)

Apache would spread investor capital and risk over several wells rather than just a few hit-or-miss prospects, known as one-shot wildcat ventures. While Apache had diversified some investor risk, the limited partnership interests were not very liquid investments, required a significant initial investment, and were only available to individuals who could be qualified as

Accredited Investors. Apache had a history of providing investors options for investing in oil and natural gas projects. They set out to develop a program that would increase investment liquidity. Apache created Apache Petroleum Company (APC), the world's first "master limited partnership." Apache offered existing limited partners a choice to remain in their existing oil and natural gas partnerships or elect to exchange their interests for publicly-traded units. APC offered a unique characteristic of providing all the tax benefits associated with a limited partnership plus the liquidity and critical mass of a share of common stock traded on the New York Stock Exchange.

APC's initial exchange offer in 1981 placed 85% of the eligible program participants from 33 separate drilling funds into the new master limited partnership. The trading value of the MLP units was over \$181 million. In its first full year, APC investors received \$19 million in tax-free distributions. In this post-oil embargo time, the investment structure gave unit holders both a rise in cash distributions as oil and natural gas prices increased unit price appreciation as well. Within 3 years, APC attracted 58,000 unit holders and would hold over \$1 billion in future estimated gross revenues. In late 1982, Apache purchased Dow Chemical's oil and gas division. As part of that transaction, Dow accepted APC MLP units as currency for the transaction. Dow's acceptance of MLP units as currency for the sale lent credibility to the investment structure.

During most of the 1980s, there were no restrictions on the type of business that qualified for the special MLP income tax treatment. Between Apache's first MLP IPO in 1981 and 1987, over 100 MLPs pursued initial public offerings (IPOs). The MLP structure began with oil and natural gas upstream assets but soon evolved to include a variety of businesses operating in a diverse array of industries. The MLPs formed included La Quinta Motor Inns Limited Partnership/Aircoa Hotel Partners, L.P., National Realty L.P., Cedar Fair L.P., an amusement



park, Falcon Cable Systems Company, and Sahara Casino Partners. The space even included the Boston Celtics Limited Partnership.

As the number of businesses adopting an MLP structure grew, Congress became concerned that the growth in MLPs could erode income tax revenues being generated by corporations. Unlike corporations, MLPs paid no income taxes directly (Fenn, 2014). Access to the MLP structure was retained by Congress for oil and gas companies, in part, to support the national goal of energy independence by maintaining incentives to expand the pool of available equity capital. The typical MLP value chain is shown in Figure 3 (see Appendix B).

### **Why Would a Company Organize as an MLP?**

Figure 4 depicts the progression of the formation of MLPs for 1986 through 2017 (see Appendix C). The pace of MLP formation increased in 2001, reaching a peak before the collapse of oil and natural gas prices in 2014.

The MLPs are structured much like a typical C corporation (C Corp). However, rather than shares of common stock, it has limited partnership units. Partnership units trade like shares of common stock on an organized financial exchange. The MLPs are similar to corporations in other ways. They have boards of directors, management teams, and employees. The MLPs' securities are subject to regulation by the Securities Exchange Commission (SEC) and are required to produce periodic reports to the Commission and its owners. These include an annual report (Form 10K), quarterly reports (Form 10Q), and an annual proxy statement (DEF 14A), among many other reports to the SEC (Goodgame, 2005).

On the surface, the main differentiation in MLPs from C Corps is how they are recognized for income tax purposes. The MLPs are treated as "pass-through entities." The unique tax treatment afforded MLPs is discussed later in this chapter.

The United States Federal income tax code is extremely complex and full of income tax incentives. Many of the incentives in the tax code allow C Corps to defer income tax liabilities. One of the major incentives that allow the deferral of income taxes is accelerated depreciation. In the period since the financial crisis of 2007, U.S. Congress has allowed taxpayers to utilize Bonus Depreciation. Depending on the year assets were placed in service, a C Corp could expense 50% to 100% of their assets in the year it went into service. There are several incentives aimed at the oil and gas sector that allow C Corps to defer most, if not all, current income tax liabilities. Even during this period of significant C Corp income tax deferrals, the creation of MLPs has continued at a significant pace. This suggests that there are reasons other than just its income tax status that may be driving the formation of MLPs. Ribstein (2011) refers to MLP as “uncorporations,” suggesting that the organizational form provided better governance, lower cost of capital, and greater strategic flexibility. Collins and Bey (1986) made similar references to the MLP as an alternative to the C corporation.

### ***Simplify the Business***

Investment opportunities, particularly in the oil and gas industry, often require evaluating a complex entity. Many of these companies are invested in multiple levels of the oil and gas value chain, including exploration, production, processing, transportation, refining, and marketing. In addition to the complexity of being in multiple portions of the value chain, many large oil and gas companies operate in numerous geographic areas and countries. The MLP structure allowed more complex companies to drop assets down into an MLP structure. Assets dropped down to the MLP could be engaged in more focused activities. For example, a large multinational company could drop down midstream oil and gas assets that operate in a single geographic sub-region. This makes the evaluation of the business and its prospects for cash

generation and growth much simpler. In essence, the MLP allows for separating unique assets from among more diverse assets to create a single line of business.

### ***Easier Valuation***

One of the requirements for MLP income tax status is deriving 90% of revenues from a qualifying activity. This in itself simplifies the business. Obtaining data to assess the value of specific assets is often not available from the published disclosures of a more diverse entity.

### ***Isolate Risks***

Fama and MacBeth (1973) posited that investors attempt to hold the most efficient portfolios possible by balancing their risks and returns. The complexity of multiple business risks within one entity makes this objective more difficult to achieve. The MLP structure makes the isolation of business risk simpler. Investors can more readily identify and evaluate specific risks. Commodity risk, the variability of oil and natural gas prices, is the single largest risk the oil and gas industry faces.

Revenues for midstream MLPs engaged in gathering, processing, and transportation of oil and natural gas are often fee-based. Fees are based on a rate per unit of volume gathered, processed, or transported (e.g., \$/MMBTU). This provides insulation from short-term commodity price volatility. Some of these rates are subject to federal or state regulation, further insulating the MLP from short-term price variability. Long-term commodity price movements can affect volumes available for gathering, processing, or transporting, increasing or decreasing MLP revenues.

As noted previously, MLPs are viewed as attractive alternatives for providing yield. The more focused MLP with adequate cash flow data simplifies evaluating the investor's interest rate risk.

### ***Instill a Discipline to Return Cash to Investors***

In his 1987 analysis of the takeover controversy of the 1980s, Jensen (1986) describes the takeover activity as creating a market for corporate control. He notes that the creation of this market created large benefits for shareholders and the economy. These gains are created by loosening control over resources enabling them to move to their highest and best value use. Jensen presented a free cash flow theory that argued free cash flows generated by a firm in excess of that required to finance all positive net present value projects created an environment conducive to agency problems. The theory implies investors discount the firm's value to account for both managements' consumption of the firm's resources and the expenditures made (audit, governance, etcetera) to prevent the consumption of resources.

Jensen used the considerable takeover activity in the oil and gas industry to make this point. He observes that different economies exist between the holding of reserves and exploration and development activities. In addition to the income tax advantages, this may explain the popularity of the MLP structure in the oil and gas industry. Once discovered and developed, producing reserves may be dropped down into an MLP. The positive cash flow is not available for management to invest in projects that do not earn the firm's cost of capital. Cash flow is returned to investors as specified in the partnership agreement.

The MLP's sponsor continues to exercise some control over the assets, typically through its role as a general partner. However, management must return to the capital markets to fund new growth opportunities. The assumptions used in valuing the benefits of the new investment must stand up to the scrutiny of the due diligence process. Investors are free to choose where they invest.

### *Agency Costs*

The MLP returning cash flow generated by assets to its owners is seen as reducing agency costs. Managers are agents for themselves and shareowners. Since management is involved in the day-to-day operations of the business, they have much better and timelier information. To offset this advantage, owners must incur costs to monitor management's activities. Some of these costs include internal controls, corporate governance, audited financials, and designing and implementing compensation plans. Jensen believed that managers have an incentive to expand the firm beyond a size that provides maximum shareholder value.

In their paper titled the "The Quiet Restructuring," Kesinger and Martin (1988) included the MLP as a vehicle being used to address the free cash flow issue, particularly in income-producing operations that required "little more than caretaker management."

Modigliani and Miller (1963) observed that when attempting to estimate the cost of capital, one is confronted with a variety of very different claims to portions of uncertain future earnings. This is true for MLPs where general partners may be entitled to increasing portions of earnings depending on an uncertain growth in revenues. The change in the portion of earnings flowing to the general partner may adversely impact the growth potential of the company's future earnings.

### *Taxation*

Business ventures may be conducted within several different organizational forms—corporate, partnership, or joint venture to name a few. The income tax consequences may differ depending on the organizational structure chosen. The C Corporations are subject to income and loss at the entity level. The owners are also subject to income taxes on distributions received. This tax situation is commonly referred to as "double taxation." Other organizational structures,

on the other hand, are referred to as “conduit or pass-through entities” for income tax purposes. Qualifying MLPs are treated as pass-through entities for income tax purposes, which means they are not subject to income tax at the partnership level. Income tax attributes of the MLP’s activities pass through to the partnership interest holders.

The passing of the Tax Reform Act of 1986 (TRA 86) was a watershed for the formation of MLPs. Prior to the TRA 86, limited partnerships were attractive investment vehicles available to individuals subject to high marginal personal income tax brackets. As previously mentioned in the discussion of the formation of Apache’s first MLP, the favorable tax treatment of oil and gas investments could be used to lower individual investors’ income tax liabilities.

