TAX RECEIVABLE AGREEMENTS IN INITIAL PUBLIC OFFERINGS:

AN ANALYSIS OF THE INNOVATION INCORPORATED

IN IPO AGREEMENTS

by

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Abstract

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A Tax Receivable Agreement (TRA) is a binding commitment between a newly public firm and the firm's founders to include a tax-sharing arrangement, obligating the IPO firm to make annual cash payments to the pre-IPO owners. The opportunity for shared tax benefits arises when the pre-IPO owners sell equity and achieve a step-up in basis of assets for the IPO firm. The newly created tax assets and the prior existing tax assets can offset future taxable income at ordinary corporate tax rates. This tax-sharing arrangement will typically provide for payments of 85 percent of the tax savings. This type of "Supercharged IPO" provides monetary returns to the founders or the pre-IPO owners for years following the IPO transaction.

An analysis of this, relatively new, financial tool is a timely discussion for researchers, policymakers, investors, and entrepreneurs. With the recent focus on the IPO market, as evidenced by the Jobs ACT of 2012 and the current discussion of tax reform by the U.S. Congress, the inclusion of a tax receivable agreement in an initial public offering and the implications of this agreement for financial reporting warrant empirical analysis.

This study makes a contribution to the literature by identifying features and characteristics of IPO firms that include TRAs. I empirically test the difference between

the offer prices and the first-day closing prices to evaluate the level of information asymmetry in IPO firms and the effect of TRAs on this asymmetry. In addition, I examine the market perception of various components of financial reporting linked to TRA firms in relation to stock prices. Using the first-day closing prices, stock prices at the end of the quarter of the initial offerings, end of year one and end of year two following the initial offerings, I evaluate the market perception of the value of the TRAs and the specific accounts that report the deferred tax assets and the obligations for payments to the pre-IPO owners.

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Chapter 1

Introduction

Typically, an initial public offering (IPO) is a non-taxable event. However, since 2004, some IPOs have incorporated Tax Receivable Agreements. These Tax Receivable Agreements have changed the taxable nature of the IPOs. A "Tax Receivable Agreement" (TRA) is a contract between the pre-IPO owners and the new IPO owners to share expected tax savings for specific items that reduce future tax liabilities. Those tax savings may come from ordinary deductions for tax purposes, such as depreciation, amortization of goodwill, or other intangible assets, or from deductions of net operating loss carry-forwards. In an IPO with a TRA, the structure of the IPO is such that a sale of assets creates a taxable event for the pre-IPO owner(s), typically the firm's founder(s). However, the opportunity for tax arbitrage in an IPO transaction including a TRA occurs when the tax paid by the seller is at preferential capital gains rates (for the incremental value over the seller's basis), while the purchaser gets the benefit of a step-up in basis of depreciable assets and the benefit of the creation of goodwill in the transaction, both benefits provide tax savings at (higher) ordinary corporate tax rates.

One such transaction is the case of Blackstone Partners and Blackstone Group, LP. In June of 2007, Blackstone Partners sold assets to Blackstone Group, LP. The transaction resulted in approximately $359 million in tax at capital gains rates (15 percent preferential rates) for Blackstone Partners. The transaction included a sale of assets with a $876 million step-up in basis of intangible assets/contractual rights and a step-up in basis of $1,517 million of goodwill, amortized over 15 years for tax purposes. Blackstone Group, LP incorporated a TRA into its IPO. Figure 1 shows the transaction between the private entity, Blackstone Partners, and the IPO entity, Blackstone Group, LP.

*** Insert Figure 1 about here ***

The future payments to the founders provided by the 85 percent in tax savings through amortization are approximately $530 million (the present value of the 85 percent in tax savings comes from the ordinary future deductions of $2,393 million at an estimated 35 percent corporate tax rate). The difference between the estimated $359 million paid in taxes at the inception of the arrangement and the present value of tax receivable payments over time could result in a net tax savings for the founders of around $170 million over the years following the IPO. Figure 2 shows the net projected payouts calculated at present value amounts, assuming all years resulted in realized tax savings at a constant tax rate.

*** Insert Figure 2 about here ***

This expected profit from tax arbitrage exceeds the transaction costs and allows the founders to benefit from the difference in rate structures of the tax code. Over time, and with continued profitability of the IPO firm, the founders can realize substantial gains by incorporating the tax planning strategy of a TRA into the initial offering.

Since the innovation of the TRA in 2004, this type of tax savings sharing agreement is part of some well-known IPOs. For example, one of the world's leading independent financial advisory and asset management firms, Lazard, Ltd, incorporated a TRA into its IPO in 2005. Spirit Airlines Inc. went public in 2006 and included a TRA in its IPO. Virgin Mobile's initial offering in 2007, Graham Packaging Inc. in 2010, Berry Plastics Group in 2012, and Oaktree Capital Group initial offering in 2012, all included TRAs.

The Blackstone transaction, between two closely tied firms, is an example of a highly publicized TRA transaction that highlights the potential for the pre-IPO owners to benefit from tax arbitrage. But the opportunity for tax arbitrage may not be the only or

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even the primary driving force behind the inclusion of a TRA. The value of the TRA items comes from tax attributes that firms can only realize through future tax reductions. This tax-savings agreement provides a method to pay the pre-IPO owners for these tax attributes as they become actual dollars of values in reduced taxes.

A TRA is a part of the initial documents filed with the SEC prior to the approval for the initial offering. Normally, a firm will discuss its strategies and options with its legal and accounting advisors long before it decides to complete an IPO and to include a TRA. Each firm's auditors will approve the TRA well in advance of the initial offering. The TRA is, therefore, a negotiating tool; it is a part of the strategy to add value to the initial offering.[1]

To develop a basis for understanding the type of firms which include a TRA and to develop the theory to support the inclusion of a TRA I analyze the differences in some basic accounting numbers and financial ratios for this subset of IPO firms. I find evidence[2] that the TRA firms tend to be larger than the non-TRA firms, with higher levels of total assets, goodwill, and deferred tax assets. The TRA firms also have higher debt-to-assets ratio and greater Return on Equity than the full sample of IPO firms for the sample period.

Most TRA documents included with the initial offerings define an 85 percent tax sharing agreement: Most IPO entities will pay the founders 85 percent of the tax savings

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[1] I want to thank two practitioners from one of the Big Four accounting firms who took the time to have a discussion with me regarding tax receivable agreements. The Partner and Member of the Transaction Advisory Services were clear that their comments regarding TRAs were personal opinion and not the express opinion of the Firm. Their insights from a practical business viewpoint were very beneficial to the development of hypotheses. Their time and commitment to the advancement of knowledge through articles they have published in the area of corporate taxation and involvement in professional organizations is to be commended. Their contribution to research at UTA does not go unnoticed. (Interview notes on file with author.)
[2] Statistical tests of differences (t-tests and nonparametric Wilcoxon Mann Whitney tests) are reported in Table 4.

from some specifically defined tax attribute items. Under such an agreement, payments are due when the IPO entity realizes actual tax savings from the TRA items. The IPO entity determines a pro forma tax liability for the specific items that are part of the TRA and later determines the amount of actual tax savings made possible by the TRA features. The Tax Receivable (to the founders) is a liability to the IPO entity (TRA Payable) and is equal to a stated percentage of the realized incremental tax savings due to the TRA items.

The recent innovation that is a TRA includes features that are potentially beneficial to all parties involved: the founders, the firm, and the market. Potential benefits to the founders include an on-going stream of payments, even after the IPO completion date, which can result in greater profits realized for the transfer of an ownership interest. Indeed, the IPO entity pays a percentage of the tax savings directly to the founders through the contractual obligation of the TRA. Potential benefits to all parties include the possibility of less information asymmetry. Since the IPO entity completes a purchase of assets, the transaction includes a step-up in basis of the business assets to fair market value. Therefore, because the financial reports of the IPO entity will reflect market value, uncertainty related to price discovery in the IPO should be reduced. The step-up in basis provides a benefit to the firm through additional tax deductions, like depreciation or amortization. These ordinary deductions reduce the firm's tax liability, allowing the firm to retain more of the profits and to provide a benefit to the shareholders.

With the opportunity for tax arbitrage and the obligation for an ongoing stream of payments to founders for years following the IPO, the motivation for incorporating a TRA into an initial offering has drawn criticism. Is this innovation a method for founders to receive value for deferred tax assets? Does the step-up in basis of assets provide information regarding firm value and reduce information asymmetry? Does the TRA

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exploit investors interested in the IPO market or help them identify a firm that is more likely to be profitable?

To investigate the incentives for including a TRA in an initial offering, I will use a model developed by Fleischer and Staudt (2013). In this model, a dummy variable for the TRA identifier becomes the dependent variable to analyze the correlation between the inclusion of the TRA and the variables identified as possible incentives for this financial innovation. Chapter 2 discusses the theories behind those possible incentives.

On the first day of trading, the commonly occurring underpricing highlights the uncertainty about the firm value in the initial offering. To empirically examine the information asymmetry between TRA firms and other IPO firms, I develop a model following Leuz (2003) to analyze the absolute value of the difference between offer price and first-day closing price. I expect to find less of a difference for the TRA firms. Less variation in price on the first day of trading for TRAs firms could be an indication of less information asymmetry since these firms complete a sale of assets and experience a step-up in basis to fair market value through the TRA transactions.

The financial statements of the TRA IPO firms include information regarding those agreements, including an increase in deferred tax assets (DTA) and the obligation related to the expected payouts to the pre-IPO owners. To determine whether the market perceives those deferred tax assets to be assets with value and those offsetting TRA obligations to be liabilities, I use a levels model following Ohlson (1995). If the market perceives a DTA to be an asset, the coefficient on this variable, which represents an account separately stated on a firm's balance sheet, will be positive and significant. A negative and significant coefficient for the TRA Payable will indicate that the market understands this account to be an obligation for payment in the future. However, if the market, while perceiving the DTA as an asset, does not recognize the TRA Payable as

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an obligation, the pre-IPO owners could be extracting additional rents from the firm at the detriment to the new IPO shareholders.

To my knowledge, this is the first study to analyze tax receivable agreements in initial public offerings from an accounting and financial reporting perspective. This study makes a contribution to the ongoing discussion of the current IPO market environment, particularly as it relates to financial reporting for IPO firms that include TRAs. The effect of innovation on financial reporting and the market-perceived value of tax assets and TRA obligations are of interest to researchers, policy makers, and investors. This information may also be useful to entrepreneurs who are pondering the use of TRAs when planning for future public offerings.

The organization of the paper is as follows: Chapter 2 develops the hypotheses and offers the motivation of the paper; Chapter 3 describes the data selection and the methodology; Chapter 4 presents the results; and Chapter 5 concludes the paper.

Chapter 2

Motivation, Theory, and Hypotheses Development

Tax Receivable Agreements (TRAs)

Innovation happens in response to a challenge or an opportunity. The TRA is a tool that can generate value in an IPO firm in excess of the value generated in a traditional IPO sans-TRA. Is this financial innovation a method to resolve a problem or an opportunity for founders to extract more funds from the IPO entity?

A tax receivable agreement was first included in an initial offering as early as 1993 (Fleischer and Staudt 2013). However, the incorporation of TRAs into initial public offerings only became popular much later, in 2007, when the IPO market was experiencing low numbers of entering firms. Gao, Ritter, and Zhu (2012) report an average of 310 IPOs annually between 1980 and 2000. This average fell to only 99 IPOs per year between 2001 and 2011. The IPO market registered only 62 IPOs in 2003 and only 21 in 2008, a record low. Even though the current business environment and state of the economy have been the topics of much discussion and debate amongst researchers, particularly following the financial crisis of 2007-2008, one area of concern remains the number of companies that complete an IPO (Gao, Ritter and Zhu 2012).

*** Insert Figure 3 about here ***

As shown in Figure 3, the number of IPOs in the United States has not recovered the 2001 market crash. The greatest number of completed IPOs in the U.S. market over the past three decades was 610 in 1996 and the lowest point was during the financial crisis of 2008 (21 IPOs). Therefore, the desire to revive the IPO market is a timely goal, and the debate about the changes in the business environment needed to foster the IPO market, a timely discussion. In fact, the floundering number of IPOs concerned the U.S.

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government so much that, on April 5, 2012, the government passed a law to encourage the growth of the small business sector. The government designed the Jumpstart Our Business Startups Act (JOBS Act 2012) to relax regulations on small businesses so that more firms would attempt to become public and therefore be able to obtain the funding needed for growth and development. However, whether the JOBS Act made a difference in the growth of the small business sector is a debate for future research (Myles 2013, Levin et al. 2013).

The problems of the IPO market in the United States have been more than just the dip during the "The Great Recession" starting in late 2007. The market crash of 2001 and the financial scandals that came to light afterward (Enron in 2001 and Worldcom in 2002) were also a drain on the market. The market did experience an upward trend between 2004 and 2007, yet the IPO market did not follow and has remained sluggish.

In a working paper, Gao, Ritter and Zhu (2012) analyze the number of IPOs between 1980 and 2011, differentiating between small firms and large firms, where large firms were firms with sales greater than $50 million in the pre-IPO's last 12-month period. The most distinguishing feature of the two subgroups was the average number of IPOs; for the small firms, that number dropped by more than 80 percent to an average of only 29 per year during the later period. The authors suggest that the evidence shows a fundamental change in the economy and the IPO markets. They posit that small firms are seeking economies of scale by merging with or selling to a larger firm in the same or related industry. Their theory suggests that the IPO market is not necessarily broken but has instead undergone a structural shift; therefore, regulatory changes are unlikely to bring the market back to prior levels. If this theory holds true, the JOBS Act of 2012 will have little effect on the recovery of the IPO market.

The JOBS Act of 2012 provides funding opportunities for small businesses through crowd funding platforms like Kickstarter, which could encourage entrepreneurial business development. Because of these funding alternatives, the number of start-up businesses may increase without an increase in the number of IPOs. Completed IPOs is not necessarily an indication of the strength of the economy; although, IPO firms do have an important place in the public market. For investors, IPOs can provide greater returns considering that IPO underpricing is a common feature of initial offerings[3]. Investors seeking an opportunity to make returns above average or to choose an investment with high growth potential will frequently look to the IPO market.

Figure 4 shows a graph of the percentage of IPOs that include TRAs. Between 2004 and 2006, less than 1 percent of IPOs included TRAs. In 2007, the percentage of IPOs that included TRAs was 3.21 percent (9 out of 280). The percentage rose to 6.35 percent in 2009[4] (4 out of 63), then up to 6.76 percent in 2012 (10 out of 148). In 2013, IPO activity improved with 222 initial public offerings, 12 of which included TRAs. However, this number is still below the average of 310 annual IPOs recorded between 1980 and 2000.

*** Insert Figure 4 about here ***

Fleischer and Staudt (2013) find evidence that 7 percent more firms incorporate TRAs into their IPOs during periods of economic decline; whereas, only 4 percent more

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[3] The valuation and pricing of IPOs has generated a stream of research to analyze the determinants and factors of the process. Since there is not a prior market value established pre-IPO, an initial offering is part of the price discovery process for the stock and the market perceived value of the firm. Frequently the initial price of an IPO is set at a value below the true market value. The theory of information asymmetry in the IPO underpricing phenomenon continues to be an interesting area of research and debate (Rock 1986, Ibbotson, et al. 1988, Benveniste and Spindt 1989, Booth 1996,, Ritter 2011, Roosenboom 2012, Palmucci 2012).

[4] The Great Recession began December 2007 and ended June 2009. During 2008, there were only 50 initial offerings, one of these included a TRA. There were 63 IPOs in 2009, 47 of these were in the last half of the year after the end of The Great Recession.

firms incorporate TRAs to their IPOs during periods of economic growth. This suggests

that TRAs are financial innovations created to answer the challenges of tough business

environments and could provide incentives to complete IPOs during periods less likely to

foster public offerings.

For example, Shah (1996) examines financial innovations in the form of complex

convertible securities in the United Kingdom between 1987 and 1990. During this period,

professionals (i.e., attorneys and accountants) worked together to create financial

instruments to increase profits and reduce tax liabilities. Attorneys devised and reviewed

plans to make sure the financial instruments complied with the law, and accountants

reviewed them to make sure they complied with financial reporting and tax rules.

Auditors' pre-approval ensured that the innovative financial structure would pass audit

approval, and prior revenue clearance from the Inland Revenue validated the structure in

the early stages. In addition, Shah (1996) notes that changes to regulations are slow,

and, therefore, innovative structures benefit from a small window of opportunity during

which tax and law professionals can develop and market them prior to any official

changes in the regulations for financial reporting. Firms are willing to take advantage of

innovative structures during these periods. The cost paid to the professionals for advice

and compliance is only a small part of the gains realized by implementing those

innovations (Shah 1996).

When looking at TRAs as innovative financial instruments, firms that spend the

resources to incorporate TRAs into their initial offerings are expecting a return on their

investment. Has the struggling IPO market provided a "window of opportunity" for this

type of financial innovation? The decision to go public and the market timing are unique

considerations to firms entering the IPO market. Each new offering adds to the number

of alternatives available for investors yet is not necessarily an indication of new business

growth. Loughran and Ritter (2004) report that the average age of the firms completing an initial public offering was about 7 years in the 1980s, 8 years in the 1990s, 5 years only during the internet bubble of 1999 and 2000, and 12 years on average in the post-bubble period[5]. Normally, growth in the private sectors occurs long before the IPO activities affect the public markets.

In the years prior to an initial offering, a firm can experience various business transactions that may result in differences in reporting for financial purposes and tax purposes. Temporary differences can result in deferred tax issues, which can create items or tax attributes that can affect the tax liability in future years. Examples include product warranty liabilities; bad-debt expenses using an allowance for financial statement reporting and direct write-off for tax purposes; stock-based compensation; unrealized holding losses for GAAP and fair value option; estimated liabilities related to discontinued operations or restructuring; or litigation accruals; just to name a few. The firm only realizes the value of these "tax attributes" in future years as the firm produces taxable income. The ability to realize the future benefit of a reduction in tax liability also depends on the tax law at the time of the filing of the tax return. Changes in tax law can reduce or negate tax attributes carried forward. Therefore, a pre-IPO owner would reasonably like to be paid for these tax attributes, and a buyer would reasonably be reluctant to pay for a future benefit that might not materialize.

Decision to Go Public

Several different factors encourage firms to move from the realm of private equity to that of public market. A firm might choose to go public to raise equity capital to finance

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[5] The data used by Loughran and Ritter (2004) was 1980 to 2003. The post bubble period included in their analysis was 2001 to 2003.

growth, reduce debt, acquire funds for investments, or acquire funds for mergers and acquisitions. The desire to create marketability, to diversify risk, or to provide an exit strategy for the founders may motivate the decision[6] to go public. Currently, no theory suggests that TRAs themselves are motivation to take a company public. However, once firms decide to move toward public offerings, a growing number of them incorporate TRAs.

Pagano, Panetta and Zingales (1998), studying a database of 69 private Italian firms, analyze the determinants of IPOs. They find that the likelihood of going public increases with the firm size and the industry's market-to-book ratio.

A study by Mayur and Kumar (2013), including 521 firms that went public in India between 1997 and 2007, identify size, higher sales growth, and higher profitability as determinants. The firms that went public were typically younger and riskier than the firms that remained private. They find evidence that firms go public to finance growth and investments, diversify risks to the founders, rebalance the capital structure, and bring down their borrowing rates.

Underwriters encourage firms to go public when valuations turn out to be higher than expected, and they discourage initial offerings when valuations turn out to be lower than expected. Ritter and Welch (2002) suggest that market conditions drive entrepreneurs less than their own internal sense of their firm's value.

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[6] Prior research has addressed the questions of why firms choose to go public (Ritter and Welch 2002, Chemmanur et al. 2010, Ritter 2011) and the characteristics of IPO firms (Pagano, Panetta and Zingales 1998, Mayur and Kumar 2013). The desire to go public may be driven by short term goals to finance growth and investments, or a longer term motive to create a public market for their shares so that founders and shareholders can more easily convert wealth to cash at a future date (Ritter and Welch 2002, Ritter 2011). Founding shareholders may also be motivated by the desire to have a publically traded stock which helps to define a market value for stock-financed acquisitions (Ritter 2011).

Indeed, at the initial offering date, information spreads into the market regarding the marketability of the firm, and, consequently, a higher price indicates a higher value than first estimated. This higher price in the secondary market sends a positive signal to investors. A lower price subsequent to the initial offering could be an indication that the initial purchasers have overpaid for the IPO stock. However, the conditions of the market temper the equity issue decision. For seasoned equity offerings, firms may postpone an equity issue if they believe the shares are undervalued. Underpricing is common in initial offerings yet can be the deciding factor to delay an equity offering to access the public markets in seasoned offerings. A market timing theory developed by Lucas and McDonald (1990) suggests that firms delay equity issue when they believe their stock is undervalued. Equity issues on average are more likely when market conditions are bullish.

The market timing theory of information spillovers suggests that firms follow signals from the market to complete initial offerings. Firms will delay equity issues during periods when there are fewer good quality firms who issue and complete equity issues when higher prices signal an increase in growth opportunities (Choe, Masulis and Nanda 1993). Lerner (1994) analyzes a sample of 350 privately held venture-backed firms and finds that venture capitalists take firms public at market peaks and rely on private financing when valuations are lower. Fleisher and Staudt (2013) find evidence that firms incorporate TRAs during periods of contracting economies. Does this confounding evidence indicate that TRAs are a response to a floundering IPO market or a way to generate future payments to the founders?

Dance (2007) suggests that TRAs are used to compensate sellers of partnership interests for the tax benefits associated with the entity. Assuming the market does not understand well nor price well the value of the tax assets, TRAs allow the founders to

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receive compensation for those tax assets. Over half (678 or 55.98 percent) of all IPO firms in my sample period include deferred tax assets in the year prior to the initial offering. These temporary differences between book income and taxable income result in the need to record a deferred tax amount. Deferred tax assets include the estimated future tax benefit of accounting for such things as product warranties, allowance for bad debt, fair value reporting for stock-based compensation, or unrealized holding losses. These types of temporary differences between book income and taxable income will reverse over time. Deferred tax assets indicate an amount that firms will use in a future year to offset or reduce taxable income (as opposed to deferred tax liabilities, which will increase taxable income in future periods). Theory suggests that the market does not understand those deferred tax items and, therefore, is unwilling to pay for these future tax assets. Including TRAs into IPOs allows pre-IPO owners to receive payment for tax attributes which exist firm prior to the initial offerings.

In fact, the sellers, the pre-IPO owners, will incur a tax liability at the time of the transaction, but the TRAs will compensate them for the tax attributes in the years following the completion of the offerings. The tax savings realized by the IPO firms because of the completed sale transaction (for example, the depreciation and amortization of assets "stepped-up" to market value or the amortization on any goodwill created) will determine the subsequent payments. Of course, these on-going payments are only possible when the IPO firms realize an actual tax savings, i.e., the firms must have taxable income in future years to realize tax benefits from the ordinary business deductions.

Appendix C provides an example of a TRA document. Graham Packaging Company Inc. completed an IPO with a TRA on February 10, 2010. The agreement included two separate obligations: One to the Graham Family (the founders) for the tax

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savings realized from the step-up in basis of assets and the other to the existing

stockholders for the tax savings realized from the utilization of net operating loss carry

forwards. An excerpt from the Form S-1 registration statement for Graham Packaging

Co, Inc. (shown in Appendix C) states:

> We will enter into an income tax receivable agreement with the Graham Family that will provide for the payment by us to the Graham Family of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax that we actually realize (or are deemed to realize in the case of an early termination payment by us or a change of control as discussed below) as a result of these increases in tax basis and of certain other tax benefits related to our entering into the income tax receivable agreement, including tax benefits attributable to payments under the income tax receivable agreement. We will also enter into an income tax receivable agreement with our existing stockholders (i.e. Blackstone, management and other investors) that will provide for the payment by us to such owners of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax that we actually realize (or are deemed to realize in the case of an early termination by us or a change of control as discussed below) as a result of (i) the utilization of our net operating losses attributable to periods prior to this offering, and (ii) any increase to the tax basis of the assets of Graham Packaging Holdings Company relating to our acquisition of 85% of Graham Packaging Holdings Company on February 2, 1998 and certain other tax benefits related to our entering into the income tax receivable agreement, including tax benefits attributable to payments under the income tax receivable agreement.

The arrangement related to tax savings provided in a TRA can include

deductions such as future depreciation on the step-up in basis of tangible assets,

amortization of intangible assets, or future reductions in taxable income derived from net

operating tax loss carry forwards. These items, which result in the reduction of future tax

liability, are the "tax attributes[7]." The Internal Revenue Service (IRS) describes tax

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[7] Practioners (such as Paul and Sabbah 2013) and professionals in the field (see Footnote 1) refer to the TRA items as "tax attributes".   Various SEC filings for TRA firms such as FXCM, Inc and Virgin Mobile USA for example, also refer to the TRA items as "tax attributes".

attributes[8] as certain credits, losses, and basis of assets that result in a reduction of a future tax liability.

Tax Arbitrage in Initial Public Offerings That Use Tax Receivable Agreements

In 2013, Fleischer and Staudt describe tax receivable agreements and find that the innovation results in tax planning strategies that save the owner-founders and the public investors substantial amounts of money in tax dollars. Fleischer and Staudt (2013) find that firms using TRAs are typically organized as flow through entities for tax purposes. This allows for special treatment of capital gains, with preferential lower tax rates on the initial sale (15 percent for the years during the sample period) and tax savings at ordinary corporate rates (up to an effective federal rate of 35 percent plus taxes imposed by the state) for the determination of subsequent payments related to the tax receivable agreements. The tax treatment of the payments received in years following the IPOs requires a tax planning strategy that achieves a tax at the preferential capital gains rates rather than at the ordinary income tax rates. The subsequent TRA payments would be similar to contingency payments or the earn-out provisions in which part of the purchase price is paid in years following the sale as specific conditions are met. When the full amount of the sale price is known, it is reported as an installment sale for tax purposes[9], and the associated tax is due at current capital gains rates for the year in which the payments are received. A TRA adds to the complexity of the sale, and the

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[8] The IRS describes "tax attributes" in various regulations by listing examples of items that reduce future tax liabilities. Examples include Reg SS1.108-4 Election to reduce basis of depreciable property under Section 108(b)(5) of the Internal Revenue Code. Reg SS1.108-7 Reduction of attributes; Reg SS1.197-2 Amortization of goodwill and certain other intangibles.

[9] The taxable portion of the sale price is determined at the time of the original sale and subject to capital gains rates. Each subsequent year, as income is realized by the payments received, the tax is calculated at current year tax rates. The American Taxpayer Relief Act of 2012 included a change in the rate structure for Capital Gains to increase the maximum rate on capital gains from 15% to 20%.

full price for the transaction is simply unknown at the date of ownership transfer. No standard accounting practice exists to handle this specific type of transaction.

The potential for tax arbitrage is available only when the transaction includes amounts taxed using different rate structures. Unfortunately, the type of entity and the tax structure of the pre-IPO firm are not observable. If the pre-IPO firm were a flow through entity, the preferential capital gains rates would apply. An entity taxed as a flow through entity could be a Partnership, a Subchapter S Corporation, or a Limited Liability Company (LLC). An LLC with more than one member is by default taxed as a partnership, but the entity could elect to be taxed as a corporation. The ownership interest in the pre-IPO entity could be held individually or through another entity that might or might not be a flow through entity. My ability to test the theory related to tax arbitrage is limited because of the private nature of tax return filings in non-publically traded entities.

The potential for tax arbitrage, resulting from the cash payments to founders in years following an initial public offering, can cause some speculation about the actual benefits to the IPO market environment. Does the positioning that allows for a step-up in basis of the assets provide additional information to the market regarding the value of the underlying assets and business operations of the private entity? Could this financial reporting adjusted to fair values help resolve some of the uncertainty in the information asymmetry for setting a more accurate value for the initial offering?

In June 2007, Congress introduced a bill[10] to address the issue of tax arbitrage. The Baucus-Grassley "Blackstone Bill," related to the Blackstone Group's IPO, which

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[10] The Library of Congress, 110th Congress (2007-2008) H.R.2834. U.S. Senators Max Baucus and Chuck Grassley introduced the "Blackstone Bill" on June 22, 2007 during the 1st session of the 110th Congress, the legislation proposed Sec. 710.(b)(1) Dispositions of Partnership Interests: Gain – Any gain on the disposition of an investment services partnership interest shall be treated

included a TRA, proposed a change to the tax law to effectively tax the sale of

partnership interest at corporate rates rather than at preferential capital gains rates

(Fleischer 2007). However, the Blackstone Bill did not pass Congress. When the

economy began a dramatic downslide by the end of the 4th quarter of 2007, the interest in

changes to tax law affecting IPOs diminished as quickly as the IPO market. During 2008,

only 50 initial public offerings occurred, and only one included a TRA. Fleischer and

Staudt (2013) report that from 2004 to 2010, companies "supercharged"[11] between 1 to

10 IPOs each year with TRAs.

Various items of financial reporting can be a part of a TRA document. The sale

of assets into an entity that will ultimately complete the IPO provides for a step-up in

basis of assets to fair market value. When the assets are tangible, the IPO operating

company will get the advantage of tax deductions through depreciation. Depending on

the asset class for depreciation, these write offs can be anywhere from 3 to 39 years into

the future. For intangible assets, the firm will have tax deductions through amortization

expense for anywhere from 5 to 40 years depending on the type.

If the firm value is greater than the sum of all the assets sold, goodwill is created,

which provides an additional asset for financial reporting. However, there is a difference

in the treatment of goodwill for financial reporting and the treatment of goodwill for tax

purposes. The Financial Accounting Standards Board (FASB) issued SFAS 142 in June

2001, which changed the accounting treatment of goodwill. Prior to SFAS 142, goodwill

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as ordinary income for the performance of services. Available at http://thomas.loc.gov/cgi-bin/query/z?c110:H.R.2834.

[11] The phrase "Supercharged IPOs" was first used by Robert Willens of Robert Willens, LLC according to an article by Amy S. Elliot in the Tax Analyst 2011. The article is available at http://perma.cc/J283-KHW2. The article notes that Robert Willens worked with Lehman Brothers for 20 years during which he presented the TRA strategy to many clients with very few incorporating the agreement into their initial offerings.

was expensed for book and tax purposes, which created a reduction in reportable income. SFAS 142 eliminated the annual amortization of goodwill and required that firms assess goodwill annually for impairment. FASB implemented this new standard concurrently with SFAS 141, Business Combinations, which eliminated the "pooling-of-interest method" of accounting for business combinations and required firms to use the "purchase method". The "pooling-of-interest method" was more widely used since it avoided the recording of goodwill and the subsequent reduction of income through the amortization of goodwill. Enacting both SFAS 141 and 142 was an attempt to mitigate the effect of the requirement to use the "purchase method" in business combinations.

Under current Generally Accepted Accounting Principles (GAAP), Goodwill is an asset which remains on the balance sheet of the financial statements with an annual evaluation to determine if there has been a decrease in value. GAAP does not allow amortization for goodwill; therefore, no annual expense is recorded. Goodwill is evaluated annually to determine if there has been a decrease in the fair market value of the asset. Any decrease is an impairment in value, and an adjustment to the financial reporting reduces the goodwill amount to the implied current market value. The goodwill impairment is reported for GAAP purposes in the year of the adjustment. There is no adjustment allowed for an increase in estimated value, only when the value falls is a write-off recorded.

A different treatment is given to goodwill for tax purposes. The amount of goodwill is written off through amortization over a 15 year period. This difference in reporting for tax provides a tax benefit annually with no change in asset value for financial reporting and, therefore, no decrease in earnings per share. For the firm, this benefit results in cash savings on taxes through an ordinary deduction with no corresponding expense for financial reporting purposes.

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The difference in treatment for book and tax purposes for the amortization of acquired goodwill is a temporary difference for deferred taxes. The amortization for tax purposes reduces the tax basis of the asset each year while the book basis remains the same, subject to an annual review for impairment. The lower tax basis of the asset creates an increasing deferred tax liability (DTL) over the life of the acquired goodwill. If an impairment adjustment is necessary for book reporting, it could decrease the DTL or convert to a DTA. The goodwill created prior to an IPO that includes a TRA creates a DTA at the inception of the agreement when the firm records an obligation to the pre-IPO owners.