Oil and gas exploration and production utilize a large amount of capital. Much of this capital is used to drill wells in search of oil and natural gas reserves. Current income tax regulations allow (non-integrated) oil and gas investors to deduct all the sub-surface costs of drilling a well as a current year expense. The ability to pass through these favorable tax attributes through entities treated as partnerships to high-income individuals has made it possible for the oil and gas industry to raise capital which helps explain the use of the MLP structure before the Tax Reform Act of 1986.

Before the TRA 86, the highest individual marginal income tax rates were much higher than corporate income tax rates. High-income individuals could defer their income tax by allowing investment profits to be taxed at lower corporate income tax rates, which could then be reinvested in the business. By foregoing current distributions, income taxes were thus deferred. High-income individuals could have received distributions and reinvested the earnings directly; however, the income would be taxed at higher individual income tax rates, so there would be less left after taxes for reinvestment. As part of the bargain made to reform the income tax system,

the TRA 86 significantly lowered the highest marginal individual income tax rate below the lowest corporate income tax rate. This inversion of income tax rates created an incentive to utilize pass-through entities to avoid income taxes at the entity level and be taxed at the lower individual level. Summers' (1981) study of the impacts of inflation and taxation on corporate investment indicates that income tax policy has a quite significant effect on capital formation.

### ***Tax Impact on Shareholder Wealth***

The 1980s saw significant income tax reform. The Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986 brought about significant changes affecting how corporate capital income is taxed. The U.S. Congress made further changes in 1982, 1984, and 1987. Both ERTA and TRA 1986 provided incentives for investment in new assets (Downs & Demergures, 1992). New assets enjoyed an advantage over existing assets due to the acceleration of the tax depreciation expense. This resulted in an increase in residual cash flow on the new investments. One way to level the field was to place both old and new assets into an MLP, thus increasing the residual cash flow to shareholders. Even in this structure, new assets were advantaged since the increased cash flow caused by accelerated depreciation was passed through to the limited partner owners.

The increase in wealth created by the new income tax regime is supported by the traditional cash flow theory (Downs & Tehranian, 1988). Summers (1981) investigated the impact of inflation and taxation, and corporate investment and found that changes in income tax policy have significant effects on asset prices. This finding was based on the assumption that the stock market valuation of corporate capital represents the present value of its future profit stream. The increase in future cash flows that result from the avoidance of double taxation by changing the entity's structure from a C Corp to a pass-through structure such as an MLP should

also be expected to increase asset values. The change in structure would have the same effect on the unit holders as a change in tax policy.

### ***Fundamentals***

The fundamental drives of MLP market valuations include (i) access to capital, (ii) cost of capital, (iii) credit spreads and, (iv) commodity prices (Blum et al., 2013). The MLPs pay out a majority of their cash flow as distributions to LP unit holders and GPs. At the same time, MLPs are engaged in industries that are capital intensive and therefore require capital to grow. The MLPs typically depend on access to debt and equity capital markets on reasonable terms to fund continued growth opportunities.

During the credit crisis of 2007 and 2008, the cost of incremental capital became very high. The high cost of capital made some potentially attractive projects uneconomic. Many investors are attracted to MLPs when seeking high yields. As a result, MLP credit spreads are influenced by credit spreads in similar high-yield investments such as corporate bonds.

Most MLPs are engaged in the midstream oil and natural gas sector. Variations in oil and gas prices have an immediate impact on the cash flows of upstream and natural gas processing MLPs. Commodity prices also have a more long-term effect on drilling activities. Decreased drilling has a more long-term effect on midstream MLPs, as growth opportunities from additional gathering investment and related increases in through-put volumes are also negatively impacted by less drilling.

During the credit crisis, MLPs also suffered from increased equity valuation volatility due to investment products that had been created to allow institutional investors to participate in MLPs. The products created by investment funds were based on Total Return Swaps (TRS). The total return on investments mirrored the returns on holding MLP units out right. Many of these



funds used leverage to increase returns. This was done primarily to substitute for the income tax advantage lost by the structure. The TRS values increased by the value of distributions from the MLP and appreciation of the MLP unit value. The swap holder, however, had to contribute cash to cover declines in the value of MLP units. As MLP valuations declined during the credit crisis, the cash requirements and leverage resulted in a high number of redemptions that further accelerated the decline in MLP unit values.

### ***Incentive Distribution Rights***

One of the significant components of a MLP is the incentive distribution rights (IDRs). MLP investors are focused on making financial investments. They are not interested or generally knowledgeable about the day-to-day operations of the business. In addition, MLP investors want to retain the protection of limited liability. As a result, the general partner controls the business activities of the partnership (Carpenter, 2012). The general partner maintains a small ownership stake in the partnership, typically zero to 2%. The limited partners want the general partner to be focused on the business and the objectives that are important to them. Thus, the IDR attempts to align the interests of the general partner with the limited partner.

As described earlier, the MLP investor is usually interested in a steady increase in cash distributions. The IDR provides the GP with a financial interest in increasing distributions to the LP. At its beginning, the partnership agreements call for minimum quarterly distributions to the LPs based upon an established schedule. To the extent the minimum distributions are met, the GP participates to the extent of its ownership, zero to 2%. In many instances, the sponsor or GP also owns a substantial number of limited partnership interests and therefore has an incentive to increase distributions without the IDR. The IDR grants its owner the rights to an increasing share of incremental cash distributions as distribution milestones to LP holders are met. The IDRs

typically cap out at 50% of incremental cash distributions. When the MLP has reached the point where the GP is receiving 50% of the incremental cash flow, it is said to be in the “high splits.”

### ***Rising Cost of Equity Capital***

The IDR has proved to be a strong incentive for the GP to increase distributions to the LPs’ interests. However, like any strong medicine, it has its side effects. As the percentage of distributable cash allocated to IDRs increases, the cost of capital to the LPs increases. One of the competitive advantages of MLPs in competing for projects with C Corps is the avoidance of double taxation. For a project to be accretive for the C Corp owner, the project cash flow has to cover the income tax burden. Similarly, an MLP in the high splits must cover the IDR percentage of incremental cash provided by the project. Some have referred to this as the IDR tax.

### ***Control of the High Cost of Capital***

As MLPs have reached high splits, the resulting cost of capital is limiting their growth opportunities. Three methods that are being used to moderate the high cost of capital are discussed below.

1. **GP voluntarily reduces the IDR schedule.** In order to facilitate a specific transaction or provide more growth opportunities, the GP may unilaterally forgo its incentive distribution rights. The elimination of IDR for a defined or indefinite period is intended to make a transaction accretive for the LP unit holders (McCabe, 2015).
2. **Purchase reduction in IDR schedule.** The second technique available to reduce the IDR burden is for the LPs to purchase a reduction in the IDR schedule from the GP. The reduction in the incentive distributions, net of the buy-down payments, would have to be significant enough for the growth project to be accretive to the LP unit holders to be economically viable.

3. **Completely buy out IDR by acquiring the general partner.** The third technique is used to mitigate the negative impact of the high splits for the LPs to buy out the GP.

The LPs thus purchase the cash flow attributable to the IDRs.

Chapter III presents the methodology for this study.

## CHAPTER III

### METHODOLOGY

#### **Sample Population of MLPs**

The population of MLPs used in this research was obtained from the Master Limited Partnership Association (MLPA), a trade association representing the publicly-traded partnerships commonly known as MLPs. The MLPA promotes the interests of MLPs in Washington, D.C., and the United States. In addition to representing the interests of the industry, the MLPA maintains a listing of organizations structured as MLPs. The MLPA's listing of MLPs is shown in Appendix I. The listing is organized by industry subsectors such as oil and gas midstream, oil and gas upstream, real estate properties, MLP funds, etcetera.

The subject of this research is focused on the oil and gas value stream, upstream, midstream, and downstream. The MLP subgroups such as real estate properties, investment/financial, and MLP funds do not include the operating dynamics between the sponsor and partnership contemplated in the hypothesis development.

Some MLPs have elected to be subject to income taxes at the partnership level. The MLPs that chose to be taxed at the partnership level were not included in the population of MLPs subject to this research since the election to be taxed would nullify the income tax difference of

the MLP structure compared to C Corps. These MLPs are typically organized and headquartered outside the United States and have limited income subject to federal income taxes.

### **Hypotheses Development**

This dissertation posits the following four hypotheses and associated analysis strategy.

#### ***Hypothesis 1***

Cash distribution requirements of the MLP structure mitigate Owner/Manager agency issues as evidenced by the premium investors place on MLP valuations.

#### ***Hypothesis 2***

Asset values are positively influenced by the low volatility of cash distributions afforded by the MLPs' governing agreements.

#### **Analysis Strategy**

Event Study using the date conversion or rollout is announced as the event date.

#### ***Hypothesis 3***

MLP asset valuation is directly influenced by the federal income tax policy.

#### **Analysis Strategy**

Event Study using the date the Tax Cuts and Jobs Act was signed by the President.

#### ***Hypothesis 4***

The MLP asset valuations are affected by exogenous changes to distributable cash, as demonstrated by the FERC's policy change on income tax allowances for regulated pipelines.

## Study Design

The event study has become the predominant tool for measuring the effect of an event on the value of a firm (Fama, 1991; Fama et al., 1969; MacKinlay, 1988). An event study is an efficient way to measure the effects of an event using readily available financial market data. The effectiveness of the event study is based on the assumption that markets are rational and that the effect of an event, if any, will be reflected in asset prices.

Events studies date back to Dolley (1933). Dolley examined the nominal price change of stocks at the date of the announcement of stock splits. Over the years, the sophistication of event studies has increased (Ball & Brown, 1968). Fama, Fisher, Jensen, and Roll (1969) introduced the event study methodology that remains in use today. An Event Study typically consists of seven steps.