The agreement to share in future tax benefits, the TRA, is consummated through the initial offering in an IPO firm. When goodwill arises following the sale of assets in the TRA transaction, it creates an obligation for payment of a portion of the tax savings (85 percent in most TRAs). In order to record this obligation, an IPO firm records an offsetting DTA. The accounting treatment is not consistent for all TRA firms. Some will record the TRA payable and DTA as offsetting amounts; some will record the TRA payable at 85 percent of the DTA and the remaining 15 percent as an increase to equity; and others will disclose the potential obligation with no change in reported assets and liabilities on the financial statements.

Another item which can produce value in a TRA is a net operating loss (NOL) carry forward. The NOL carry forward is a "tax attribute" that reduces future tax liability by offsetting taxable income by the prior net operating losses. A TRA can include a contractual arrangement between the pre-IPO owners and the IPO firm to share the future tax benefit of an NOL without a sale of assets as part of the pre-IPO deal structure. When there is a sale of assets prior to the IPO, ensuring that an NOL is allowed to be carried forward for tax purposes with the new entity requires complex planning and is

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beyond the scope of this manuscript. The NOL is only an example of the type of items in a TRA that can give rise to tax arbitrage opportunities. A typical initial public offering does not create a tax liability for the founders. Only when the founders or any of the shareholders sell their stock holdings does a taxable event occurs.

In a TRA transaction, the pre-IPO owners pay the taxes up front on the sale of assets with no guarantee that future receipts will be forthcoming from the agreement. The IPO firm must be profitable and realize a savings on actual tax due in order for the IPO firm to accrue an obligation under the TRA and pay it to the founders. Congress did not pass the Blackstone Bill in 2007. Fleischer (2007) argues that the narrow scope of the bill failed to achieve the goal of a long-term solution to the issue of consistency in the tax structure. However, the issue of fairness in the tax structure is a recurring topic of interest for policymakers.

Tax Sharing Agreements between affiliated entities are a common part of the contractual relationship between a parent and subsidiary. In many cases, the subsidiary generates taxable income that results in a tax liability to the parent entity. Through the "tax sharing" agreement, the subsidiary will make payments to the parent to provide needed funds to pay the tax liability. A major distinction between a TRA and a tax sharing agreement is that the TRA is typically between the founders of the selling entity and the new corporation. An affiliation between entities is not a requirement or a necessary condition for the contractual obligation. In tax sharing arrangements, the subsidiary who generates the reportable income will agree to make distributions or payments to the parent who is responsible for the reporting and payment of the tax liability to the taxing authority. The responsible party (parent) may only have the funds needed for the payment of tax if the subsidiary that generated the income provides the monies out of net profits.

In a TRA, the party that reports and pays tax is the IPO entity who incurs the obligation to pay the counterparties to the TRA (typically the founders). The TRA defines the specific type of items that give rise to the reduction in the tax liability (tax savings) for the corporate IPO entity. The obligation for payment becomes effective only when the entity realizes an actual tax savings. If the firm has no taxable income, there is no obligation to share tax savings because none exists.

Price Negotiation and Tax Receivable Agreements in Initial Public Offerings

In a sale transaction between two parties, a willing buyer and a willing seller are able to negotiate a price for the transaction. The agreed-upon price will account for the likelihood of realizing a future benefit on a deferred tax asset, net operating loss carry forward, or other tax attributes. If the buyer adjusts the price upward to pay the seller for the tax attributes, the buyer is taking on the risk that the firm will be profitable in future years and that the tax laws will continue to allow the benefits of the tax attributes in future years. In an IPO, the ability to negotiate the price is more limited. Incorporating a TRA into the contract provides a way for the pre-IPO owners to receive payment for the future tax benefits of the tax attributes. When the benefit of a specific tax attribute is realized, the IPO firm shares the tax savings with the pre-IPO owners through the terms of the TRA.

One of the potential motivations for incorporating a TRA into an initial public offering could be to minimize the problem of the buyers' and sellers' inability to negotiate a fair price for the tax attributes available at the time of the IPO. Through the ongoing future payments for the benefit of reduced taxes, the buyer and seller share the risk associated with the tax attributes. The TRA may help align the interest of both parties. The future success and profits of the firm become beneficial to the buyer and the seller.

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The sharing of the tax attributes reduces the tax liability of the firm while also paying the pre-IPO owners a portion of the realized tax savings.

An IPO firm with many potential shareholders (multiple buyers) is less resistant to a contractual obligation between the firm and the prior owners than a single buyer[12]. A single buyer might want to negotiate a price free from future obligations to the prior owner. In the case of an IPO where the true market price is unknown and the pressure on the offering price is downward, the TRA can provide payments for the tax attributes as the IPO firm realizes benefits.

Tax Receivable Agreement Transactions in Initial Public Offerings

In an IPO, the official Prospectus and the initial SEC filing of Form S-1 General Form for Registration of Securities under the Securities Act of 1933 disclose the inclusion of a TRA. The information provided delineates the tax attributes and states the percentage[13] for sharing the future tax benefits realized. The transaction at the inception of the agreement to record the purchase of assets at the fair market value also includes an entry to record the estimated deferred tax asset and the liability associated with the obligation under the TRA. The deferred tax asset is recorded for the estimated value of the future tax savings, and an offsetting liability (typically 85 percent) is recorded. In some firms, the balance is recorded as an increase to equity through Paid-in-Capital for the benefit to the IPO shareholders. For example, Evercore Partners, Inc report[14] the effect of the TRA as an increase in DTA of $26.2 million, an increase of $22.3 million to

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[12] See Footnote 1.

[13] All but four of the TRA firms in the sample report an 85% sharing arrangement. Three of the firms have a 90% sharing arrangement and one has a 75% arrangement.

[14] Form S-1 filed by Evercore Partners, Inc on April, 20, 2007 (p. 8).
http://www.sec.gov/Archives/edgar/data/1360901/000119312507086555/ds1.htm

the TRA payable and an increase in Paid-In-Capital of $3.9 million representing 15 percent estimated realizable benefit to the firm's shareholders.

The estimate of the obligation under the TRA and the estimated probability of realizing future tax benefits are subject to management discretion. Some firms report an increase to a liability account for the estimated obligation, and some have an offsetting valuation allowance against the DTA, which eliminates the necessity to report an obligation. For the TRA firms included in the sample, 61 percent of the firms (22 out of 36) record an obligation under the TRA. The average of the TRA Payable in relation to the deferred tax asset for these firms is 84.98 percent reported at the end of the IPO year. Unless specifically reported in the firm financial statements, the impact on DTA is unobservable.

Appendix D provides an example of the calculation of the future obligation for one of the TRA firms. The Appendix contains information regarding KKR & Co. L.P., along with details from the Form 10-K filed with the SEC for the year ended December 31, 2012. The method to compute the tax obligation under the TRA appears on pages 260-261 of the document. KKR & Co. L.P. asserts that the cash savings in income tax will be computed by comparing the actual income tax liability to the amount of such taxes that would have been due had there been no increase to the tax basis of the tangible and intangible assets.

The company further states that estimating the obligation depends on a variety of factors including the timing of exchanges, the price of the common units at the time of the exchange, the extent to which such exchanges are taxable, and the amount of tax required to be paid. The company adds that the firm expects future payments under the TRA to be "substantial" and to have a "substantial negative impact on our liquidity".

The information provided by each TRA firm may include more or less specific information and may or may not include the estimated benefit and estimated obligation under the TRA; however, all TRA firms disclose their agreement in multiple filings with the SEC, including in the 10-Q and 10-K reports. Potential investors should be well aware of the existence of an agreement and of the contractual obligations to the pre-IPO owners.

Considering the complexity of the transaction and the need for additional disclosure, a TRA provides benefits that would otherwise be unavailable. I have developed the following hypotheses to address the research questions related to the characteristics and features of firms that are more likely to incorporate TRAs.

Since the TRA transactions typically include a step-up in basis of assets, I posit the following hypothesis:

H1: Firms who choose to incorporate TRAs into their initial offering will have higher step-up "potential" of book assets over the market value of assets relative to other IPO firms.

The step-up in basis provides future deductions at ordinary tax rates and results in many TRA firms recording a deferred tax asset and offsetting the TRA obligations. There can also be existing tax attributes available prior to the initial offering that were made possible by the efforts of the pre-IPO owners. A lack of ability to negotiate the price of these preexisting tax attributes can also provide incentives to incorporate TRAs into the IPO transactions. The following hypothesis investigates the likelihood that firms will incorporate TRAs given that they have higher levels of tax attributes.

H2: Firms that choose to incorporate TRAs into their initial offering will have larger book tax assets (deferred tax assets) prior to the initial offering relative to other IPO firms.

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The larger the firm and the larger the offer size, the more difficult the negotiation process could be to adjust the negotiated price for tax attribute items. In addition, the larger the offer size, the less resistance to including TRAs that contractually binds the IPO firms to the pre-IPO owners for years in the future[15]. When there are fewer individuals involved in the negotiation for the sale of assets, it is more likely the individuals will be able to negotiate a price for the tax attribute items and avoid a long term contractual relationship to the pre-IPO owners. The TRA is a tool used to compensate the pre-IPO owners for the tax attributes as they are realized rather than paying for future tax benefits which may not materialize. Stated in the alternative, Hypothesis 3 is as follows:

H3: Firms that choose to incorporate TRAs into their initial offering will have larger offer size relative to other IPO firms.

Information Asymmetry in Initial Public Offerings

Information asymmetry is particularly vexing in the case of private firms wishing to go public. The market value of a firm prior to a public offering is an estimate at best. Stammers (2011) states, "In anticipation of some high-profile IPOs, investors should remember that price rarely equals value" (para. 1). He provides a brief explanation for three primary valuation approaches used by private companies[16]: the Asset-Based Approach in which the price is set at the value of the underlying assets less the value of liabilities; the Income Approach in which the price is set at a discounted value of the expected income; and the Market Approach in which the price is determined by using a

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[15] See Footnote 1.

[16] Robert Stammers, CFA, Director of Investor Education of CFA Institute, was the contributing author for the article published 9/16/2011 in Forbes.com, LLC. (Reference listing Stammers 2011).

multiple of similar sales of assets. In the private sector, one of the main factors that limit

the value of a firm is the lack of marketability. To determine the value as a publically

traded entity, stock-specific factors like percentage equity control, liquidity of equity

securities, and any agreements that reduce marketability must be considered. Company-

specific factors that influence the value of a firm are the lifestyle stage, size, overlap of

shareholders and management, quality of management and financial statements, tax

implications, and influence exerted by short-term investors (Stammers 2011).

A study by DeAngelo (1990) provides evidence that investment bankers'

valuation techniques include extensive use of accounting data in their working papers.

Capital market prices incorporate all public information, and accounting data is only a

small portion of this information. In corporate control transactions such as mergers,

management buyout, and leveraged recapitalization, DeAngelo (1990) finds accounting

data to be more important than previously recognized in the capital markets literature in

determining equity exchange values since the "acquisition values are neither directly

observable nor invertible from open market stock prices" (p. 98). Even though the stock

is publically traded, these types of transactions deviate from open market-stock prices

creating the need for more reliance on the accounting data.

IPO values suffer from a similar type of problem with price discovery. Prior to

active trading on a market, a firm's stock does not have a determined market price. In

this type of situation, analysis of accounting data is important when determining IPO

values. Titman and Trueman (1986) find evidence that firm value is an increasing

function of auditor quality, implying that as the auditor quality increases, the financial

reporting quality increases, and, therefore, the firm value increases. Prior research finds

evidence to support the importance of information content in financial reporting (Ball and

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Brown 1968, Beaver 1968, Kormendi and Lipe 1987, Titman and Trueman 1986, Ritter and Welch 2002).

Kim and Ritter (1999) find evidence that price-earnings multiples using forecasted earnings have more explanatory power in the determination of an IPO value than multiples of historical earnings. Valuations using accounting information improve when controlling for leverage effects and value-to-sales ratio and when adjusting for sales growth rates. Using earnings forecasts improves the accuracy substantially, with greater accuracy for older firms than younger firms. Ritter and Welch (2002) find that the accounting data are a part of the input to the valuation process, but not a reliable measure considering that the market value of a firm is based more on growth potential than historical financials.

Underpricing is a common characteristic of IPOs. Rock (1986) develops a model to study the phenomenon of the underpricing of IPOs. His theory involves a rationing approach to the number of shares issued. The model contains a probability function for receiving an allocation of shares in the offering. When the offering price is at or below an expected value, the informed investors would purchase all available shares. The uninformed investors assume that any remaining shares were passed over, and this reduces their desire to purchase the shares. This downward pressure on the offering price results in an optimal price that includes a discount.

In a study by Benveniste and Spindt (1989) on the allocation of new issues and the determination of the offer price, they state that "setting the sales price for an IPO is problematic; neither the issuing firm nor its underwriter can know precisely what the market's valuation of the stock will be" (p. 344). They show that underpricing is part of the process of price discovery for a new issue of stock. They find evidence that

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underwriters reduce underpricing through their access to investors and through their ability to gather additional information via premarket activities.

Loughran and Ritter (2004) find evidence that underpricing was 7 percent during the 1980-1989 period, increased to almost 15 period during the 1990-1998 period, and moved to 12 percent during the post-bubble period of 2001-2003. They believe that there has been a realignment of incentives and a changing issuer objective function, placing a higher importance on the analyst coverage and on the greater number of shares allocated to executives and venture capitalists.

Liu and Ritter (2011) develop a theory based on differentiated underwriting services and localized competition described as localized oligopolies. Based on a sample of IPOs from 1980 to 2008, they find that IPOs are more underpriced when they face a more concentrated underwriting market and when they have coverage from quality underwriters, those with more industry expertise, or all-star analysts. For example, the IPO firms backed by venture capitalists covered by all-star analysts were underpriced by 20 percent more than those without all-star analysts' coverage.

Underpricing in IPOs continues to exist and to attract the interest of researchers trying to explain the factors that contribute to the underpricing. Ritter (2011) refers to underpricing as an opportunity cost to a firm going public.

IPO firms that include TRAs have asset values reported at market value through the step-up in basis achieved when the founders sell to the entities that will complete the IPOs. The TRA firms have the benefit of providing more information to the market through the financial reports and, therefore, could reduce the problems associated with price discovery and perhaps reduce underpricing in an initial offering. If the underpricing phenomenon in IPO offerings is associated with information asymmetry, then less underpricing in the TRA firms could provide evidence to support the importance of

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financial reports in determining market price. Hypothesis 4 investigates this question

regarding information asymmetry for TRA firms. Stated in the alternative form:

H4: IPO firms that include TRAs have lower levels of information asymmetry as
seen by smaller differences in the offering price to first-day closing price relative to other
non-TRA IPO firms.

The step-up in basis of assets creates higher goodwill and higher deferred tax

assets in TRA IPO firms. The tax assets provide real value in the form of future tax

deductions, which create tax savings. Laux (2013) examines the association between

deferred tax assets and liabilities and future tax payments. He finds evidence that

deferred taxes do provide incremental information about future tax payments. Investors

value deferred tax assets and liabilities when the incomes or expenses giving rise to the

deferred tax assets or liabilities are included in the GAAP income before being included

in the taxable income. Guenther and Sansing (2000) examine deferred tax assets and

liabilities related to book-tax differences and find evidence that the incremental value

depends on the nature of the underlying assets or liabilities. Deferred taxes associated

with depreciation and warranty liabilities (recorded at more than the present value of their

associated future cash flows) resulted in market value of less than the recorded value.

If the deferred tax assets are not valued in the market, then the future payments

provided by the TRAs are a means to pay the founders for these assets. If, on the other

hand, the market value incorporates the deferred tax assets into the price, then the

ongoing payments after the IPOs are a means for the founders to extract additional funds

from the firms after the sale. The following hypotheses examine if the market places

value on the components related to TRAs. Hypothesis 5 investigates whether the

inclusion of a TRA affects the firm price. Stated in the alternative form:

H5: Incorporating TRAs into initial public offerings will have a negative effect on firms' prices relative to other IPO firms that do not include a TRA.

The financial statements for many IPO firms, both TRA and non-TRA firms include a deferred tax asset. It is important to establish whether the market perceives the deferred tax assets to have value. In IPO firms that include a TRA, when the agreement calls for an 85 percent sharing arrangement of the future tax benefits, 85 percent is paid out to the pre-IPO owners. Therefore, 85 percent of the deferred tax asset does not provide a future benefit to the IPO firm shareholders, but is paid to the pre-IPO owners. Only 15 percent of the deferred tax assets defined by the TRA provide a benefit to the IPO shareholders. If the shareholders understand this obligation, then the TRA payable will be negative and significant. Hypothesis 6 and 7 investigate the balance sheet accounts related to the TRA, specifically the deferred tax assets and the TRA payable obligation. Stated in the alternative form:

H6: Deferred Tax Assets will be perceived as assets of the firms and will have a positive influence on firms' prices.

H7: TRA payable obligations will be perceived as liabilities of the firms and will have a negative influence on firms' prices.

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Chapter 3

Sample Selection and Research Design

Sample

This study investigates IPOs between 2004 and 2013, with an interest in the inclusion of TRAs. I begin with the year 2004 following Fleischer and Staudt (2013) who suggest that TRAs were rare prior to 2007. Data related to the tax receivable agreements is hand collected primarily from EDGAR and LexisNexis and from other sources, such as firms' websites, when necessary to gather a more complete data sample. During the sample period, there are 1,797 IPO firms. I place no restrictions on the sample other than the necessary data for the variables of interest. There are 1,541 firms with data available in Compustat, for a grand total of 41,589 firm quarter observations. Missing information leads to the elimination of 293 firms. The final sample includes 1,248 firms as shown in Table 1.

     *** Insert Table 1 about here ***

The initial sample identifies 54 TRA firms. One of the 54 firms identified as having a TRA is eliminated from the sample because it is the result of merger and acquisition activity rather than the result of an initial public offering. The sample is reduced when the necessary data to complete the analysis is unavailable. I do not impose a minimum offer price restriction. All industry types are included in the sample. The final sample of TRA firms for analysis is 38 firms with available financial information. Table 2 reports the number of TRA firms identified by year and the reasons that the firms are not available for the empirical sample. One firm filed an initial S-1 describing a TRA, but no additional filings have been reported on the SEC Edgar system. One firm started the paperwork for an initial offering including a TRA in 2010, but delays have prohibited

the filing of necessary financial reports for analysis. Eight firms filed Form S-1 and other

documents in an attempt to complete an initial offering but withdrew for various and

untold reasons, so no IPOs were achieved for these firms. Finally, five firms completed

initial offerings including TRAs during 2013, but financial information is not available for

my empirical analysis purposes.

*** Insert Table 2 about here ***

Table 3 reports the descriptive statistics for the full sample of IPO firms at the

end of the IPO year using data from the Compustat annual database. Table 4 reports the

descriptive statistics for the subsample of IPO firms that include TRAs. Table 5 reports

the descriptive statistics for firms that do not include TRAs. The amounts reported are

values in the IPO year for firms that completed an IPO during the sample period. Firms

are dropped if they do not have the financial information needed for the empirical

analysis, leaving 1,248 firms in the sample. The descriptive statistics report additional

variables that may not have been used in the regression analysis. Therefore, the number

of observations may be less that the full sample for some of the variables reported in

Tables 3 through 5.

*** Insert Table 3 about here ***

*** Insert Table 4 about here ***

*** Insert Table 5 about here ***

The number of observations for each variable is reported in the right column.

The mean total assets for the full sample are $1,404.050 million (1,248 observations),

$5,507.680 million (38 observations) for the TRA subsample, and $1,275.180 million for

the non-TRA subsample (1,210 observations). The mean total book value of equity is

$438.399 million for the full sample, $3,094.120 million for the TRA subsample, and

$354.996 million for the non-TRA subsample.

Firms with TRAs realize a step-up in basis of assets and, therefore, adjust their book assets to fair market value at the time of the initial offering. Many firms may have a "potential" for a step-up in basis yet may not choose to include TRAs. Unfortunately, the "potential" for a step-up and the actual recorded step-up for many TRA firms are unobservable. The calculation of the potential step-up in basis is the result of the comparison of the book value of the total assets and the market value of assets. This requires an estimation of the market value of assets. Common shares outstanding are multiplied by the offer price in order to estimate the market perceived value of equity at the time of the IPO. Total liabilities are added to this market value of equity to estimate the market value of assets. To proxy for the estimated step-up in basis I use an algorithm to evaluate multiple potential values to arrive at a "best guess" for the potential step-up in basis of net assets. Appendix B provides a detailed explanation of the calculation for the estimated step-up value. This estimated value is intended to be the difference between the market value at the time of the IPO and the book value of the net assets immediately prior to the IPO. The estimated step-up value is $175.435 million for the full sample and $438.851 million for the TRA subsample.

Table 6 reports the frequency of SIC codes for the full sample and for the TRA subsample. Out of the 38 firms including TRAs, 21 are in the financial industry sector (SIC codes 6000), and 17 of these are in the 6200 Security & Commodity Brokers, Dealers, Exchanges & Services. These 17 firms account for 41.5 percent of all finance industry sector firms in the 6200 SIC code during the sample period. For the full sample of IPO firms with initial offerings between 2004 and 2013, only 3 percent (38 out of 1248) incorporated TRAs into their initial offerings. As a percentage of firms in a particular industry, the industry with the next highest percentage of TRA firms, other than the finance industry, is the mining industry with 4.2 percent (3 out of 72 firms).

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*** Insert Table 6 about here ***

Since financial firms are in a highly regulated industry and do not typically have the same types of accrual accounts, the 6000 SIC codes are typically eliminated for empirical research purposes. However, since almost one-half of the firms in the TRA sample are from the financial industry, it is important to keep these firms in my sample for analysis. I further divide my sample into financial and non-financial subsamples for additional analysis.

Differences of means tests are reported in Tables 7 through 9 to determine the characteristics of the TRA firms that are significantly different from the characteristics of other IPO firms. To minimize the problem of small sample sizes, I report results for a t-test and for a non-parametric Wilcoxon Mann-Whitney z-score. I conclude a difference of means only when both tests indicate a significant difference in means.

*** Insert Table 7 about here ***

Table 7 compares non-TRA IPO firms to the subsample of TRA only firms. The p-values are highlighted for variables that have a significantly different mean value for the two subsample groups. Only when there is significance in the t-test and in the nonparametric z-score is the variable name highlighted. As shown in Table 7, significant differences exist in many of the variables between the TRA IPO firms and the non-TRA firms. The mean value of total assets for the TRA firms is significantly higher than the mean value of total assets for the non-TRA firms. However, several TRA firms are large and skew the mean value of total assets for this small sample. For example, Interactive Brokers Group completed an IPO with a TRA in 2007 and had $34,542 million of total assets in the IPO year. KKR & Co had total assets of $36,000 million in 2010, the year it completed an IPO with a TRA. Carlyle Group had $31,567 million of total assets and Oaktree Capital Group, LLC had $43,870 million of total assets in 2012 when they

completed their IPO with a TRA. All of these large TRA IPO firms are in the financial

sector. However, compared to the largest IPO during the sample period, these TRA firms

are small. In 2010, General Motors Co completed the largest IPO in history, raising

$20.1 billion. The largest firm in the sample is ING US, Inc., with total assets of $217,123

million.

     *** Insert Table 8 about here ***

     *** Insert Table 9 about here ***

     Table 8 reports the comparison of financial firms (TRA and non-TRA firms).

Again, many significant differences in the groups indicate that the TRA firms are not the

typical IPO firms. Even among the subgroup of financial only firms, the TRA financial

firms have a significantly lower level of goodwill and a significantly higher estimated value

for potential step-up in basis of assets. The TRA financial firms have a statistically

significantly greater value of estimated step-up at $546.000 million compared to $378.895

million for the non-TRA financial. The TRA financial firms also have a much greater

value of deferred tax assets at a mean value of $213.300 compared to only $46.794 for

the non-TRA financial firms and a significantly higher level when scaled by total assets.

     Table 9 reports the comparison of non-financial firms (TRA and non-TRA firms).

The TRA firms are statistically bigger in terms of total assets and market value of equity.

The value of goodwill is statistically higher for the TRA firms, but not in relation to the size

of the firm. Deferred tax assets are statistically higher in relation to firm size. The debt to

assets ratio is also higher for the TRA firms compared to non-TRA non-Financial firms.

     Table 10 provides a list of all the variables with their description and their specific

calculations. The Compustat acronyms are included where applicable. Table 11 reports

the descriptive statistics for the variables in the regression models, and Table 12 reports

the Pearson correlation coefficients.

*** Insert Table 10 about here ***

*** Insert Table 11 about here ***

*** Insert Table 12 about here ***

Methodology and Hypotheses Testing

Features and Characteristics of IPO Firms That Include TRAs

To examine the features and characteristics of firms that include TRAs in their initial public offerings, I use a Logistic regression model following Fleischer and Staudt (2013). The IPO event is identified by quarter[17], and the quarterly financial reports immediately following the initial offering are used to provide financial data for empirical analysis. The TRA dummy variable is the dependent variable equal to one if the firm included a TRA in their IPO and equal to zero otherwise. Following Fleischer and Staudt (2013) the independent variables include a measure to proxy for the potential step-up in basis of tangible and intangible business assets. Four different measures are used in separate regressions to capture the potential for step-up of the market value of equity post-IPO less the book value immediately prior-IPO.

Fleischer and Staudt (2013) also include an independent variable to measure the net tax assets of the firm. The variable *DTA* is the value of deferred tax assets as reported on the financial statements. TLCF is the NOL carry forward disclosed in the financial reports. Alternative measures proxy this tax attribute, either *lagTLCFd or realzTLCF*. The dummy variable *lagTLCFd* is set to one if the firm reports an NOL carry forward balance prior to the IPO, zero otherwise. The dummy variable *realzTLCF* is a

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[17] See Appendix A for an explanation of the determination of IPO quarter and identification of financial period in Compustat data. The models include subscripts for time designated by "q" for quarter where appropriate.

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proxy for the potential to realize tax savings from the NOL. It is set to one if the firm reports an NOL and has positive pre-tax accounting income, zero otherwise.

In addition to the variables which proxy for the potential step-up in basis and the tax attribute assets, I include a dummy variable to indicate whether the firm is in the finance industry since so many of the TRA firms are from this industry sector (2 digits SIC codes 60 through 67). I also include offer size since the mean value of TRA firms is statistically larger than the mean value of non-TRA IPO firms. A larger offer size could be conducive to the inclusion of a TRA.

There are two variables which were included in the Fleischer and Staudt (2013) model, but omitted from my model. As discussed previously, the opportunity for tax arbitrage is not observable in all IPO firms. The private entity tax structure and the pre-IPO owner tax structure are not available. Fleischer and Staudt (2013) included a dummy variable for *TaxArbitrage* equal to one if the private entity is a partnership and equal to zero otherwise. Since I cannot determine the private entity tax structure I cannot include a variable for an accurate measure for the opportunity for tax arbitrage which can be applied to all IPO firms. Fleischer and Staudt (2013) also include a measure for *NeedlesslyComplex* equal to the number of pages in ten-page increments in the IPO public filings. The research by Fleischer and Staudt (2013) is focused on the legal aspects of the agreement and the legal complexity is an assumption they made regarding the inclusion of a TRA. However, this variable was not significant to their model.

Model 1(a) is repeated to include the four separate measures to proxy for the step-up in basis of assets. The model also includes a proxy for DTA, a proxy for the potential to realize the benefit of a TLCF, a dummy variable to indicate if the firm is in the finance sector and a measure of the firm offer size. Model 1(b) replaces the proxy for the

potential to realize the benefit of a TLCF with a dummy variable to indicate if a TLCF

exists.

Model 1(a):

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

Model 1(b):

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

Fleischer and Staudt (2013) also include a dummy variable for *Macroeconomy* to

indicate periods of economic growth or contraction and find that IPO firms are more likely

to complete an initial offering and include a TRA during periods of a contracting economy.

.   The sample period used by Fleischer and Staudt (2013) ended with May 1, 2011 and

therefore did not include the more recent periods of expanding economic growth and

increase in the number of IPO firms that include a TRA. Models 1(c) and 1(d) add the

dummy variable macroe set to 1 if the economy is expanding as defined by the National

Bureau of Economic Research (NBER) and set to 0 if the economy is in a period of

contraction.

Model 1(c):

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i +$$
$$\beta_6 macroe_i + e_i$$

Model 1(d):

$$\text{TRA} = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i +$$
$$\beta_6 macroe_i + e_i$$

Methodology for Testing Information Asymmetry

IPO firms with TRAs provide a unique sample of firms new to the market with assets more accurately priced at market value because of the sale of assets and the step-up in basis prior to the initial offering. The timing of the sale, the subsequent step-up in basis, and the initial pricing are all events that take place prior to the initial offering. Whether each event happens independently, and, if so, which one comes first, is unclear. Each event may just be a part of essentially the same transaction that occurs before the initial offering. The degree of information conveyed to the market by the actual financial reporting compared to the other market information is unclear. However, I expect to find lower levels of information asymmetry in the IPO firms that include TRAs than in other IPO firms. These lower levels of information asymmetry may be due to a greater level of information provided by the step-up in basis of assets in the financial reporting of TRA firms. It is also possible that a lower level of mispricing in TRA firms is a result of the transaction being less than an arm's-length transaction in many of the TRA firms. In either case, knowledge regarding the level of information asymmetry in IPO firms with TRAs would be of interest to market participants.

Leuz (2003) test levels of information asymmetry between firms reporting in Germany's new market using International Accounting Standards (IAS) versus those reporting under U.S. GAAP. First, they determine the amount of underpricing for each firm by taking the difference between first-day closing price and IPO offer price. Using each firm's underpricing as the dependent variable, they analyze the level of information content in the firm's offer size, free float, and underwriter reputation. Model 2(a) is

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developed to calculate the effects of a TRA using a model similar to Leuz (2003). The

dependent variable is the absolute value of the difference between the offering price and

the first-day closing price. The variable TRA is a dummy variable set to one if the firm

includes a TRA and zero otherwise. If firms that include TRAs have less information

asymmetry, I expect to find the TRA dummy variable to have a negative relation to

priceDIF. To proxy for the potential step-up in basis, I include *stepup* (defined in

Appendix B). Firms that have a higher potential for a step-up in basis also have a higher

potential of a greater difference between offer price and first-day closing price.

Model 2(a):

$$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 lnlagTLCF_{iq-1} + \beta_5 offersize_i +$$

$$industry\ dummies_i + year\ dummies_i + e_i$$

Firms that have assets reported at below fair market value because of expensing

of research and development activities or years of depreciation and amortization, for

example, will require analysis for the valuation of fair market value and a higher

adjustment than firms that have assets stated at or near fair market value. I expect to

find *stepup* positively associated with *priceDIF*.

Deferred tax assets (DTA) add a level of complexity to the analysis of firm value.

The deferred tax assets are only transformed into monetary value in future years as the

potential benefits are realized through a reduction in future tax liability. The uncertainty

about the realization of the DTA and the lack of liquidity should produce more volatility in

price and increase the percentage price difference. I expect this variable to have a

positive relation to the dependent variable. The TLCF is another tax attribute that

produces uncertainty in firm value. The variable lnlagTLCF is the log of the NOL carry

forward from the quarterly report period immediately preceeding the IPO quarter. Both

the DTA and TLCF are tax attributes that provide for potential benefits through the reduction of future tax liabilities; however, the two are different. The DTA is an asset and is typically viewed as an asset. The TLCF is the result of net operating losses in the firm's past. The presence of this tax attribute could produce a negative effect on market price with the expectation of potential future operating losses. Future operating losses would reduce the likelihood that the TLCF would result in a benefit through a reduction in future tax liability.

Model 2(b) replaces the variable lnlagTLCF with the dummy variable realzTLCF to proxy for the likelihood that the TLCF would produce a benefit in the reporting period of the initial offering. The dummy variable realzTLCF is set to one if the firm reports a TLCF amount and has positive pretax accounting income, zero otherwise.

Model 2(b):

$$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 realzTLCF_{iq-1} + \beta_5 offersize_i +$$

$$industry\ dummies_i + year\ dummies_i + e_i$$

Leuz (2003) finds offer size significant and negatively associated with IPO underpricing. I expect to find that the higher the offering size, the higher the potential for a greater variation in the percentage of the absolute difference in price for the opening day of the firm's stock trading, therefore a positive relation of *Offersize* to the dependent variable *priceDIF*.