1. **Event definition**—Identification of the event. Identification of the event window, the period over which the security prices of the company will be examined.
2. **Selection criteria**—the criteria to be used to include or exclude a firm from the study.
3. **Normal and abnormal returns**—to assess the impact of the event on the company's securities, abnormal returns must be measured. Normal returns are the returns that would have been expected had the event not occurred. Abnormal returns are actual returns minus expected returns as shown in the following equation.

$$E^*_{it} = R_{it} - E [R_{it} | X_t]$$

where  $E^*_{it}$  is the abnormal return,  $R_{it}$  the actual return and  $E (R_{it})$  the normal return, for time period  $t$ .  $X_t$  is the model condition for estimating normal returns (Lintner, 1965; Sharpe, 1963).

The constant-mean-return model and the market model are the two most used. The constant-mean-return model assumes  $X_t$  is constant. This assumes the return of a company's security is constant through time. The market model assumes  $X_t$  is the market return. The market model assumes the company's security returns have a stable linear relationship with market returns.

4. ***Estimation procedures***—with the normal performance model determined, the event window is established. This is typically a period immediately before the event date.
5. ***Testing procedures***—represent a framework for testing abnormal returns. The definition of abnormal returns for individual firms and the technique for aggregating abnormal returns of individual firms is an important consideration.
6. ***Empirical results***—this involves presenting the results in a way that facilitates diagnosing the meaning of the results.
7. ***Interpretation and conclusions***—empirical results are reviewed with the goal of establishing insight on the effect of the event on security prices.

Event studies using a market model to estimate abnormal returns based on daily securities data are well established (Brown & Warner, 1985)

### **Data Collection**

The S&P Global Market Intelligence Capital IQ's database was used as a primary source for market information to conduct this research. Capital IQ contains transaction information at the entity level. This information included, among other things, reporting of mergers, acquisitions, and initial public offerings.

For this research, merger transactions were not included in the event study as they did not contain the interesting attributes that are the subject of this research. Acquisitions and IPO transactions were included.

Acquisitions were generally asset drop downs from the MLP sponsors to the MLP. These transactions are consistent with the theoretical foundation of this research. Qualifying income-producing assets would not be subject to income taxes at the entity level and would enjoy the ability to pass through favorable income tax attributes such as accelerated depreciation to the MLP owners. The MLP structure also contains strong incentives for its management to maximize cash distribution to MLP unit holders while maintaining financial discipline on capital investments consistent with maintaining cash distributions.

The MLP IPOs were included in the event study as they represented the sponsor entity's opportunity to monetize the MLP structure. The sponsors formed the MLP and dropped assets into the MLP prior to it becoming a publicly-traded entity. The IPO was the first opportunity for the market to evaluate the value created by the MLP structure. The MLP sponsor generally serves as the GP and retains a significant number of MLP units. Since the sponsoring of a C Corporation retains a significant investment through its ownership of MLP units, the C Corporations were included in the event study to see if the market recognized the value-creating transaction by rewarding the sponsor with a higher share price.

A review of the Capital IQ database was performed for each entity listed in the revised MLP listing. The general description of the entity was reviewed to understand the type of entity being reviewed and to make sure the entity met the research objectives. The corporate structure was also examined to identify the MLP sponsor and understand how it fits into the sponsor's corporate structure.



Some of the transactions were complex, and the summary description of the transaction was not sufficient to obtain an understanding of the relevant attributes of the transaction. In those instances, the Form S-1 filed with the Securities and Exchange Commission, company press releases, or investor publications were consulted for a more detailed description of the transaction and the relationship of the parties involved.

The sponsor organization generally maintained a significant interest in the publicly-traded MLP units. The MLP IPO presented an opportunity for the market to recognize the increased value of the sponsor's assets in the MLP structure. The IPO transaction, including the sponsor and the now publicly-traded MLP, were included in the event study to measure the occurrence of abnormal market returns around these events.

The MLP transactions that did not involve a sponsor were not included in this study. The unique attributes of the MLP structure were generally not present. It was observed that the counter-parties involved in these transactions were often both MLPs; therefore, the transaction did not reflect the unique attributes of the MLP structure being introduced into the asset valuation by the market.

Securities trading data was obtained from the University of Chicago's Center for Research in Security Prices (CRSP) and was accessed using the Wharton Research Data Services (WRDS). The CRSP is the principal source used in academic research of market price and trading volumes for stocks and thus was of particular interest to this research, MLP units. The CRSP calculates indexes of all securities traded on the New York Stock Exchange, American Stock Exchange, and NASDAQ markets. The CRSP calculates an equally-weighted index and a value-weighted index where value weighting is calculated based on the market capitalization at the end of the previous year.

The CRSP Value-Weighted Indexes were used for the two event studies performed in this research. Notably, Canina (1998) found value-weighted indexes to more closely reflect a portfolio held by investors and have less bias than equal-weighted indexes. Chapter IV presents the findings of this study.

## CHAPTER IV

### FINDINGS

#### **Event Study I**

I hypothesized that investors would perceive value in the MLP structure. Explanations for this value include income tax efficiency, better corporate governance, constructive regulation, and an attractive yield with growth potential. Two event studies were used to measure the impact of events representing unique aspects of MLPs that are of interest to this research.

Eventus software (Cowan, 2021), accessed through the WRDS online applications, was used to estimate the pre-event period sample using ordinary least squares (OLS) regression. Event period security and market index returns were then compared to estimate the abnormal returns. Parameter estimates are reported based on the results. The most common method for comparing the daily and cumulative abnormal returns is the Patell Z score (Patell, 1976). The Patell Z score reports the statistical significance of abnormal returns during the review period. The Patell Z score sums individual t-statistics derived for each firm and divides the sum by the square of the sample size. The equation is expressed as:

$$Z_{Patell} = \frac{1}{\sqrt{N}} \sum_{i=1}^N \frac{CSAR_i}{S_{CSAR_i}}$$

One of the challenges of using OLS regression for daily securities data is that it is assumed to be cross-sectionally independent. A variety of statistical methods have been suggested to address cross-sectional dependence. A review of the literature indicates that there is no agreement on the single best solution. As a result, multiple test methods were used to evaluate the results of each event study.

### **Analysis Strategy**

As a preliminary test of the event study methodology, two events were used in this research. The first is the recent enactment of the Tax Cuts and Jobs Act of 2017 (TCJA). The federal corporate income tax rate was reduced effective January 1, 2018, to 21% from 35%. The TCJA reduced the federal corporate income tax burden of corporations by 40%. Hypothesis 3 asserts that MLP valuations are directly influenced by federal income tax policy. One of the advantages of the MLP structure is the avoidance of double taxation. The 40% reduction in the corporate income tax burden reduces the double taxation penalty, and it would be expected that the valuation of MLPs relative to the market would decline.

In Event Study I, I looked at MLP unit returns 30 days before the date the TCJA was signed by the President and 30 days after the legislation was signed. It was expected that the 40% decrease in the federal corporate tax rate would reduce the value of MLP units. In the event window, the day of the announcement, and the next day, Mean Cumulative Abnormal Returns were found to be slightly positive. Abnormal returns were negative in the 30 days prior to the event window. Mean Cumulative Abnormal returns were 8.35% for the 30 days after the event window (see Appendix D, Table 1). The abnormal returns may be explained by the special income tax treatment of pass-through entities like MLPs that were in play as the House and Senate reconciled their competing pieces of legislation. The negative abnormal returns before the

event window may have reflected this concern. The abnormal positive returns in the days after the event window may be attributed to investors viewing the retention of pass-through entities as a positive event. The final text of the TCJA was over 1,000 pages. This may account for why the abnormal returns within the event window may have been somewhat muted.

To refine the analysis of the impact of the TCJA on MLP valuations, I evaluated the presence of abnormal market returns as a revelation of the direction of tax policy changes that occurred throughout the legislative process. The preliminary analysis used the date the President enacted the TCJA with his signature. Proposals for comprehensive changes in federal income taxes were made public throughout the legislative process providing multiple opportunities for the market to adjust MLP valuations based on perceived effects of the TCJA.

The changes were first unveiled with the release of House Bill H.R. 1, on November 2, 2017. The House passed the Bill on November 16, 2017. In the meantime, Senator Orrin Hatch, Chairman of the Senate Finance Committee, unveiled modifications to the Senate's proposed legislation. The Senate Finance Committee approved the Bill on November 16, 2017. The full Senate passed an amended version of TCJA on December 2, 2017. The House and Senate Conference Committee released a revised version of the legislation, reconciling differences between the two Bills on December 15, 2017. This version of the Tax Cuts and Jobs Act was ultimately passed by both chambers of Congress and sent to the President (Steussy, 2021).

I have used each of these significant milestones in the legislative process as event dates to measure the market reaction. The Senate passage of the TCJA happened on December 2, 2017, which was a Saturday, and the market was closed. I substituted Monday, December 4, 2017, as the first trading day after passage in my analysis.

The event study showed a small cumulative abnormal return of 0.15% compared to the CRSP Value-Weighted index returns on the dates that significant legislative action occurred. The results of the study are shown in Appendix E, Table 2. The Positive: Negative test and Patell Z test were significant at 0.05. None of the other tests were significant at the 0.05 level. Once again, the period before legislative votes were taken indicated higher negative abnormal returns of -1.86%. The Positive: Negative, Standardized Cross-Sectional and Patell Z were significant at the 0.001 level for the periods before major legislative votes were taken. Like the initial event study, abnormal returns (3.55%) were positive for the 30 days after the event dates. The Positive: Negative, Standardized Cross-Sectional and Patell Z were significant at the 0.001 level.

## **Event Study II**

In my second event study, I examined events that were expected to have an impact on MLP securities valuation—the impact of regulation. Hypothesis 4 asserts that MLP asset valuations are affected by exogenous changes to distributable cash, as demonstrated by the FERC’s policy change on income tax allowances for regulated pipelines.