Industry dummies control for differences specific to industry type. Many of the TRA firms are in the finance industry. I would like to tease out the level of significance of price difference due to differences specific to TRA firms; therefore, controlling for finance industry and other industry specific factors is important.

Year dummies control for the temporal variations in the dependent variable.

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Market Perception of the Value of Deferred Tax Assets

To test hypotheses 5, 6 and 7 regarding the market perception of the value of the inclusion of a TRA, the value of tax assets (DTA), and the offsetting value of the TRA Payable, I use a levels model similar to the model used by Chang et al. (2009).

Model 3:

$$P_{iq} = \beta_0 + \beta_1 TRA_i + \beta_2 PreTaxInc_{iq-1} + \beta_3 BV_{iq-1} + \beta_4 DTA_{iq-1} + \beta_5 TRApayable_{iq-1} +$$

$$\beta_6 growth_{iq} + \beta_7 finance_i + year\ dummies_i + e_i$$

The dependent variable, share price of the firm, is used to analyze whether the market perceives the deferred tax asset to provide value to the firm. The financial information needed to test the market perception of various financial data on the IPO date is not publically available. Therefore, I use the report date of the quarter immediately following the initial offering to proxy for the market perception of amounts reported at that date. The price at the end of the IPO quarter is used in model 3 to test whether the financial information has a positive or negative effect on the price. *PreTaxInc* is income reported prior to the IPO quarter. *BV* is the book value of equity at the beginning of the IPO quarter, adding back deferred tax assets and subtracting the TRA Payable to remove these values from *BV*, so they can be evaluated independently. Deferred tax assets (*DTA*) and TRA Payable (*TRApayable*) amounts are listed separately to analyze the market perception of these stated financial reporting items. Prior literature finds a significant and positive relation of DTA to price, indicating that the market views the DTA as an asset with value.

The *TRApayable* variable is the amount of the liability reported in the financial statements under the TRA, which will be paid to the pre-IPO owners (or the parties specifically stated in the agreement). If the market perceives this liability as a contractual obligation, then it should be negatively related to the dependent variable *P*. Of the 38 TRA firms in the sample, 22 have defined the TRA obligation in the SEC filed documents. The average TRA payable is 84.98 percent of the DTA reported by the TRA firm. This amount is not surprising since the majority of TRA firms call for an 85 percent sharing arrangement of the future tax benefit to be paid to the pre-IPO owners. To proxy for the TRA Payable amount missing for the remaining 14 TRA firms in the sample, I multiply the DTA by 85 percent for an estimate of the TRA Payable obligation. If the variable is significant and negative in relation to the dependent variable, firm price, it would indicate that the market has factored in the liability to the price. If the variable is not significant, the market does not perceive this amount as a liability of the firm. The implication is that the pre-IPO owners are extracting additional rents from the firm and, therefore, the shareholders.

Growth is a measure of firm growth using a Tobin's Q calculation[18]. I expect growth to be positively correlated to the dependent variable price. Growth is a control variable to extract the information content of price related to the expectation of firm growth. Prior studies find that firm price is more highly related to growth potential than to the reported financial data.

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[18] Tobin's Q is calculated as the total assets at the end of the IPO quarter, plus the market value of equity, less deferred tax assets scaled by total assets. Compustat quarterly variables used in the calculation are as follows:
Tobinsq = (atq + (cshoq * prccq) – ceqq – txndba)/atq

Industry dummies in the first regression model control for differences specific to industry type. Many of the TRA firms are in the finance industry. I run additional regressions using only the finance industry dummy as a control measure.

Year dummies control for the temporal variations in the dependent variable.

Chapter 4

Results

Table 13 provides the logistic regression results for Model 1(a). The coefficient on the various measures of the *stepup* variable was predicted to be positive, yet the coefficient is only positive when the *stepup* variable is set to the rank of *stepup* values. The only *stepup* variable that produces significance to the model is the *stepup* measured as the difference between the market value of the stockholders equity and the book value of the stockholders equity. Fleischer and Staudt (2013) also find a lack of significance and sign contrary to their theory for a potential step-up in basis.

*** Insert Table 13 about here ***

The coefficient on the deferred tax asset variable is positive as predicted, but again, only significant in the model using *stepup* measured as the difference between the market value of the stockholders equity and the book value of the stockholders equity. The coefficient for the dummy variable to measure the likelihood that the firm would realize an immediate benefit for the tax loss carry forward is negative, but not significant. The finance dummy variable produces the expected positive coefficient, as does the offer size. Since so many finance firms are included in the sample period and since such a high percentage of them are TRA firms, this result is not surprising. It is interesting to note, however, that 41.5 percent of the finance firms in the sample choose to incorporate TRAs into their initial public offerings. Since many of these finance firms also have large offerings, determining whether the decision to incorporate TRAs is driven more by the fact that the firms are in the finance industry or by the fact that the large offerings are making price negotiations less conducive of an agreement on a price of the tax attributes

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or whether the large offerings are making the new shareholders less likely to question or baulk at TRAs is difficult.

The best-fit model is the one that uses the *stepup* measured as the difference between the market value and the book value of the stockholders equity. This model had the lowest Akaike Information Criterion (AIC) score and the lowest Schwarz Criterion (SC) score, indicating the most parsimonious model. However, the four models are not much different, with the next best (lowest AIC and SC scores) using the *stepup* rank dummy, which produced the same sign for all coefficients as the best-fit model.

<div align="center">Additional Test: TRA Characteristics and Features</div>

*** Insert Table 14 about here ***

Table 14 reports additional tests to analyze the features of TRAs. The difference between these models and the models used in Table 13 is the measure of the tax loss carry forward variable. The models in Table 14 include a dummy variable for the tax loss carry forward set to 1 if the firm reported a TLCF, regardless of the possibility for the firm to take advantage of the benefit in the current year by having an income. Under current tax law, the tax loss carry forward can be carried forward for 20 years. Depending on the originating year of the NOL carry forward, the firm could potentially have 20 years to take advantage of reduced tax by this tax attribute. However, two things could have hindered finding significance for this variable. The first is simply that fewer firms have an NOL carry forward. The second is the possibility that a firm with an NOL carry forward is more likely to have future losses and, therefore, could be less likely to realize the benefit of an NOL carry forward.

*** Insert Table 15 about here ***

*** Insert Table 16 about here ***

Tables 15 and 16 include the same variables as 13 and 14 respectively, with the addition of a dummy variable to capture the macro economy. Fleischer and Staudt (2013) find evidence that firms are more likely to incorporate TRAs into their initial offerings during periods of contracting economy than during periods of expanding economy. I do not find evidence to support their findings. My prediction is that the decision to incorporate TRAs is not based on market timing but rather on longer strategic firm plans. Therefore, firms with TRAs would be no more likely than other IPO firms to incorporate TRAs during periods of economic contraction. My sample period is longer than Fleischer and Staudt (2013) and includes more periods of expansion. Their findings may be driven more by their sample period of January 1, 2004 to May 1, 2011.

Additional Test: Information Asymmetry

To test for lower levels of information asymmetry, I use the absolute value of the difference in offer price and first-day closing price as the dependent variable. The results shown in Table 17 support the theory that the inclusion of TRAs reduces the level of information asymmetry. Using three measures of *stepup* potential, the coefficient on the TRA dummy variable is inversely associated with the dependent variable. The coefficient on the *stepup* variable in all cases is positive as predicted, yet not at a level of significance. The higher the potential for a *stepup* in value, the more the offer price depends on estimates and valuations, therefore increasing the uncertainty about the firm offer price and the underlying value of the firm.

The coefficient on the deferred tax asset variable is positive as predicted. The coefficient on the NOL tax loss carry forward variable is negative and significant at the 10 percent level for all three models. Offer size is significant at the 1 percent level, and the

coefficient is positive as expected. This indicates that as the offer size increases, the variation in price increases on the first date of trading.

*** Insert Table 17 about here ***

Additional Test: Information Asymmetry

Table 18 reports additional testing for Model 2 using the tax loss carry forward measure *realzTLCF*. This measure determines whether there is a difference in the significance level and sign of the coefficient for the market perception that the firm will be able to use the NOL carry forward in the current operating year. I find no difference in the sign of the coefficient; it is still an inverse relation to the dependent variable, but it is no longer significant to the model.

*** Insert Table 18 about here ***

Market Perception of TRA Components

Model 3 evaluates hypothesis 5, 6, and 7 regarding the market perception of the TRA components through the impact on firm price. Table 19 reports the OLS regression results evaluating the financial information and price at the end of the IPO quarter, the end of the year following the IPO, and the 2nd year after the initial offering year. In each of the regressions, the coefficient on the TRA dummy variable is negatively associated with price as predicted. The negative effect on price might suggest that firms including TRAs have the potential to incur a drag on price; however, the variable lacks significance. The level of significance is not close to conventional levels for the IPO quarter and much less so in the years after the IPO.

*** Insert Table 19 about here ***

A measure of income and a measure of growth potential are included in the model as necessary controls in accordance with theory related to the determination of firm price. The measure of income controls for the portion of the price related to firm profitability. The coefficient on *PreTaxIncome* is significant at the 1 percent level and positive as predicted. The measure of growth potential is typically the strongest indication of firm price. The results support this theory with significance levels at 1 percent and the largest positive coefficients of the explanatory variables indicating the greatest magnitude on price.

The variable *cs_BV* is the net book value of total asset without the deferred tax asset and TRA payable amounts. These two specific accounts are included in the model as separate explanatory variables to evaluate their individual impact on price. The DTA is positive as predicted and significant at the 1 percent level, indicating that the market perceives this as an asset of the firm and that it incorporates the value into the price. This is true for the IPO quarter, the year following the IPO, and the second year after the initial offering. The TRA payable is negative for all regressions as predicted; however, it is only significant for the IPO quarter. The lack of significance for the TRA payable in the years following the IPO suggests that the market does not understand this liability and does not reduce the price for the portion of the deferred tax benefit that will be paid out to the pre-IPO owners.

The first regression in Table 19 includes dummy variables for all industries. The second regression for price at the end of the IPO quarter includes a control for the finance industry only. The coefficient is positive as predicted and is significant for the IPO quarter end. The *finance dummy* loses all significance for the year following the IPO and becomes irrelevant at 2 years following the initial offering.

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Additional Test: Market Perception of TRA Components

The model goodness of fit as seen by the Adjusted R2 for the two regressions at

the IPO quarter end shown in Table 19 is very similar. The more extensive model is

slightly higher, at .2653, than the more parsimonious model, at .2505, which includes a

control for only the finance industry. Results for both regressions show the similarity of

results and provide a basis for comparison of the regressions for subsequent years.

Tables 20 and 21 report the subsamples of TRA firms and non-TRA firms repeating the

three regressions controlled for the finance industry only. The small number of TRA firms

limits the ability to include all 2 digit SIC codes as a result of the loss of degrees of

freedom.

      *** Insert Table 20 about here ***

      *** Insert Table 21 about here ***

Only two of the explanatory variables are consistently as predicted. The variable

cs_BV is positive for all models and significant for the IPO quarter and the year following

the IPO. The measure of *growth* is positive as predicted and again significant only in the

first two regressions. The level of significance for the *growth* variable is less than that for

the *cs_BV*. Could this suggest that the market puts more weight in the financial reporting

than on the potential for growth for these firms with TRAs? The DTA and TRA Payable

variables are not significant, and the sign changes in years after the initial offerings. The

few number of TRA firm observations causes instability in the results and hinders the

ability to draw conclusions based on the findings. The regression at 2 years out has an F

Value of only 2.96 with Pr>F at an insignificant level of 0.1191. At one year out, I can

conclude that the market does not place value on the DTA or on the TRA Payable. Since

the market does not perceive the DTA to have value as an asset, the lack of significance

for the offsetting TRA Payable is not concerning. The payments to pre-IPO owners are

not taken from assets that are perceived to provide value to the existing shareholders.

*** Insert Table 21 about here ***

Table 21 reports results for the non-TRA IPO firms only. The OLS regression

results are reflective of the results reported in Table 19 for the full sample, which is not

surprising given that the majority of firms in the full sample are non-TRA firms.

Chapter 5

Conclusions

This paper finds evidence that firms who chose to incorporate TRAs tend to have large initial offerings. This supports the idea that there is less of an opportunity for negotiating price for the items included in those TRAs. The new IPO shareholders are either less willing to take the risk of paying for the TRA items and do not mind paying for them in years following as they are realized, or they do not understand that a smaller group of investors could negotiate the price of the TRA items. It could also be that IPOs with smaller offerings shy away from this type of agreement fearing that the benefits would not outweigh the negative perception of the added complications of TRAs.

The popularity of TRAs in the finance industry could be the result of features specific to the finance industry, such as a high level of innovation in the area of high finance and close ties to consulting professionals in the legal and accounting fields. Could it be that these firms are just more likely to have heard of TRAs and been exposed to a discussion of the benefits of incorporating TRAs into their initial offerings? It could also be that these firms are more likely to be flow through entities and be better suited to take advantage of tax arbitrage opportunities since many finance firms are partnerships. Even though the tax filing structures of the pre-IPO firms are unavailable for my analysis, almost 60 percent of the finance firms have "LP" or "LLC" in their firms' names, indicating that those entities are either partnerships or limited liability companies.

Firms that include TRAs exhibit evidence of less information asymmetry than other IPO firms do. The lower levels of percentage price difference for the first day of trading could be the result of more information provided by the financial statements and disclosures related to valuation and assets stepped up to market value. It could also be a

result of the offering being less than an arm's-length transaction between related parties. Future research will investigate this further.

I find evidence that the market does price the deferred tax assets and obligations under the TRAs at the time of the initial offerings. The negative association of the TRAs to price is not significant but does indicate a potential drag on price for all periods analyzed. The continued payments under the TRAs are a result of tax attribute items that were in existence prior to the initial offerings. The new IPO shareholders benefit from the reduction of taxes by the TRA items, and this arrangement seems to be a winning combination for the new shareholders and for the pre-IPO owners when the price takes into account the deferred tax assets and the obligations under the TRAs. The concerns of the market participants in years following the initial offerings result from a lack of understanding of the TRA obligations. As a firm with a TRA moves farther away from the initial offering and from the focus on the disclosure of the TRA, the market looks more to historical market prices and growth opportunities determined from the financial reporting. The future shareholders of the firm could be at risk of a lack of understanding of this obligation in its relation to prior equity holders.

Appendix A

Determination of IPO Quarter for the Financial Reporting Period

The IPO offer date was hand collected and verified against the Compustat reported IPODATE (Company Initial Public Offering Date) or replaced if the value was missing. The Compustat variable DATADATE represents the reporting date for the data record. Using the DATADATE eliminates problems caused by Compustat data year (fyear), fiscal year end month (fyr), and fiscal quarter (fqtr). The example below is from the Compustat Manual, available online. For example:

Calendar Quarter	fyear	fqtr	fyr	DATADATE
July 2005	2005	2	1	07/29/2005
January 2006	2005	4	1	01/31/2006
December 2005	2006	2	6	12/30/2005

The offering date is compared to the Compustat DATADATE, and the number of days between the dates is captured. As shown in Figure 5, if the number of days between the IPO offering date and the DATADATE is greater than or equal to 1 and less than 92 days, the period is identified as the IPO quarter. If the number of days is less than zero and greater than or equal to -92 days, then the period is identified as the quarter immediately preceding the initial offering. If the number of days is less than -92 and greater than or equal to -184 days, the period is identified as the 2nd quarter before the initial offering.

*** Insert Figure 5 about here ***

Appendix B

Discussion of Design for Step-up Measures Used in the Regression Models

Step-up

Model 1 includes various factors to analyze the characteristics of firms incorporating

TRAs in their IPOs. Fleisher and Staudt (2013) are surprised to find a negative

correlation for their measure of a potential step-up in basis in the presence of a TRA.

Theory would suggest that the higher the potential step-up, the more likely a firm would

be to incorporate a TRA into the deal structure. I use an algorithm to evaluate multiple

potential values to arrive at a "best guess" for the potential step-up. In order to determine

an equation that can be used for all IPO firms, I use information available from TRA firms

regarding the tax benefit and the TRA payable amounts recorded and reported through

SEC filings. To proxy for the "potential" for a step-up in basis of assets, I use Compustat

quarterly data for the report date immediately following the IPO date. The number of

shares outstanding at the end of the quarter of the initial offering is used to calculate the

market value of equity (MVE) closest to the initial offering date. Adding liabilities to this

estimate for the MVE and subtracting the book value of assets results in an amount that

is then compared to the tax benefit reported by the TRA firm.

Several factors complicate the calculation of the actual step-up in basis for the

TRA firms, not the least of which is the fact that there are no consistent ways or time

frame for firms to record the event and TRA obligations. Examples of the differences that

prohibit a simple calculation include firms that have equity other than common shares

outstanding, such as publically traded partnerships, or firms that experienced a

reorganization or deconsolidation prior to the initial offering or firms that have negative

equity.

Publically traded partnerships may have non-controlling interests as part of the

equity. To adjust MVE for firms that have equity other than stockholders equity, I

calculate the ratio of stockholders equity to total equity (*SEQq/ATq-LTq*) and gross up

MVE by dividing it by this percentage (*MVE/(SEQq/ATq-LTq)*). When stockholders equity

is 100 percent of equity, this adjusted *MVE* (*adjMVE*) is equal to *MVE*. When

stockholders equity is negative, it can result in a negative value for the adjusted *MVE*, so

I set adjusted *MVE* equal to *MVE*.

The timing of the realized step-up in basis of assets is another factor that causes

problems when trying to calculate the proxy of step-up to fit all firms. The actual date of

the step-up in basis entry is not observable and can occur in the year prior to the IPO or

in a variety of periods prior to the IPO. The economic activity recorded for each firm prior

to the IPO can include a multitude of different factors. Therefore, I calculate several

estimates for the step-up in basis using values of assets at report dates prior to the IPO.

The year prior to the IPO year and the year prior to that are potential dates for analysis,

as is the quarter preceding the IPO quarter. I compare the total assets at IPO year (*AT*)

to assets prior to the IPO year (*lag(AT)*) and assets 2 years prior (*lag(lag(AT))*). I select

the lowest value for total assets assuming that this is the value of assets prior to the step-

up in basis (*prelagAT*). This same period is used to capture the value of liabilities

(*prelagLT*) for the calculation of the proxy for step-up.

$$Stepup1_i = adjMVE_{iq} + prelagLT_{iq-1} - prelagAT_{iq-1}$$

An alternative calculation is used to evaluate the potential step-up by adding total

liabilities and subtracting total assets in the quarter immediately prior to the IPO. This

can be useful to avoid dropping observations when the value of total assets is missing in

the Compustat Annual database, particularly for firms that have 2013 IPO dates.

$$Stepup2_i = adjMVE_{iq} + lagLTq_{iq-1} - lagATq_{iq-1}$$

Another alternative calculation for the equity ratio is used to evaluate the

potential for the step-up in basis. The new equity ratio, *MVE* divided by book value of

equity in the IPO quarter (*New Equity Ratio = MVE/(ATq-LTq)*). Stepup3 and Stepup4

start with this new *MVE* calculation, and then liabilities and assets are incorporated into the formula as in Stepup1 and Stepup2 respectively.

$$Stepup3_i = MVE_{iq}/(New\ Equity\ Ratio)_{iq} + prelagLT_{iq-1} - prelagAT_{iq-1}$$

$$Stepup4_i = MVE_{iq}/(New\ Equity\ Ratio)_{iq} + lagLTq_{iq-1} - lagATq_{iq-1}$$

The four values (Stepup1 through Stepup4) are calculated, and the smallest is selected for analysis of the TRA benefit recorded by each TRA firm with available data. A final check for reasonableness is included in the formula. The "potential" step-up value is compared to the total assets at the beginning of the IPO year (*lag(AT)*) and, if the value is greater than the beginning assets, the change in assets for the IPO year (*AT - lag(AT)*) is used to proxy for step-up. If there is no change in assets or negative change in assets, the value is set to zero. Of the 36 TRA firms in my sample, 2 used the Stepup1 calculated value, 1 used the Stepup2 value, 7 used Stepup3, 13 used Stepup4, 7 were set to the change in assets, and 6 were set to zero.

Some of the TRA firms report the tax benefit of the step-up in basis, others report the estimated TRA obligation resulting from the tax benefit, others may include a footnote regarding the estimated tax benefit with an offsetting allowance adjustment, and some are silent with regard to the estimated tax benefit from the TRA. For the TRA firms with available data, I analyze the difference in the proxy for "potential" step-up and the amount reported by the TRA firm. The average difference for all TRA firms is $8.442, which is 0.17 percent of average total assets for the TRA firms. Table 22 provides an example of the calculations for step-up. The offer date, fiscal year end month, IPO quarter, and Compustat DATADATE show the timeframe of the values reported in relation to the initial offering. Assets and liabilities at various report dates are provided as are the calculations for each value considered for the step-up proxy. The value selected as the step-up proxy

is compared to the value reported by the firm for the tax benefit, and the difference is reported in the last line of the Table 22.

I selected firms to show an example of each of the step-up calculations and highlight some of the potential problems with trying to construct an equation that would fit every firm. By fitting a formula to resemble most closely the TRA step-up in basis amounts recorded, the formula can be used on all IPO firms to proxy for a "potential" step-up in basis.

For example, the step-up value for Duff & Phelps Corp is $124.882 taken from the Stepup1 calculation is shown in Table 22, column 3. The actual TRA payable for Duff & Phelps Corp is $68.310 as reported in the firm 's financial statmentsand the payout percentage is defined as an 85 percent payout obligation under the TRA. Assuming that the total tax rate is 38 percent, the step-up in basis is estimated to be recorded is $211.486 ((68.310/0.85)/0.38). The calculated step-up of $124.882 compared to the estimated amount from the financial reports is -$86.604 short.

Table 22 column 4 reports the estimated step-up value for WEX Inc of$439.098 taken from the Stepup2 calculation. The actual financial statements for WEX Inc report the tax benefit amount as well as the TRA Payable under the TRA obligation. The estimated value of the step-up in basis is calculated in the same manner as Duff & Phelps Corp, which results in an estimated value of $1,313.551, greater than the value calculated as the potential step-up.

Dreamworks estimated potential step-up is taken from the Stepup3 calculation, which is in excess of the estimated amount calculated from the reported value of tax benefit by $434.222. The values for Stepup1 and Stepup2 were even greater values and would have resulted in greater differences.

Oaktree Capital Group LLC is an example of a firm with a large portion of equity in non-controlling interest. This result is a large estimate for step-up using the *adjustedMVE* calculation. The value for Stepup3 is chosen as the proxy for step-up since it is greater than zero and the smallest of the step-up values calculated.

Carlyle Group LP and Apollo Global Mgnt LLC are other examples of firms with a portion of equity in other than stockholders equity. The values for Stepup1, Stepup2, and Stepup3 fluctuate erratically. The proxy for step-up is set to the value of Stepup4, resulting in an overestimated amount for Carlyle and underestimated amount for Apollo. Spirit Airlines, Inc includes potential step-up values that are all in excess of assets prior to the IPO; therefore, the proxy for step-up is set to the change in assets for the IPO year.

Timing of the IPO, timing of the recording of the step-up in basis, other economic activity, and unobservable factors limit the accuracy of determining a potential step-up in basis calculation that is a best fit for all TRA firms. The comparison of the step-up proxy to actual amounts reported by TRA firms shows the complexity of the issues related to determining a proxy for step-up that will work for all IPO firms. Since the step-up in basis is a part of TRA firms, it is important to attempt to calculate a proxy for the "potential" step-up, which may be available for other IPO firms.

Appendix C

Example TRA Firm – Graham Packaging Co Inc

Graham Packaging Co, Inc.

Incorporated in Delaware on November 5, 1997 under the name "BMP/Graham Holdings Corporation" in connection with the recapitalization transaction in which Blackstone, management, and other investors became the indirect holders of 85 percent of the partnership interest of Graham Packaging Holdings Company.

Prospectus date: June 11, 2011

Initial Public Offering: February 10, 2010

Offer Price : $10.00

1st day closing price: $10.20

1st day volume: 6,335.7

Tax Receivable Agreement: 85 percent of realized tax savings

Primary SIC code: 3080 Miscellaneous Plastic Products.

Prospectus statement of primary business activity:

"We are a worldwide leader in the design, manufacture and sale of value-added, custom blow molded plastic containers for branded consumer products. We operate in product categories where customers and end users value the technology and innovation that our custom plastic containers offer as an alternative to traditional packaging materials such as glass, metal and paperboard. . . .

Our value-added products are supported by more than 1,000 issued or pending patents. . . ."

Tax Receivable Agreements (taken from Form S-1 Registration Statement dated December 22, 2009):

"We will be required to pay our existing owners and the Graham Family for certain tax benefits we may claim arising in connection with this offering and related transactions, which amounts are expected to be material.

As described in "Organizational Structure," limited partnership units held by the Graham Family in Graham Packaging Holdings Company may (subject to the terms of the exchange agreement) be exchanged in the future for shares of our common stock outstanding on a one-for-one basis, subject to customary conversion rate adjustments for stock splits, stock dividends and reclassifications. Graham Packaging Holdings Company intends to have in effect an election under Section 754 of the Internal Revenue Code of 1986, as amended (the "Code") effective for each taxable year in which an exchange of limited partnership units for shares of common stock occurs, which may result in an adjustment to the tax basis of the assets of Graham Packaging Holdings Company at the time of an exchange of limited partnership units. Any such future exchanges are expected to result in an increase in the tax basis of the tangible and intangible assets of Graham Packaging Holdings Company that otherwise would not have been available. Similar increases to the tax basis of the tangible and intangible assets of Graham Packaging Holdings Company resulted from our 1998 acquisition of Graham Packaging Holdings Company. These increases in tax basis will increase (for tax purposes) depreciation and amortization and therefore reduce the amount of tax that we would otherwise be required to pay in the future. These increases in tax basis may also decrease gain (or increase loss) on future dispositions of certain capital assets to the extent tax basis is allocated to those capital assets. Additionally, in connection with (and following) the Reorganization, we will be able to utilize net operating losses that arose prior to the offering and Reorganization and are therefore attributable to our existing stockholders (i.e., Blackstone, management and other investors). These net operating loss carry forwards will also reduce the amount of tax that we would otherwise be required to pay in the future.

We will enter into an income tax receivable agreement with the Graham Family that will provide for the payment by us to the Graham Family of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax that we actually realize (or are deemed to realize in the case of an early termination payment by us or a change of control as discussed below) as a result of these increases in tax basis and of certain other tax benefits related to our entering into the income tax receivable agreement, including tax benefits attributable to payments under the income tax receivable agreement. We will also enter into an income tax receivable agreement with our existing stockholders (i.e., Blackstone, management and other investors) that will provide for the payment by us to such owners of 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax that we actually realize (or are deemed to realize in the case of an early termination by us or a change of control as discussed below) as a result of (i) the utilization of our net operating losses attributable to periods prior to this offering, and (ii) any increase to the tax basis of the assets of Graham Packaging Holdings Company relating to our acquisition of 85% of Graham Packaging Holdings Company on February 2, 1998 and certain other tax benefits related to our entering into the income tax receivable agreement, including tax benefits attributable to payments under the income tax receivable agreement.

These payment obligations are our obligations and not obligations of Graham Packaging Holdings Company or any of our other subsidiaries. The actual increase in tax basis, utilization of net operating losses, as well as the amount and timing of any payments under the income tax receivable agreements, will vary depending upon a number of factors, including the timing of exchanges, the price of shares of our common stock outstanding at the time of an exchange, the extent to which such exchanges are taxable and the amount, character and timing of our taxable income in the future.

We expect that the payments that we may make under these income tax receivable agreements will be material. Assuming no material changes in the relevant tax law, and that we earn sufficient taxable income to realize the full tax benefits subject to the income tax receivable agreements, we expect that future payments under the income tax receivable agreements will aggregate to between $200 million to $250 million with potential additional payments for tax basis step-ups relating to future exchanges by the Graham Family of their limited partnership units in Graham Packaging Holdings Company for issuer stock depending on the timing and value of such exchanges. The payments under the income tax receivable agreements are not conditioned upon these parties' continued ownership of us or Graham Packaging Holdings Company.

In addition, the income tax receivable agreements provide that upon certain mergers, asset sales, other forms of business combinations or other changes of control, the income tax receivable agreements will terminate and we will be required to make a payment equal to the present value of future payments under the income tax receivable agreements, which payment would be based on certain assumptions, including those relating to our future taxable income. In these situations, our obligations under the income tax receivable agreements could have a substantial negative impact on our liquidity and could have the effect of delaying, deferring or preventing contain mergers, asset sales, other form of business combinations or other changes of control.

Our counterparties under these agreements will not reimburse us for any payments previously made under the income tax receivable agreements if such benefits are subsequently disallowed (although future payments would be adjusted to the extent possible to reflect the result of such disallowance). As a result, in certain circumstances, payments could be made under the income tax receivable agreements in excess of our cash tax savings.

Our only material asset is our interest in Graham Packaging Holdings Company, and we are accordingly dependent upon distributions from Graham Packaging Holdings Company to pay dividends and taxes and other expenses, including payments under the income tax receivable agreements.

We are a holding company and have no material assets other than our ownership of limited partnership units in Graham Packaging Holdings Company. We have no independent means of generating revenue. We intend to cause Graham Packaging Holdings Company to make distributions to its partners in an amount sufficient to cover all applicable taxes payable and dividends, if any, declared by us, as well as any payments due under the income tax receivable agreements described above. However, the instruments and agreements governing our indebtedness contain covenants that restrict the ability or our subsidiaries to make distributions to us, which could affect our ability to make payments under the income tax receivable agreements and to pay dividends. To the extent that we need funds and Graham Packaging Holdings Company is restricted from making such distributions under applicable law or regulation, or is otherwise unable to provide such funds pursuant to the terms of our indebtedness, it could materially adversely affect our liquidity and financial condition. To the extent that we are unable to make payments under the income tax receivable agreements for any reason, such payments will be deferred and will accrue interest at   % per annum until paid."

Appendix D

Example TRA Firm – KKR & Co. LP

KKR & Co. LP was formed as a Delaware limited partnership on June 25, 2007.

Initial Public Offering: July 15, 2010

Offer Price : $9.30

1st day closing price: $10.20

1st day volume: 8,791.4

Tax Receivable Agreement: 85 percent of realized tax savings

Primary SIC code: 6282 Financial - Investment Advice

The following information related to the calculation of the tax sharing arrangement is taken from the Form 10-K (Annual Report), Tax Receivable Agreement pages 260-261.

"We have entered into a tax receivable agreement with KKR Holdings requiring the intermediate holding company to pay to KKR Holdings or transferees of its KKR Group Partnership Units 85% of the amount of cash savings, if any, in U.S. federal, state and local income tax that the intermediate holding companies actually realize as a result of this increase in tax basis, as well as 85% of the amount of any such savings the intermediate holding companies actually realize as a result of increases in tax basis that arise due to future payments under the agreement. A termination of the agreement or a change of control could give rise to similar payments based on tax savings that we would be deemed to realize in connection with such events. This payment obligation is an obligation of the intermediate holding companies and not of either KKR Group Partnership. As such, the cash distributions to common unitholders may vary from holders of KKR Group Partnership Units (held by KKR Holdings and others) to the extent payments are made under the tax receivable agreements to exchanging holders of KKR Group Partnership Units. As the payments reflect actual tax savings received by KKR entities, there may be a timing difference between the tax savings received by KKR entities and the cash payments to exchanging holders of KKR Group Partnership Units. We expect the intermediate holding companies to benefit from the remaining 15% of cash savings, if any, in income tax that it realizes. In the event that other of our current or future subsidiaries become

taxable as corporations and acquire KKR Group Partnership Units in the future, or if we become taxable as a corporation for U.S. federal income tax purposes, we expect that each will become subject to a tax receivable agreement with substantially similar terms.

For purposes of the tax receivable agreement, cash savings in income tax will be computed by comparing the actual income tax liability of our subsidiary to the amount of such taxes that the intermediate holding companies would have been required to pay had there been no increase to the tax basis of the tangible and intangible assets of the KKR Group Partnerships as a result of the exchanges of KKR Group Partnership Units and had the intermediate holding companies not entered into the tax receivable agreement. The term of the tax receivable agreement continues until all such tax benefits have been utilized or expired, unless the intermediate holding companies exercise their right to terminate the tax receivable agreement for an amount based on the agreed payments remaining to be made under the agreement.