The FERC uses cost of service regulation to determine a regulated investor-owned utility’s revenue requirement. The revenue requirement includes a company’s operating expenses, depreciation, and a return on its rate base investment. Rate base investment is the capital investment in assets used to provide services to its customers. In the case of natural gas pipelines, this includes pipe in the ground, valves, compressor stations, metering equipment, etcetera.

The FERC determines a required rate of return to support the company’s capital structure. Regulated capital structures typically include long-term debt and equity. The rate of return for the debt portion of the capital structure is straightforward. It is the weighted average cost based

on the interest rate embedded in the debt instruments. Typically, these debt instruments are long-term bonds. The allowed equity rate of return is more subjective. Based on long-standing Supreme Court case law, the equity return should be based on what investors could earn on other investments with similar risk. The equity return is based on examining market-provided returns of a peer group of comparable companies. The market returns are after income tax returns. Once the equity return is established, it is grossed up for income taxes to provide an equity return after subtracting income tax expenses that are comparable to the after-income tax market returns of the peer group. In its regulation of MLP pipeline companies, the FERC included an income tax gross-up in determining the revenue requirement. A group of pipeline customers filed a complaint with the FERC challenging the income tax gross-up for MLPs based on the fact that MLPs were not subject to income tax. After a long process of hearing evidence provided by the interested stakeholder, the FERC issued its ruling.

On March 15, 2018, the FERC issued its order in Docket PL 17-01-000. The order disallowed including an income tax allowance in determining rates and charges used by MLPs operating interstate pipelines. The elimination of the income tax expense allowance in pipeline rates significantly reduced the profitability of pipeline MLPs and distributable cash flow. The reduction in distributable cash was expected to have an adverse impact on the valuation of pipeline MLPs. I conducted Event Study II using MLPs identified as “midstream” or “pipeline” by the MLPA’s membership listing. Midstream and pipeline MLPs are subject to varying degrees of FERC regulation. Most midstream and pipeline MLPs have both interstate and intrastate operations. Interstate activities are subject to the price-setting jurisdiction of the FERC. The event date for this study was March 15, 2018, the date the Federal Energy Regulatory Commission issued its order in Docket PL 17-01-000.

Table 3 shows the results of this event study using the WRDS Eventus software (see Appendix F). As demonstrated by the data in Table 3, the midstream MLPs exhibited negative abnormal returns of 5.58% in the 30 days leading up to the order and negative abnormal returns of 3.62% on the event date (0,0). The Patell Z for the event window is -16.302 and is significant at a  $p$ -value  $< 0.001$ . Standardized Cross-Sectional and CDA were also significant at 0.001. The Rank Test Z was significant at 0.05. Interestingly, MLPs experienced positive abnormal returns of 6.83% on the 30 days after the order was issued. It is possible that the market recognized that the order did not apply to all of the MLPs' revenue streams, and the post-order market returns reflect a correction of an overreaction to the effects of the order.

Of the four primary ways MLPs are formed, two lend themselves to event studies. Therefore, conversions and rollouts are included in the study. In a conversion, an existing C Corp is converted from a corporation to an MLP. This is accomplished through the exchange of shares of stock for MLP units. A rollout occurs when a subsidiary or a line of business is contributed to an MLP. The MLP units may then be offered to the public following an initial public offering.

### ***Hypothesis 1***

Cash distribution requirements of the MLP structure mitigate Owner/Manager agency issues as evidenced by the premium investors place on MLP valuations.

### ***Hypothesis 2***

Asset values are positively influenced by the low volatility of cash distributions afforded by MLP governing agreements.

### **Analysis Strategy**

Hypothesis 1 and 2 both assume that investors value the discipline imposed on management by the MLP structure. The partnership agreement sets out in advance distributions



of free cash flow. The majority of MLP partnership agreements also contain significant incentives for the GP to increase the level of cash distributions. This study used two Event Studies to observe the presence of abnormal within a ten-day event window around the date conversion or rollout was announced.

For purposes of the event study, the event date used for conversions was the date of the MLP announcement of its intent to begin trading units on a public market by conducting an IPO. To evaluate the impact of rollouts, the announcement date of asset transactions between the sponsor and the MLP was used. Because there were so few IPO transactions, IPO and asset transaction dates were combined into one study. The transactions included in the study occurred between December 1986 and October 2018 (see Appendix G, Table 4; Appendix H, Table 5).

The event study showed a small cumulative abnormal return of 0.13% compared to the CRSP Value-Weighted index returns on the dates that significant legislative action occurred. The Positive: Negative test, Patell Z, and Generalized Sign Z tests were significant at the 0.05 level.

## CHAPTER V

### CONCLUSION

The overarching goal of this research was to investigate whether Master Limited Partnerships have provided investors with opportunities for value creation. This goal was pursued by examining three attributes unique to MLPs—income tax treatment of MLPs, corporate governance advantages, and the regulatory environment they operate in. The enactment of the TCJA in 2017 reset the relative impact of income tax costs between MLPs and traditional corporations. The timing of the TCJA provided an opportunity, using event studies to observe MLP securities market movement relative to the broader market.

The results of Event Study I and II—using multiple event dates representing key legislative milestones—identified, as expected, a moderate decline in MLP valuations. The results showed more significant value declines preceding the legislative votes and more significant valuation increases after the votes. This pattern of returns is consistent with MLPs' concerns that the TCJA would eliminate the income preferences granted them. As the legislation was passed and several benefits survived the legislation, MLP valuations recovered.

This study also examined how markets react to the commitment of future cash flows to the MLPs' structural discipline to return cash to investors. Corporate governance advantages of MLPs are measured by subjecting future cash flows to greater management discipline.

Significant abnormal market returns were observed around the dates when material assets were transferred from a traditional corporate structure to an MLP.

Third, my research examined the impact of change to the regulatory regime that alters MLPs' structural advantage over those of traditional corporations. Significant abnormal market returns were observed during the event window as investors reacted to the FERC order. Multiple tests of statistical significance at the 0.001 level were observed. In the 30 days after the order was released, abnormal market and positive market returns indicated that investors were able to evaluate the order's impact on valuations fully.

This dissertation improves our understanding of the value creation aspects that differentiate Master Limited Partnerships from traditional corporate business structures.

## REFERENCES

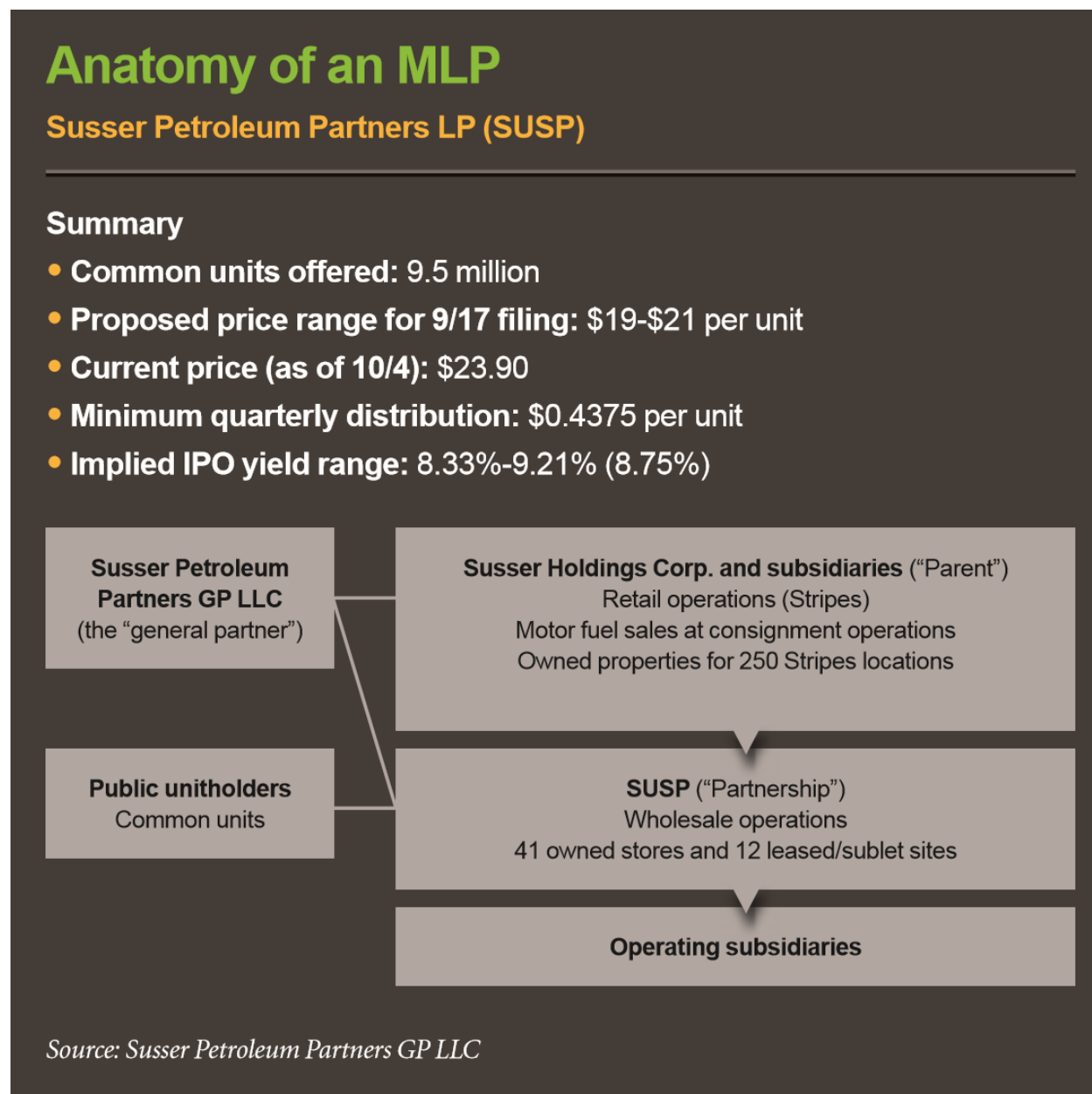
- Apache Corporation. *First 40 years of Apache*. <https://apacorp.com/about/>
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *The Journal of Accounting Research*, 6(2), 159-178.
- Blum, M., Lui, S., Satish, P., Shiu, E., & Baramov, N. (2013). *MLP primer: A guide to everything MLP*. Wells Fargo.
- Brown, S., & Warner, J. (1985). Using daily stock returns. *Journal of Financial Economics*, 14(1), 3-31.
- Canina, L. E. (1998). Caveat compounder: A warning about using daily CRSP equal-weighted index to compute long-run excess returns. *The Journal of Finance*, 53(1), 403-416.
- Carpenter, J. T. (2012). Master limited partnerships shed a tier. *South Texas Law Review*, 381-419.
- Collins, J. M., & Bey, R. P. (1986). New developments in financial management. The master limited partnership: An alternative to the corporation. *Financial Management*, 15(4), 5-14.
- Cowan. (2021). *Eventus software*. Cowan Research, L.C.
- Dolley, J. C. (1933). Characteristics and procedure of common stock stock split-ups. *Harvard Business Review*, 316-326.
- Downs, T. W., & Tehranian, H. (1988). Predicting stock price responses to tax policy changes. *The American Economic Review*, 78(5), 1118-1130.
- Downs, T., & Demergures, C. (1992). The asset price theory of shareholder revaluations: Tests with the tax reforms of the 1980s. *The Financial Review*, 27(2), 151-184.
- Fama, E. F. (1991). Efficient capital markets II. *The Journal of Finance*, 81(3), 1575-1617.
- Fama, E. F., & MacBeth, J. (1973). Risk, return, and equilibrium: Empirical tests. *Journal of Political Economy*, 81(3), 607-636.
- Fama, E., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review*, 1-21.
- Fenn, T. (2014). *Master limited partnerships (MLPs): A general primer*. Latham & Watkins.