Estimating the amount of payments that may be made under the tax receivable agreement is by its nature imprecise, insofar as the calculation of amounts payable depends on a variety of factors. The actual increase in tax basis, as well as the amount and timing of any payments under the tax receivable agreement, will vary depending upon a number of factors, including:

• the timing of exchanges—for instance, the increase in any tax deductions will vary depending on the fair market value, which may fluctuate over time, of the KKR Group Partnership Units, which will depend on the fair market value of the depreciable or amortizable assets of the KKR Group Partnerships at the time of the transaction;

• the price of our common units at the time of the exchange—the increase in any tax deductions, as well as the tax basis increase in other assets, of the KKR Group Partnerships, is directly proportional to the price of our common units at the time of the exchange;

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• the extent to which such exchanges are taxable—if an exchange is not taxable for any reason (for instance, in the case of a charitable contribution), increased deductions will not be available; and

• the amount of tax, if any, our intermediate holding company is required to pay aside from any tax benefit from the exchanges, and the timing of any such payment. If our intermediate holding companies do not have taxable income aside from any tax benefit from the exchanges, it will not be required to make payments under the tax receivable agreement for that taxable year because no tax savings will have been actually realized.

We expect that as a result of the amount of the increases in the tax basis of the tangible and intangible assets of the KKR Group Partnerships, assuming no material changes in the relevant tax law and that we earn sufficient taxable income to realize the full tax benefit of the increased amortization of our assets, future payments under the tax receivable agreement will be substantial. The payments under the tax receivable agreement are not conditioned upon our principals' continued ownership of us and are required to be made within 90 days of the filing of the tax return of KKR Management Holdings Corp. For the year ended December 31, 2012 such payments made to our principals, none of whom included a member of the board of directors of our Managing Partner or our named executive officers, were approximately $2.7 million."

Figure 1
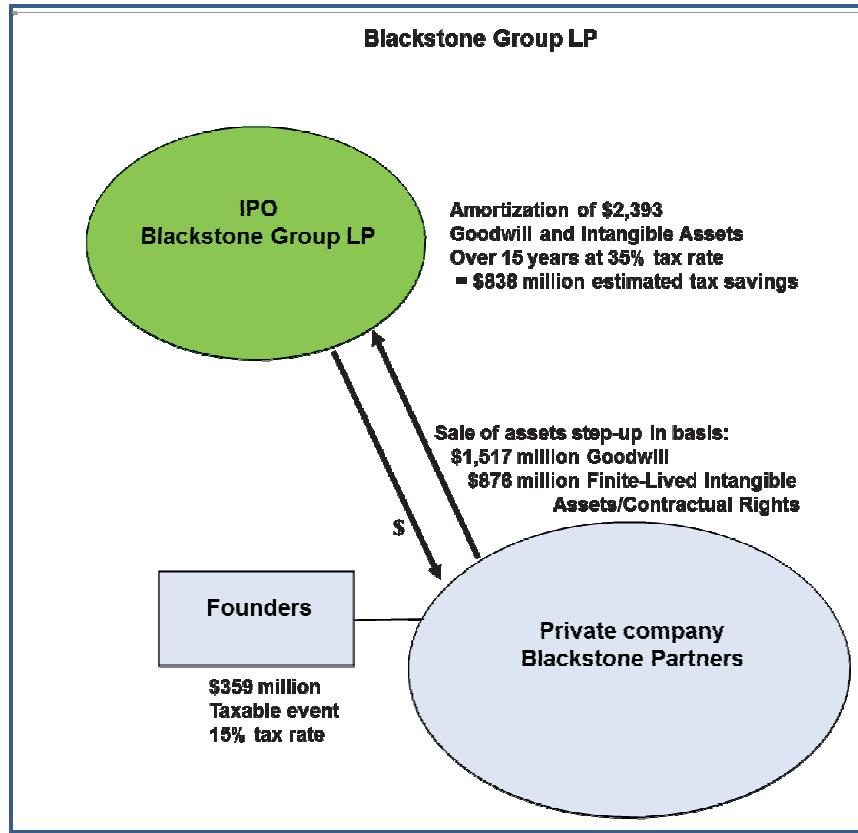
Figure 1: Blackstone Example – Sale of Assets

Figure 2
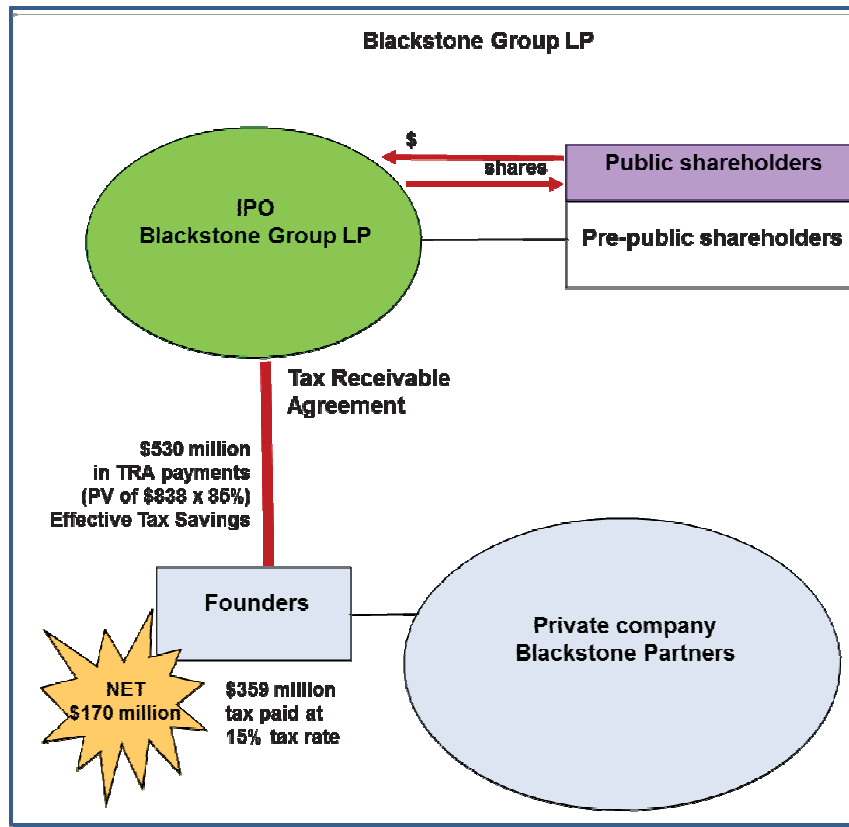
Figure 2: Blackstone Example – Tax Receivable Agreement Net Projected Payouts

Figure 3
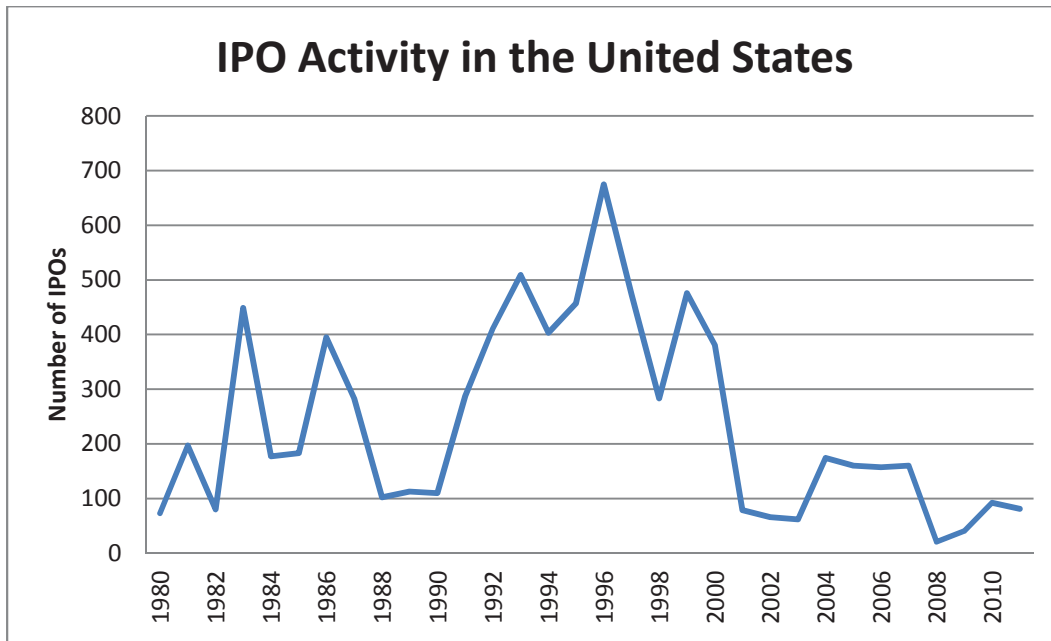
Figure 3: IPO Activity in the United States
The data regarding IPO activity in the United States used to create Figure 3 came from research by Gao, Ritter and Zhu (2012)

Figure 4
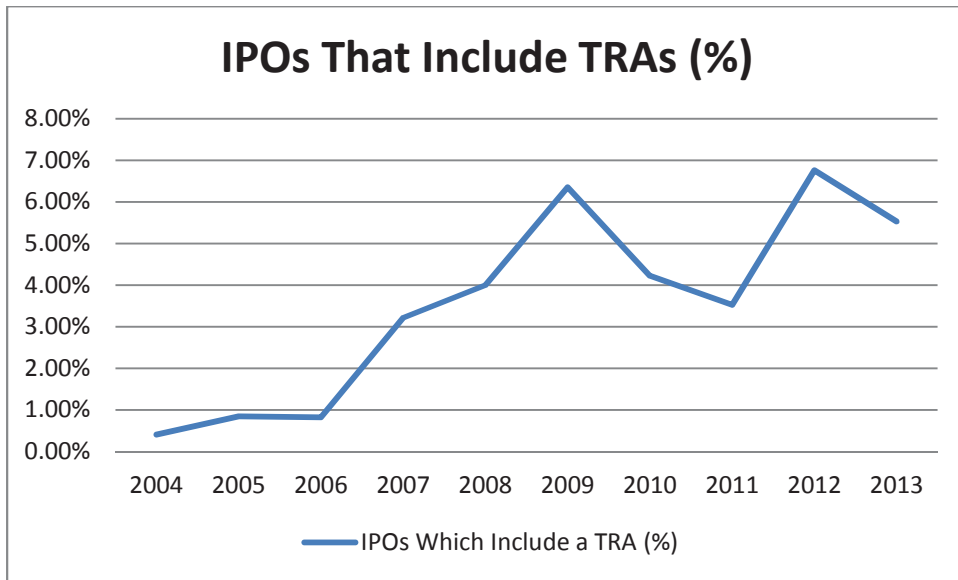
Figure 4: IPOs That Include TRAs (%)

Figure 5
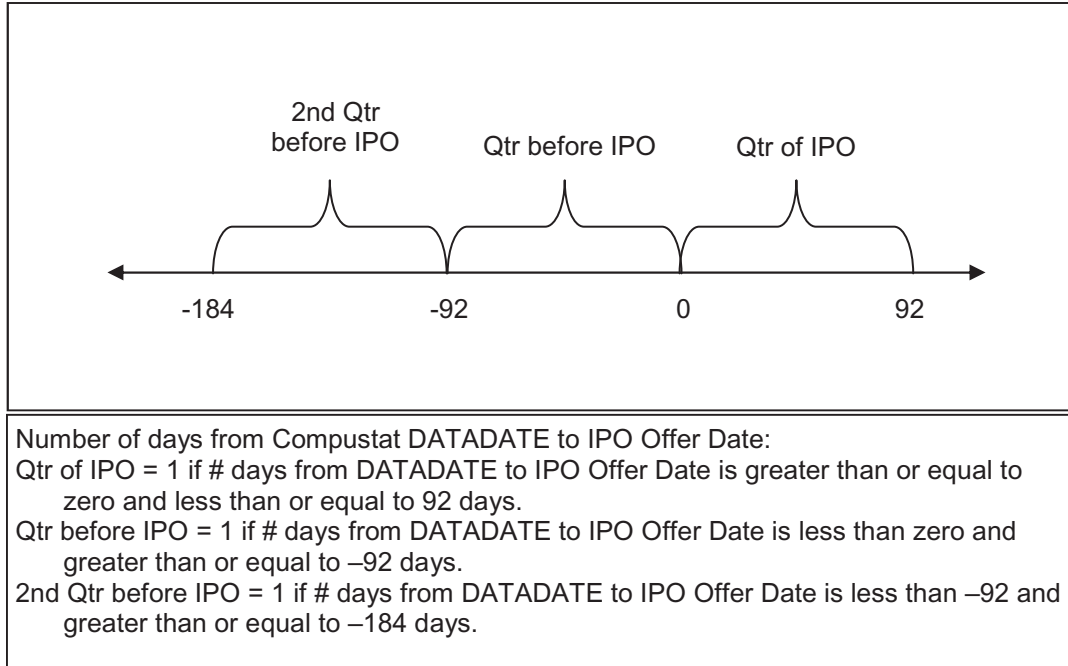
Figure 5: Number of days from Compustat DATADATE to IPO Offer Date

Table 1

	Firms	# Observations	Avg Firm years
Total IPO Firms 2004 to 2013	1,797		
Data available in Compustat (Quarterly)	1,541	41,589	6.74
Firms missing information needed for analysis*	293		
Total IPO firms included in the sample	1,248	24,504	4.91
IPO firms that include a Tax Receivable Agreement	53		
TRA firms that failed to complete an initial offering	9		
TRA firms missing information needed for analysis*	6		
Total TRA IPO firms included in the sample	38		

*Data collected from WRDS Compustat on 4/17/2014.

Table 1: Data Sample IPO Firms 2004 to 2013

Table 2

Year	TRAs Identified	TRAs with data available	IPO Withdrawn	S-1 filed, but no other filings	Delayed offering and reporting	TRA as a result of M&A not an IPO	2013 data not yet available
2004	1	1					
2005	2	2					
2006	2	1	1				
2007	9	9					
2008	2	1	1				
2009	4	3	1				
2010	7	4	2		1		
2011	5	3	2				
2012	10	7	1	1		1	
2013	12	7					5
Total	54	38	8	1	1	1	5

Table 2: Number of IPO Firms That Include TRAs

Table 3

	Mean	Median	Std Dev	Minimum	Maximum	N
Size Measures:						
Total Assets	1,404.050	231.250	8,386.840	0.262	217,123.500	1248
Equity (Book)	438.399	119.658	2,216.580	(7,788.000)	42,713.020	1248
Market Value of Equity	1,332.620	483.691	4,923.170	4.664	121,565.180	1248
Balance Sheet Accounts:						
Goodwill	141.629	-	1,062.580	-	31,778.000	1207
Goodwill Scaled by AT	0.073	-	0.135	-	0.714	1207
Stepup (estimated)	175.435	60.643	957.307	-	30,590.880	1248
Stepup Scaled by AT (Stepup estimated/at)	0.425	0.278	2.008	-	69.969	1248
Stepup (MVE-BVE)	682.739	233.591	2,538.400	-	68,087.000	1248
Deferred Tax Assets (DTA)	31.450	0.782	140.782	(0.023)	2,469.000	1248
DTA Scaled by AT	0.025	0.004	0.054	(0.000)	0.734	1248
Tax Loss Carry Forward (TLCF)	71.101	-	623.993	-	16,311.000	1248
TLCF Scaled by AT	0.231	-	0.664	-	9.076	1248
Financial Ratios:						
Debt to Assets	0.159	0.033	0.260	-	4.686	1237
Debt to Equity	0.412	0.046	7.400	(186.000)	82.329	1237
ROA	(0.018)	0.003	0.120	(2.197)	0.255	1248
ROE	0.051	0.015	3.117	(22.930)	104.259	1248
BTM	0.443	0.288	1.310	(7.722)	40.035	1248
Tobins Q	4.124	2.191	18.696	0.452	642.118	1248