- Goodgame, J. (2005). Master limited partnership governance. *The Business Lawyer American Bar Association*, 60(2), 471-506.
- Jensen, M. (1986). The takeover controversy: Analysis and evidence. *Midland Corporate Finance Journal*(Summer).
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kesinger, J., & Martin, J. (1988). The quiet restructuring. *Journal of Applied Corporate Finance*, 60(2), 16-25.
- Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *Review of Economics and Statistics*, 47, 13-37.
- MacKinlay, A. C. (1988). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13-39.
- McCabe, M. J. (2015). Master limited partnerships' cost of capital conundrum. *University of Pennsylvania Journal of Business Law*, 17(1), 319-343.
- MLP Primer*. (2017, August). *Alerian MLP university primer*. Retrieved from <https://www.alerian.com/wp-content/uploads/Alerian-MLP-University-Primer.pdf>
- Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53, 433-443.
- Patell, J. (1976). Corporate forecasts of earnings per share and stock behavior: Empirical test. *Journal of Accounting Research*, 14(2), 246-276.
- Ribstein, L. E. (2011). Energy infrastructure investment and the rise of the unincorporation. *Journal of Applied Corporate Finance*, 23(3), 75-83.
- Sharpe, W. (1963). A simplified model for portfolio analysis. *Management Science*, 277-293.
- Steussy. (2021, Jan 6). *Tax Cuts and Jobs Act of 2017 legislative history*. Retrieved from Drexel University Thomas R Kline School of Law. <https://drexellaw.libguides.com/taxreformleghist>
- Summers, L. H. (1981). Taxation and corporate investment: A "q" theory approach. *Brookings Papers on Economic Activity*, 67-127.
- Woodman, R. (2012, September 13). The evolution of the MLP in fuel distribution. *CSP Magazine*.

## APPENDICES

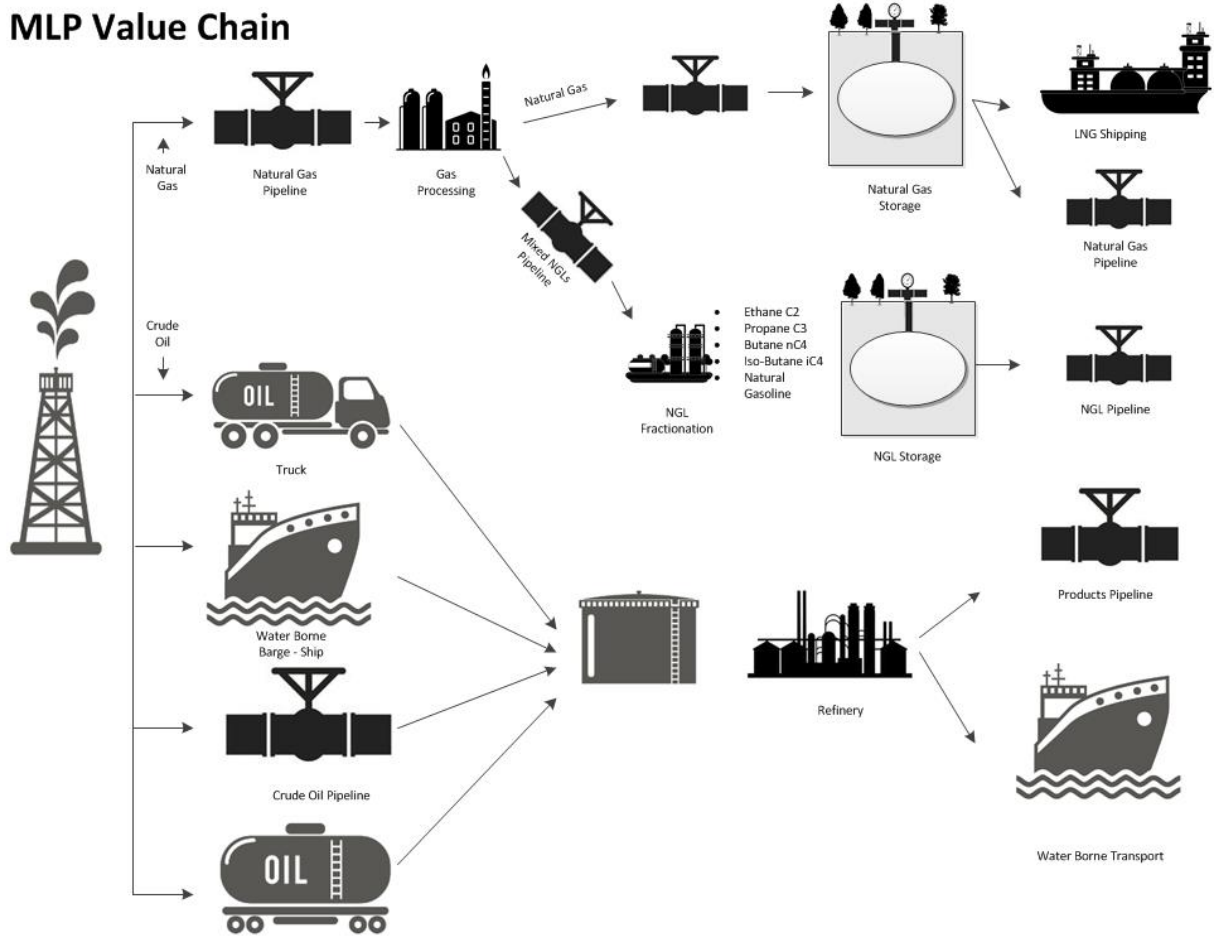
## APPENDIX A

Figure 2. Anatomy of an MLP (Source : Susser Petroleum Partners LP)



APPENDIX B

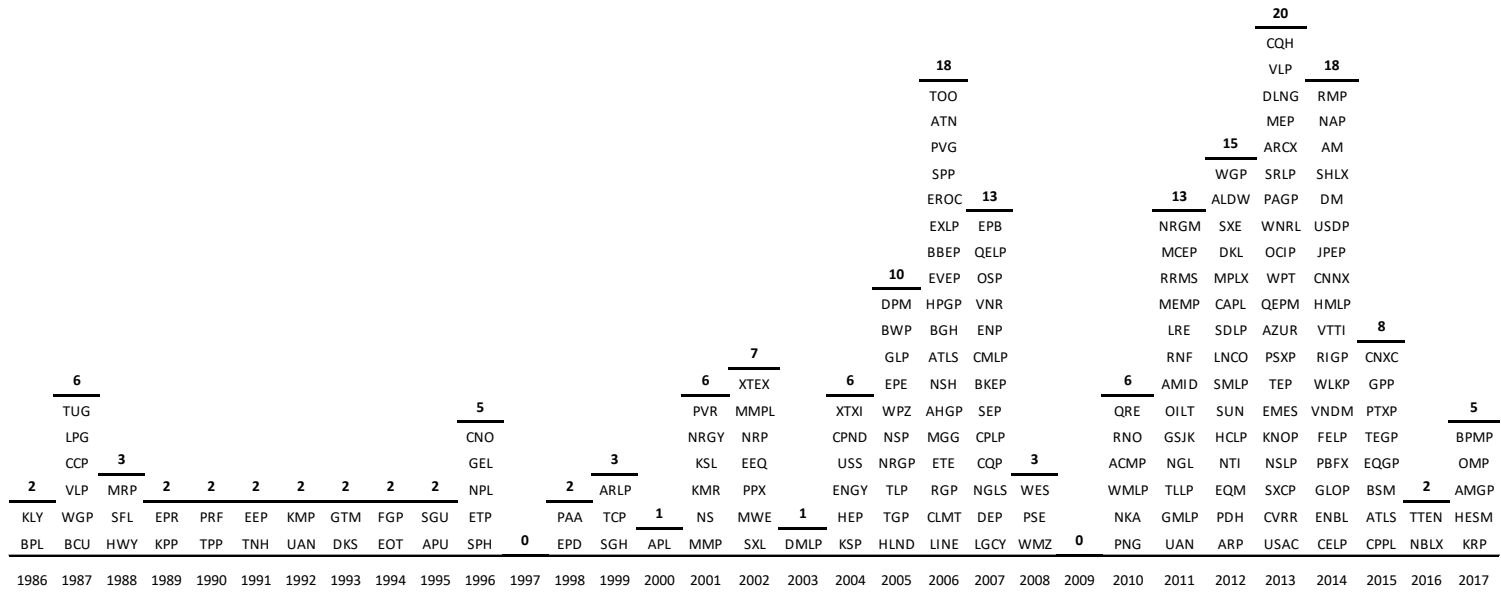
Figure 3. Typical MLP Value Chain





## APPENDIX C

Figure 4. MLP Initial Public Offerings (IPOs) by Year.



(Adapted from Alerian University MLP 101)

**APPENDIX D - Table 1**

**TCJA 2017 Signed by the President**

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	Patell Z	p-value	Portfolio Time-Series (CDA) t	p-value	Generalized Sign Z	p-value
(-30, -2)	73	-3.54%	-2.67%	24:49<<	-2.404	0.0162	-0.794	0.4274	-2.761	0.0058
(-1, 0)	73	0.69%	0.80%	47:26>>	2.731	0.0063	0.591	0.5546	2.624	0.0087
(+1,+30)	73	8.35%	6.88%	60:13>>>	6.068	<.0001	1.839	0.0660	5.668	<.0001

Wharton Research Data Services. "Eventus Basic Event Study" wrds.wharton.upenn.edu, accessed 11/19/2018.

**APPENDIX E - Table 2**

**Significant Tax Legislative Votes-Multiple Dates**

Days	N	Mean Cumulative Abnormal Returns	Precision Weighted CAAR	Positive: Negative	CSector t	Portfolio Time-Series (CDA)	Patell Z	Rank Test Z
(-30,-1)	438	-1.86%	-2.34%	163:275<<<	-5.002***	-0.901	-5.063***	-1.503\$
(0,+1)	438	-0.15%	-0.23%	191:247<	-1.160	-0.277	-2.002*	-0.502
(2,+30)	438	3.55%	2.97%	290:148>>>	7.588***	1.749*	6.502***	1.303\$

Days	N	Mean Cumulative Abnormal Returns	Positive: Negative	CSector	Portfolio Time-Series (CDA)	Patell Z	Rank Test Z
-30	438	-0.19%	188:250<<	-2.051*	-0.498	-3.571***	-0.878
-29	438	-0.10%	198:240(	-1.366\$	-0.276	-1.405\$	-0.389
-28	438	0.32%	235:203>	3.141***	0.848	2.633**	0.586
-27	438	-0.26%	185:253<<	-2.784**	-0.702	-4.336***	-0.897
-26	438	-0.18%	200:238(	-1.840*	-0.487	-0.731	-0.188
-25	438	-0.12%	200:238(	-1.305\$	-0.326	-1.882*	-0.481
-24	438	0.18%	218:220	2.051*	0.469	1.726*	0.374
-23	438	-0.44%	157:281<<<	-4.634***	-1.155	-6.036***	-1.501\$
-22	438	-0.42%	157:281<<<	-4.402***	-1.121	-4.862***	-1.303\$
-21	438	-0.05%	195:243<	-0.546	-0.140	-1.534\$	-0.280
-20	438	-0.07%	210:228	-1.013	-0.194	-0.583	-0.021
-19	438	0.07%	228:210	0.729	0.189	0.423	0.098
-18	438	-0.30%	175:263<<<	-3.275***	-0.788	-3.643***	-1.013
-17	438	-0.58%	134:304<<<	-7.163***	-1.552\$	-7.057***	-2.114*
-16	438	0.41%	245:193>>	4.118***	1.101	4.312***	0.892
-15	438	0.23%	243:195>>	2.682**	0.623	3.063**	0.792
-14	438	-0.52%	154:284<<<	-4.977***	-1.386\$	-6.484***	-1.687*
-13	438	-0.40%	166:272<<<	-4.093***	-1.060	-5.163***	-1.241
-12	438	-0.32%	171:267<<<	-3.385***	-0.839	-3.743***	-1.027
-11	438	0.32%	224:214	2.878**	0.841	4.271***	0.574
-10	438	0.25%	236:202>	2.342**	0.651	2.899**	0.605
-9	438	0.17%	220:218	1.713*	0.457	1.607\$	0.238
-8	438	-0.13%	193:245<	-1.361\$	-0.345	-1.240	-0.394

Days	N	Mean Cumulative Abnormal Returns	Positive: Negative	CSectorr	Portfolio Time-Series (CDA)	Patell Z	Rank Test Z
-7	438	-0.06%	216:222	-0.730	-0.172	-1.112	-0.049
-6	438	-0.09%	215:223	-0.964	-0.242	-1.313\$	-0.172
-5	438	-0.27%	191:247<	-2.514**	-0.704	-3.180***	-0.764
-4	438	0.14%	217:221	1.470\$	0.370	2.113*	0.380
-3	438	-0.33%	166:272<<<<	-3.652***	-0.884	-3.853***	-1.095
-2	438	0.10%	205:233	0.947	0.254	1.466\$	0.055
-1	438	0.80%	307:131>>>>	8.349***	2.136*	9.619***	2.669**
0	438	-0.58%	138:300<<<<	-5.723***	-1.542\$	-7.252***	-1.944*
+1	438	0.43%	258:180>>>>	4.959***	1.150	4.487***	1.234
+2	438	-0.40%	167:271<<<<	-4.378***	-1.061	-5.080***	-1.240
+3	438	0.13%	218:220	1.056	0.339	0.434	0.184
+4	438	0.32%	246:192>>	2.991**	0.841	2.574**	0.799
+5	438	0.61%	279:159>>>>	6.253***	1.627\$	7.507***	1.837*
+6	438	0.20%	230:208)	1.879*	0.530	3.059**	0.668
+7	438	-0.54%	146:292<<<<	-4.652***	-1.421\$	-6.600***	-1.842*
+8	438	-0.24%	176:262<<<<	-2.012*	-0.639	-3.798***	-0.943
+9	438	0.53%	252:186>>>>	4.472***	1.395\$	6.594***	1.363\$
+10	438	0.44%	240:198>>	4.398***	1.168	5.375***	0.998
+11	438	0.33%	233:205>	3.150***	0.876	3.238***	0.770
+12	438	0.29%	230:208)	2.326*	0.779	2.363**	0.430
+13	438	-0.76%	136:302<<<<	-9.414***	-2.017*	-8.726***	-2.238*
+14	438	0.53%	283:155>>>>	6.013***	1.395\$	5.872***	1.813*
+15	438	0.00%	200:238(	0.008	0.002	-0.501	-0.174
+16	438	-0.12%	194:244<	-1.183	-0.306	-1.097	-0.457
+17	438	0.19%	220:218	1.569\$	0.508	1.707*	0.350
+18	438	0.37%	251:187>>>>	3.829***	0.985	4.338***	1.212
+19	438	0.81%	299:139>>>>	8.154***	2.154*	10.488***	2.365**
+20	438	-0.01%	207:231	-0.103	-0.029	0.340	-0.211
+21	438	0.01%	186:252<<	0.076	0.024	-0.723	-0.460
+22	438	-0.47%	143:295<<<<	-6.509***	-1.254	-5.063***	-1.651*
+23	438	-0.09%	198:240(	-0.883	-0.233	-1.615\$	-0.404
+24	438	0.29%	244:194>>	3.450***	0.780	3.182***	0.918
+25	438	0.17%	240:198>>	1.787*	0.454	1.575\$	0.505
+26	438	0.82%	288:150>>>>	7.757***	2.182*	8.789***	2.167*
+27	438	-0.23%	196:242<	-3.032**	-0.615	-2.283*	-0.568
+28	438	0.37%	237:201>	2.947**	0.996	3.446***	0.921
+29	438	0.03%	228:210	0.345	0.093	0.014	0.215
+30	438	-0.05%	206:232	-0.537	-0.135	-0.661	-0.309

**APPENDIX F - Table 3**

**FERC Order Adversely Affecting MLPs**

Days	N	Mean Cumulative Abnormal Return	Precision Weighted CAAR	Positive: Negative	CSEctErr t	Portfolio Time-Series (CDA) t	Patell Z	Rank Test Z
(-30,-1)	47	-5.58%	-5.72%	12:35<<<<	-3.873***	-1.151	-4.888***	-0.984
(0,0)	47	-3.62%	-3.61%	4:43<<<<	-6.221***	-4.091***	-16.302***	-2.216*
(+1,+30)	47	6.83%	6.34%	40:7>>>>	4.342***	1.409\$	5.211***	1.338\$

Day	N	Mean Abnormal Return	Positive: Negative	CSEctErr t	Portfolio Time-Series (CDA) t	Uncorrected Patell Z	Rank Test Z
-30	47	0.34%	28:19)	1.804*	0.379	0.883	0.269
-29	47	0.74%	36:11>>>>	3.671***	0.842	3.644***	0.949
-28	47	-0.20%	24:23	-0.862	-0.225	-1.167	-0.134
-27	47	2.46%	44:3>>>>	9.858***	2.787**	9.439***	2.163*
-26	47	0.24%	28:19)	1.144	0.270	1.141	0.414
-25	47	-0.10%	21:26	-0.408	-0.109	-0.739	-0.133
-24	47	0.76%	35:12>>>>	1.924*	0.860	2.524**	1.119
-23	47	-3.12%	5:42<<<<	-6.959***	-3.524***	12.866***	-2.129*
-22	47	0.82%	35:12>>>>	3.862***	0.930	4.038***	1.047
-21	47	0.71%	29:18>	3.798***	0.805	2.840**	0.758
-20	47	-1.55%	6:41<<<<	-7.454***	-1.755*	-6.861***	-1.630\$
-19	47	-1.43%	7:40<<<<	-5.716***	-1.612\$	-6.229***	-1.610\$
-18	47	-1.11%	7:40<<<<	-6.016***	-1.259	-5.055***	-1.324\$
-17	47	0.53%	32:15>>	2.335**	0.605	2.758**	0.766
-16	47	-0.98%	8:39<<<<	-4.618***	-1.105	-4.688***	-1.218
-15	47	-1.42%	8:39<<<<	-5.245***	-1.600\$	-6.271***	-1.385\$
-14	47	-0.93%	9:38<<<<	-3.679***	-1.055	-3.931***	-1.014
-13	47	-1.00%	9:38<<<<	-4.024***	-1.128	-4.734***	-1.239
-12	47	0.55%	33:14>>	3.778***	0.626	2.601**	0.753
-11	47	-0.49%	15:32<<	-2.623**	-0.555	-2.211*	-0.598
-10	47	1.64%	41:6>>>>	8.043***	1.855*	7.270***	1.691*
-9	47	-0.75%	14:33<<	-3.592***	-0.846	-3.612***	-0.788
-8	47	-0.13%	21:26	-0.660	-0.142	-0.540	-0.096
-7	47	-0.82%	11:36<<<<	-3.709***	-0.930	-3.540***	-0.968
-6	47	-0.61%	11:36<<<<	-4.812***	-0.692	-2.761**	-0.825
-5	47	-0.75%	15:32<<	-4.026***	-0.848	-2.882**	-0.845
-4	47	-0.37%	18:29(	-1.778*	-0.416	-1.851*	-0.459
-3	47	1.57%	38:9>>>>	6.105***	1.773*	7.209***	1.493\$
-2	47	0.71%	34:13>>>>	3.618***	0.803	3.292***	0.868
-1	47	-0.92%	7:40<<<<	-4.048***	-1.037	4.494***	-1.284
0	47	-3.62%	4:43<<<<	-6.221***	-4.091***	-16.296***	-2.216*
+1	47	0.71%	36:11>>>>	1.289\$	0.798	3.375***	1.143
+2	47	-1.83%	5:42<<<<	-4.872***	-2.072*	-8.531***	-1.721*
+3	47	-1.70%	8:39<<<<	-6.665***	-1.919*	-7.276***	-1.588\$

Day	N	Mean Abnormal Return	Positive: Negative	CSEctErr t	Portfolio Time-Series (CDA) t	Uncorrected Patell Z	Rank Test Z
+4	47	1.50%	40:7>>>	5.310***	1.692*	6.141***	1.498\$
+5	47	0.68%	33:14>>	2.687**	0.769	2.211*	0.649
+6	47	1.31%	38:9>>>	5.114***	1.480\$	5.710***	1.343\$
+7	47	-2.50%	2:45<<<<	-13.003***	-2.827**	-9.847***	-2.288*
+8	47	1.10%	41:6>>>	5.015***	1.239	4.083***	1.180
+9	47	0.28%	30:17>	1.259	0.319	1.411\$	0.421
+10	47	0.54%	33:14>>	1.981*	0.614	2.539**	0.815
+11	47	2.05%	46:1>>>	7.654***	2.319*	8.303***	1.954*
+12	47	-0.90%	14:33<<	-4.958***	-1.017	-3.601***	-0.927
+13	47	-1.06%	8:39<<<<	-3.610***	-1.195	-5.433***	-1.441\$
+14	47	0.82%	31:16>	3.116***	0.927	3.347***	0.769
+15	47	0.63%	32:15>>	2.688**	0.713	2.386**	0.707
+16	47	-0.85%	12:35<<<<	-4.541***	-0.963	-3.314***	-0.916
+17	47	0.79%	36:11>>>	3.275***	0.897	3.666***	0.934
+18	47	1.69%	42:5>>>	8.377***	1.912*	7.463***	1.764*
+19	47	-1.39%	8:39<<<<	-6.884***	-1.575\$	-5.970***	-1.438\$
+20	47	0.56%	33:14>>	2.901**	0.633	2.185*	0.632
+21	47	3.05%	46:1>>>	15.884***	3.447***	14.188***	2.452**
+22	47	-0.06%	28:19)	-0.329	-0.071	0.197	0.137
+23	47	-0.51%	13:34<<	-2.543**	-0.575	-2.217*	-0.687
+24	47	-0.36%	15:32<<	-1.750*	-0.409	-2.005*	-0.550
+25	47	0.87%	37:10>>>	4.718***	0.986	3.331***	1.043
+26	47	1.45%	40:7>>>	7.815***	1.642\$	6.757***	1.610\$
+27	47	-0.44%	11:36<<<<	-2.799**	-0.496	-2.144*	-0.699
+28	47	0.75%	34:13>>>	3.837***	0.851	3.561***	0.861
+29	47	-0.53%	16:31<	-1.978*	-0.596	-2.781**	-0.646
+30	47	0.18%	30:17>	0.887	0.200	0.777	0.321

Wharton Research Data Services. "Eventus Basic Event Study" wrds.wharton.upenn.edu, accessed 11/19/2018.

**APPENDIX G - Table 4**

**IPO and Asset Rollout Transactions (Summary Statistics)**

Market Model Abnormal Returns, Value Weighted Index						
Day	N	Cumulative Mean Abnormal Return	Positive:Negative	Portfolio Time-Series (CDA)	Patell Z	Generalized Sign Z
(-30,-2)	124	0.03%	65:59	0.030	-0153	0.815
(-1,0)	124	0.13%	71:53>	0.467	1.697*	1.893*
(+1,+30)	124	-1.21%	61:63	-1.130	-1.541\$	0.096*

The symbols \$, \*, \*\*, and \*\*\* denote statistical significance at the 0.10, 0.05, 0.01, and 0.001 levels, respectively, using a generic one-tail test. The symbols (< or >) etc., correspond to \$, \* and show the direction and significance of a generic one-tail generalized sign test.

**APPENDIX H - Table 5**

**IPO and Asset Rollout Transactions (Daily Statistics)**

**(30 Days Before and After)**

Market Model Abnormal Returns, Value Weighted Index						
Day	N	Mean Abnormal Return	Positive: Negative	Portfolio Time-Series (CDA)	Uncorrected Patell Z	Generalized Sign Z
-30	124	0.10%	71:53>	0.488	1.257	1.893*
-29	124	0.19%	72:52>	0.954	1.478\$	2.072*
-28	124	0.12%	51:73<	0.634	0.063	1.700*
-27	124	0.03	60:64	0.166	0.050	0.084
-26	124	0.02%	61:63	0.107	0.138	0.096
-25	124	0.10%	56:68	0.486	1.416\$	0.802
-24	124	0.010%	63:61	-0.035	1.139	0.455
-23	124	0.08%	60:64	0.426	-0.514	0.084
-22	124	-0.67%	45:79<<	-3.434***	-4.544***	-2.778**
-21	124	-0.11%	62:62	-0.582	-1.384\$	0.276
-20	124	0.09%	61:63	0.471	0.454	0.096
-19	124	-0.01%	58:66	-0.074	0.158	-0.443
-18	124	-0.04%	60:64	-0.205	-0.159	-0.084
-17	124	-0.36%	49:75<	-1.820*	-2.246*	-2.060*
-16	124	-0.02%	62:62	-0.083	0.208	0.276
-15	124	0.44%	70:54>	2.236*	2.658**	1.713*
-14	124	0.11%	64:60	0.553	1.424\$	0.635
-13	124	-0.14%	61:63	-0.728	-0.918	0.096
-12	124	0.03%	61:63	0.160	-0.052	0.096
-11	124	-0.04%	58:66	-0.186	0.215	-0.443
-10	124	0.42%	72:52>	2.151*	2.650**	2.072*
-9	124	0.01%	62:62	0.035	-0.487	0.276
-8	124	-0.19%	50:74<	-0.961	-2.008*	-1.880*
-7	124	-0.06%	56:68	-0.304	-0.678	-0.802
-6	124	0.01%	62:62	0.063	0.455	0.276
-5	124	0.09%	62:62	0.480	0.770	0.276
-4	124	0.03%	66:58	0.140	0.788	0.994
-3	124	-0.02%	64:60	-0.101	0.707	0.635
-2	124	0.25%	67:57	1.279	1.196	1.174
-1	124	0.18%	69:55)	0.944	2.129*	1.533\$
0	124	-0.06%	61:63	-0.283	0.265	0.096
+1	124	0.35%	62:62	1.777*	2.659**	0.276
+2	124	-0.14%	48:76<	-0.697	-1.444\$	-2.239*
+3	124	-0.29%	55:69	-1.479\$	-1.113	-0.982
+4	124	0.12%	67:57	0.620	0.533	1.174
+5	124	-0.03%	53:71(	-0.172	-0.419	-1.341\$
+6	124	-0.14%	54:70	-0.706	-1.177	-1.161
+7	124	-0.24%	56:68	-1.202	-1.560\$	-0.802
+8	124	-0.01%	63:61	-0.039	-0.545	0.455
+9	124	0.11%	57:67	0.549	1.071	-0.622
+10	124	0.06%	62:62	0.318	-0.026	0.276
+11	124	0.46%	66:58	2.327**	2.212*	0.994

Market Model Abnormal Returns, Value Weighted Index

Day	N	Mean Abnormal Return	Positive: Negative	Portfolio Time-Series (CDA)	Uncorrected Patell Z	Generalized Sign Z
+12	124	-0.01%	62:62	-0.055	0.207	0.276
+13	124	0.10%	65:59	0.518	0.685	0.815
+14	124	0.03%	62:62	0.160	0.203	0.276
+15	124	0.11%	54:70	0.542	-0.118	-1.161
+16	124	-0.01%	58:66	-0.034	-0.289	-0.443
+17	124	-0.04%	67:57	-0.205	-0.218	1.174
+18	124	0.02%	62:62	0.087	0.421	0.276
+19	124	-0.20%	56:68	-1.024	-1.356\$	-0.802
+20	124	-0.09%	66:58	-0.452	-0.124	0.994
+21	124	-0.19%	51:73<	-0.954	-0.772	-1.700*
+22	124	-0.36%	54:70	-1.846*	-2.833**	-1.161
+23	124	0.05%	60:64	0.245	-0.065	-0.084
+24	124	-0.21%	54:70	-1.067	-0.848	-1.161
+25	124	-0.07%	61:63	-0.383	-0.940	0.096
+26	124	-0.39%	48:76<	-2.003*	-2.414**	-2.239*
+27	124	-0.01%	64:60	-0.027	-0.208	0.635
+28	124	0.09%	63:61	0.456	1.249	0.455
+29	124	-0.20%	60:64	-1.024	-0.832	-0.084
+30	124	-0.08%	57:67	-0.419	-0.401	-0.622



## APPENDIX I

### Publically Traded Partnerships Trading on U.S. Exchanges Updated January 30, 2018

Exchange Symbol	Name	Income Tax Election
Natural Resources - Oil and Gas		
Mid Stream (Gathering, Processing, Compression, Transportation, Storage)		
AMID	American Midstream Partners, LP	
ANDX	Andeavor Logistics Partners LP	
AM	Antero Midstream Partners LP	
AMGP	Antero Midstream GP LP	1
APLP	Archrock Partners, L.P.	
BKEP	Blueknight Energy Partners, L.P.	
BWP	Boardwalk Pipeline Partners, L.P.	
BPMP	BP Midstream Partners LP	
BPL	Buckeye Partners, L.P.	
CQP	Cheniere Energy Partners	
CQH	Cheniere Energy Partners LP Holdings LLC	1
CNXM	CNX Midstream Partners LP	
CEQP	Crestwood Equity Partners LP	
CCLP	CSI Compressco Partners LP	
DCP	DCP Midstream, LP	
DKL	Delek Logistics Partners, LP	
DM	Dominion Energy Midstream Partners, LP	
ENBL	Enable Midstream Partners, L.P.	
EEQ	Enbridge Energy Management LLC	1
EEP	Enbridge Energy Partners, L.P.	
ETP	Energy Transfer Equity, L.P.	
ETE	Energy Transfer Partners, L.P.	
ENLK	EnLink Midstream, LLC	
ENLC	EnLink Midstream Partners, LP	
EPD	Enterprise Products Partners L.P.	
EQGP	EQT GP Holdings, LP	
EQM	EQT Midstream Partners, LP	
GEL	Genesis Energy, L.P.	
HESM	Hess Midstream Partners LP	
HEP	Holly Energy Partners, L.P.	
MMP	Magellan Midstream Partners, L.P.	
MMLP	Martin Midstream Partners, L.P.	
MPLX	MPLX LP	
NBLX	Noble Midstream Partners LP	

NS	NuStar Energy, L.P.	
NSH	NuStar GP Holdings, LLC	
OMP	Oasis Midstream Partners LP	
PBFX	PBF Logistics LP	
PSXP	Phillips 66 Partners LP	
PAA	Plains All American Pipeline, L.P.	
PAGP	Plains GP Holdings, LP	1
RMP	Rice Midstream Partners LP	
SNMP	Sanchez Midstream Partners LP	
SHLX	Shell Midstream Partners, L.P.	
SXE	Southcross Energy Partners, L.P.	
SEP	Spectra Energy Partners	
SMLP	Summit Midstream Partners LP	
TEGP	Tallgrass Energy GP, LP	
TEP	Tallgrass Energy Partners, LP	
TCP	TC Pipelines, L.P.	
TLP	TransMontaigne Partners, L.P.	
USAC	USA Compression Partners, LP	
USDP	USD Partners LP	
VLP	Valero Energy Partners LP	
WGP	Western Gas Equity Partners, LP	
WES	Western Gas Partners, L.P.	
WPZ	Williams Partners L.P.	
Natural Resources - Oil and Gas - Marine Transportation		
CPLP	Capital Product Partners L.P.	2
DLNG	Dynagas LNG Partners LP	2
GLOP	GasLog Partners LP	2
GMLP	Golar LNG Partners LP	2
HMLP	Hoegh LNG Partners LP	2
KNOP	KNOT Offshore Partners LP	2
NMM	Navios MaritimePartners L.P.	2
NAP	Navios Maritime Midstream Partners L.P.	2
TGP	Teekay LNG Partners L.P.	
TOO	Teekay Offshore Partners L.P.	2
Natural Resources - Oil and Gas: Upstream (exploration & production; mineral and royalty interest)		
ATLS	Atlas Energy Group, LLC	
BSM	Black Stone Minerals, L.P.	
BBEPQ	BreitBurn Energy Partners L.P.	
DMLP	Dorchester Minerals, L.P.	
EVEP	EV Energy Partners, L.P.	
KRP	Kimbell Royalty Partners, LP	
LGCY	Legacy Reserves, L.P.	

MCEP Mid-Con Energy Partners, LP

VNOM Viper Energy Partners LP

Natural Resources - Oil and Gas: Oilfield Services

CELP Cypress Energy Partners, L.P.

SDLP Seadrill Partners LLC

Natural Resources - Oil and Gas:

Downstream (refining, marketing, wholesale distribution, other than propane)

ALDW Alon USA Partners, LP

CLMT Calumet Specialty Products Partners, L.P.

CAPL CrossAmerica Partners LP

CVRR CVR Refining, LP

GLP Global Partners LP

SRLP Sprague Resources LP

SUN Sunoco LP

WLKP Westlake Chemical Partners LP

Natural Resources - Oil and Gas: Propane

APU AmeriGas Partners, L.P.

FGP Ferrellgas Partners, L.P.

NGL NGL Energy Partners LP

SPH Suburban Propane Partners LP

Natural Resources - Coal

ARLP Alliance Resource Partners, L.P.

AHGP Alliance Holdings GP, L.P.

CCR CONSOL Coal Resources LP

FELP Foresight Energy LP

NRP Natural Resource Partners, L.P.

RHNO Rhino Resource Partners LP

WMLP Westmoreland Resource Partners, LP

Natural Resources - Other

CINR Ciner Resources LP

UAN CVR Partners, LP

EMES Emerge Energy Services LP

EVA Enviva Partners, LP

GPP Green Plains Partners LP

HCLP Hi-Crush Partners LP

OCIP OCI Partners LP

POPE Pope Resources

SXCP SunCoke Energy Partners, L.P.

TNH Terra Nitrogen Company, L.P.

Real Estate Properties

BPY Brookfield Property Partners L.P.

LMRK Landmark Infrastructure Partners LP

NEN New England Realty Associates, L.P.

STON	StoneMor Partners, L.P.
Investment / Financial	
AB	Alliance Bernstein, L.P.
ATAX	America First Multifamily Investors, L.P.
APO	Apollo Global Management LLC
ARES	Ares Management, L.P.
BX	The Blackstone Group L.P.
CG	The Carlyle Group L.P.
CODI	Compass Diversified Holdings LLC
EFC	Ellington Financial LLC
IEP	Icahn Enterprises, L.P.
JMP	JMP Group LLC
KKR	KKR & Co L.P.
OAK	Oaktree Capital Management LLC
OZM	Och-Ziff Capital Management LLC
SPLP	Steel Partners Holdings L.P.
Other Businesses	
BIP	Brookfield Infrastructure Partners, L.P.
BEP	Brookfield Renewable Energy Partners L.P.
FUN	Cedar Fair, L.P.
NNUTU	Royal Hawaiian Orchards, L.P.
MLP Funds	
AMZ	Alerian MLP Index
AMZX	Alerian MLP Index
AMZI	Alerian MLP Infrastructure Index
AMZIX	Alerian MLP Infrastructure Index
AMLI	Alerian Large Cap Index
AMLIX	Alerian Large Cap Index
AMMI	Alerian Mid Cap Index
AMMIX	Alerian Mid Cap Index
AMSI	Alerian Small Cap Index
AMSIX	Alerian Small Cap Index
AMEI	Alerian Energy Infrastructure Index
AMEIX	Alerian Energy Infrastructure Index
CITIMLP	Citigroup MLP Index
CITIMLPT	Citigroup MLP Index
MLPX	Cushing 30 MLP Index
SPMLP	S&P MLP Index
SPMLPT	S&P MLP Index
WCHWMLPT	Wells Fargo MLP Index
MLPXEPX	Wells Fargo MLP Ex-Energy Index
MLPXEPX	Wells Fargo MLP Ex-Energy Index

- 1 MLP general partner or other affiliates which, although organized as an MLP, has elected to be taxed a corporation. Investors will receive a form 1099.
  
- 2 Organized and headquartered outside the U.S. Although organized as a partnership, it has elected to be taxed as a corporation in the U.S. (has no U.S. income) and will furnish 1099s rather than K-1s. Some income will be treated as a currently taxable dividend, some as a return of capital.

*Source:* Adapted from the MLP Association publication, updated January 30, 2018

VITA

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