Table 3: Descriptive Statistics for Full Sample of IPO Firms 2004-2013

Table 4

	Mean	Median	Std Dev	Minimum	Maximum	N
Size Measures:						
Total Assets	5,507.680	1,219.040	11,106.960	65.873	44,770.770	38
Equity (Book)	3,094.120	180.033	8,926.200	(858.869)	42,713.020	38
Market Value of Equity	1,289.380	1,094.150	1,347.570	48.135	6,370.870	38
Balance Sheet Accounts:						
Goodwill	183.406	17.260	437.479	-	1,642.000	38
Goodwill Scaled by AT	0.081	0.008	0.131	-	0.467	38
Stepup (estimated)	438.851	177.686	603.806	-	2,467.660	38
Stepup Scaled by AT (Stepup estimated/at)	0.367	0.190	0.495	-	1.933	38
Stepup (MVE-BVE)	942.468	805.234	873.896	-	3,506.480	38
Deferred Tax Assets (DTA)	158.373	61.820	232.533	-	935.630	38
DTA Scaled by AT	0.118	0.037	0.186	-	0.734	38
Tax Loss Carry Forward (TLCF)	58.355	-	215.455	-	1,040.000	38
TLCF Scaled by AT	0.021	-	0.073	-	0.405	38
Financial Ratios:						
Debt to Assets	0.315	0.208	0.380	-	1.796	36
Debt to Equity	(0.552)	0.046	3.229	(12.816)	3.658	36
ROA	(0.056)	0.020	0.300	(1.252)	0.255	38
ROE	2.726	0.069	16.965	(6.202)	104.259	38
BTM	2.131	0.307	6.835	(2.638)	40.035	38
Tobins Q	1.785	1.483	1.057	0.720	5.171	38

Table 4: Descriptive Statistics for IPO Firms That Include TRAs 2004-2013

Table 5

	Mean	Median	Std Dev	Minimum	Maximum	N
Size Measures:						
Total Assets	1,275.180	222.124	8,260.060	0.262	217,123.500	1210
Equity (Book)	354.996	119.414	1,549.390	(7,788.000)	37,159.000	1210
Market Value of Equity	1,333.980	478.733	4,994.370	4.664	121,565.180	1210
Balance Sheet Accounts:						
Goodwill	140.271	-	1,076.890	-	31,778.000	1169
Goodwill Scaled by AT	0.072	-	0.135	-	0.714	1169
Stepup (estimated)	167.162	59.556	965.316		30,590.880	1210
Stepup Scaled by AT (Stepup estimated/at)	0.427	0.283	2.037	-	69.969	1210
Stepup (MVE-BVE)	674.583	231.720	2,573.020	-	68,087.000	1210
Deferred Tax Assets (DTA)	27.464	0.654	135.150	(0.023)	2,469.000	1210
DTA Scaled by AT	0.022	0.004	0.041	(0.000)	0.443	1210
Tax Loss Carry Forward (TLCF)	71.502	-	632.598	-	16,311.000	1210
TLCF Scaled by AT	0.238	-	0.673	-	9.076	1210
Financial Ratios:						
Debt to Assets	0.155	0.031	0.254	-	4.685	1201
Debt to Equity	0.441	0.046	7.488	(186.000)	82.329	1201
ROA	(0.017)	0.003	0.110	(2.198)	0.224	1210
ROE	(0.033)	0.013	0.991	(22.930)	14.583	1210
BTM	0.390	0.288	0.497	(7.722)	6.138	1210
Tobins Q	4.198	2.215	18.982	0.452	642.118	1210

Table 5: Descriptive Statistics for IPO Firms That Do NOT Include TRAs 2004-2013

Table 6

SIC Code	Description	Full Sample	Non-TRA firms	TRA only firms	Percentage TRA firms
01-09	Agriculture, Forestry, Fishing	5	5	0	0.0%
10-14	Mining	72	69	3	4.2%
15-17	Construction	6	6	0	0.0%
20-39	Manufacturing	460	455	5	1.1%
40-49	Transportation & Public Utilities	101	99	2	2.0%
50-51	Wholesale Trade	33	32	1	3.0%
52-59	Retail Trade	73	73	0	0.0%
60-67	Finance, Insurance, Real Estate	192	171	21	10.9%
70-89	Services	293	287	6	2.0%
91-99	Public Administration	13	13	0	0.0%
Total		1248	1210	38	3.0%

Most common 2 digit SIC Code for TRA Firms 2004 to 2013.

SIC Code	Description	Full Sample	Non-TRA firms	TRA only firms	Percentage TRA firms
6200	Security & Commodity Brokers, Dealers, Exchanges & Services	41	24	17	41.5%

Table 6: Frequencies of SIC Codes for IPO Firms 2004 to 2013

Table 7

	All IPO Firms	TRA only	non-TRA firms	F Value	Pr > F	Wilcoxon Mann Whitney	Pr > Z
Size Measures:							
Total Assets	1,404.050	5,507.680	1,275.180	1.81	0.0046	5.514	<.0001
Equity (Book)	438.399	3,094.120	354.996	33.19	<.0001	1.062	0.2884
Market Value of Equity	1,332.620	1,289.380	1,333.980	13.74	<.0001	1.988	0.0468
Balance Sheet Accounts:							
Goodwill	141.629	183.406	140.271	6.06	<.0001	2.413	0.0158
Goodwill Scaled by AT	0.073	0.081	0.072	1.05	0.8944	1.494	0.1351
Stepup (estimated)	175.435	438.851	167.162	2.56	0.0007	3.634	0.0003
Stepup Scaled by AT (Stepup estimated/at)	0.425	0.367	0.427	16.96	<.0001	-1.432	0.1522
Stepup (MVE-BVE)	682.739	942.468	674.583	8.67	<.0001	3.301	0.001
Deferred Tax Assets (DTA)	31.450	158.373	27.464	2.96	<.0001	5.274	<.0001
DTA Scaled by AT	0.025	0.118	0.022	20.67	<.0001	3.678	0.0002
Tax Loss Carry Forward (TLCF)	71.101	58.355	71.502	8.62	<.0001	-1.202	0.2294
TLCF Scaled by AT	0.231	0.021	0.238	85.64	<.0001	-1.936	0.0529
Financial Ratios:							
Debt to Assets	0.159	0.315	0.155	2.47	<.0001	3.214	0.0013
Debt to Equity	0.412	(0.552)	0.441	5.42	<.0001	-0.742	0.4579
ROA	(0.018)	(0.056)	(0.017)	7.5	<.0001	2.094	0.0362
ROE	0.051	2.726	(0.033)	293.23	<.0001	3.349	0.0008
BTM	0.443	2.131	0.390	189.29	<.0001	1.218	0.2231
Tobins Q	4.124	1.785	4.198	322.76	<.0001	-4.217	<.0001

Table 7: Difference of means test: TRA IPO Firms and non-TRA IPO Firms

Table 8

	All Financial	TRA Financial	non-TRA Financial	F Value	Pr > F	Wilcoxon Mann Whitney	Pr > Z
Size Measures:							
Total Assets	4,364.580	8,613.500	3,842.790	1.67	0.1794	0.745	0.4564
Equity (Book)	1,236.510	5,290.400	738.655	27.07	<.0001	-1.049	0.2944
Market Value of Equity	1,516.620	1,131.700	1,563.900	13.83	<.0001	0.5451	0.5857
Balance Sheet Accounts:							
Goodwill	114.570	95.489	116.969	5.82	<.0001	1.73	0.0836
Goodwill Scaled by AT	0.043	0.042	0.043	2.1	0.0552	1.721	0.0853
Stepup (estimated)	378.895	546.000	358.373	10.32	<.0001	2.591	0.0096
Stepup Scaled by AT (Stepup estimated/at)	0.294	0.432	0.277	1.27	0.5531	0.937	0.3486
Stepup (MVE-BVE)	443.027	865.900	391.092	1.39	0.3907	2.963	0.0031
Deferred Tax Assets (DTA)	65.007	213.300	46.794	2.31	0.0041	4.016	<.0001
DTA Scaled by AT	0.033	0.146	0.019	18.63	<.0001	3.021	0.0025
Tax Loss Carry Forward (TLCF)	5.501	8.127	5.179	1.26	0.4236	0.688	0.4912
TLCF Scaled by AT	0.006	0.003	0.007	6.85	<.0001	0.578	0.5631
Financial Ratios:							
Debt to Assets	0.154	0.181	0.151	2.06	0.0142	0.029	0.9766
Debt to Equity	0.887	(0.035)	1.001	2.33	0.0298	-1.828	0.0676
ROA	(0.008)	(0.118)	0.006	38.49	<.0001	1.577	0.1148
ROE	0.555	4.843	0.029	21180.4	<.0001	1.352	0.176
BTM	0.991	3.600	0.670	453.27	<.0001	0.017	0.9867
Tobins Q	2.083	1.626	2.139	7.27	<.0001	0.146	0.8842

Table 8:Difference of means test: Financial IPO Firms (TRA and non-TRA Firms)

Table 9

	NON-Financial	TRA Firms NON-Fin	non-TRA NON-Fin	F Value	Pr > F	Wilcoxon Mann Whitney	Pr > Z
Size Measures:							
Total Assets	865.772	1,671.100	852.594	12.02	<.0001	4.923	<.0001
Equity (Book)	293.288	381.000	291.853	4.11	0.0019	1.1	0.2714
Market Value of Equity	1,299.160	1,484.200	1,296.140	15.8	<.0001	2.246	0.0247
Balance Sheet Accounts:							
Goodwill	146.621	292.000	144.155	4.46	0.0011	2.315	0.0206
Goodwill Scaled by AT	0.078	0.127	0.077	1.49	0.1944	1.669	0.0951
Stepup (estimated)	138.442	306.500	135.692	1.23	0.6509	1.772	0.0765
Stepup Scaled by AT (Stepup estimated/at)	0.449	0.287	0.451	21.08	<.0001	-2.159	0.0308
Stepup (MVE-BVE)	726.323	1,037.000	721.240	13.7	<.0001	3.265	0.0011
Deferred Tax Assets (DTA)	25.349	90.512	24.282	1.04	0.8282	2.823	0.0048
DTA Scaled by AT	0.023	0.083	0.023	19.42	<.0001	1.952	0.0509
Tax Loss Carry Forward (TLCF)	83.029	120.400	82.417	4.69	0.0008	0.057	0.9544
TLCF Scaled by AT	0.272	0.042	0.276	46.14	<.0001	-0.709	0.4787
Financial Ratios:							
Debt to Assets	0.161	0.515	0.155	2.91	0.0002	4.241	<.0001
Debt to Equity	0.318	(1.399)	0.347	3.53	0.0048	-0.427	0.6696
ROA	(0.020)	0.021	(0.021)	3.22	0.0083	1.402	0.1609
ROE	(0.041)	0.110	(0.043)	40.12	<.0001	2.92	0.0035
BTM	0.343	0.316	0.343	5.03	<.0001	0.128	0.8979
Tobins Q	4.495	1.982	4.537	426.43	<.0001	-2.554	0.0106

Table 9: Difference of means test: NON-Financial IPO Firms (TRA and non-TRA)

Table 10

Variable Name	Description	Calculation using Compustat variables when applicable
adjMVE	Adjusted Market Value of Equity	MVE / (SEQq / (atq – ltq))
BTM	Book to Market	(atq-ltq) / (cshoq*prccq)
BV	Book Value of Equity Before DTA & TRA payable	eq - DTA + TRApayable
closeprice	Price at 1st day closing	1st day closing price (hand collected)
cs_bv	Lag of BV scaled by common shares	lag(bv)/cshoq
cs_DTA	Lag of DTA scaled by common shares	lag(DTA)/cshoq
cs_PreTaxInc	Lag of PreTaxIncome scaled by common shares	lag(piq)/cshoq
cs_TRApay	Lag of TRA payable scaled by common shares	lag(TRApay)/cshoq
dbt2asst	Debt to Assets	dltt / avgat [where avgat=((at+lag(at))/2)]
dbt2eqty	Debt to Equity	dltt / avgeq [where avgeq=(eq+lag(eq))/2)]
DTA	Deferred Tax Asset	txdba
eq	Equity Total	atq - ltq
finance	Finance Industry dummy (6000 SIC codes)	1 if 2 digit SIC code > 59 and < 70, zero otherwise
Goodwill	Goodwill	gdwlq
growth	Tobins Q (natural log)	log(tobinQ * 1000000)
lagTLCFd	Tax Loss Carry Forward dummy	1 if lag(TLCF) > 0, zero otherwise
lnlagDTA	Lag of deferred tax assets (natural log)	log(lag(DTA * 1000000))
lnlagTLCF	Lag of Tax Loss Carry Forward (natural log)	log(lag(TLCF * 1000000))
loffsize	Offer Size (natural log)	log((offerprice * offershares) * 1000000)
lstepup	Stepup (natural log)	log(stepup * 1000000)
macroE	Macroeconomy	1 if expanding; 0 if contracting economy by NBER
MVE	Market Value of Equity	Cshoq * offer price
MVEcs	Market Value of Equity	cshoq * prccq
offerprice	Offer Price	Offer Price (Kenney & Patton (2013) & hand collected)

offershares	Offer Shares	Offer Shares (Kenney & Patton (2013) & hand collected)
prccq	Price reported in Compustat Quarterly	prccq
preAT	Pre-IPO Total Assets	Lag(atq)
PreTaxInc	Lag of Pre-Tax Income scaled by common shares	lag(piq)/cshoq
priceDIF	Percentage Price Difference (absolute value)	ABS(offerprice - closeprice)/offerprice
realzTLCF	Realizable TLCF dummy	1 if PreTaxInc > 0 and lagTLCF > 0, zero otherwise
ROA	ROA	piq / avgatq [where avgatq=((atq+lag(atq))/2)]
ROE	ROE	piq / avgeqq [where avgeqq=((atq-ltq)+lag(atq-ltq))/2)]
step(mve-be)	MVE less book value equity (natural log)	log((MVE - ceqq) * 1000000)
stepdum	Stepup Dummy	1 if stepup > 0, zero otherwise
steprank	Stepup by Rank	Rank of stepup, ties=low
Stepup	Potential for step-up in basis of assets	See Appendix B for explanation of Stepup calculation
TLCF	Tax Loss Carry Forward	tlcf
TobinsQ	TobinsQ	(atq + (cshoq*prccq) -ceqq - DTA) / atq
TRA	TRA dummy	1 if IPO included a TRA, zero otherwise
TRApay	TRA payable	TRA payable (hand collected)

Table 10: List of Variables

Table 11

Variable	n	Mean	Std Dev	Min	Max
cs_BV	1248	4.5486	42.4169	-45.8606	1423
cs_DTA	1248	0.3517	0.9526	-0.0009	12.6199
cs_PreTaxInc	1248	0.2466	2.7185	-12.4511	75.7442
cs_TRApay	1248	0.0649	0.6748	0	12.667
Growth	1248	14.7466	0.7745	13.021	20.2803
lnlagDTA	1248	8.7459	7.9901	0	21.6271
Loffsize	1248	25.4766	1.0561	21.0597	30.5138
Lstepup	1248	16.2716	5.4787	0	24.1439
Prccq	1248	18.6657	17.6070	0.64	414.8600
priceDIF	1248	0.1527	0.2126	0	3.5385
step(mve_be)	1248	18.6319	3.8799	0	24.9441

Table 11: Descriptive Statistics

Table 12

Pearson Correlation Coefficients	cs_BV	cs_DTA	cs_PreTaxInc	cs_TRApay	growth	lnlagDTA	loffsize	lstepup	prccq	priceDIF	step(mve_be)
cs_BV	1.00	0.1875	0.8979	0.2484	-0.0953	0.0510	0.0969	-0.0119	0.0518	-0.0284	-0.0778
		(<.0001)	(<.0001)	(<.0001)	(0.0008)	(0.0716)	(0.0006)	(0.6738)	(0.0671)	(0.3159)	(0.0060)
cs_DTA		1.00	0.2027	0.7015	-0.2445	0.4336	0.2751	0.0705	0.0536	-0.0917	-0.0751
			(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.0127)	(0.0583)	(0.0012)	(0.0079)
cs_PreTaxInc			1.00	0.2674	-0.0839	0.0964	0.1262	0.0452	0.0682	-0.0055	-0.0433
				(<.0001)	(0.0030)	(0.0007)	(<.0001)	(0.1102)	(0.0160)	(0.8470)	(0.1267)
cs_TRApay				1.00	-0.1041	0.1237	0.1171	0.0635	0.0159	-0.0451	0.0181
					(0.0002)	(<.0001)	(<.0001)	(0.0249)	(0.5753)	(0.1111)	(0.5225)
growth					1.00	-0.0716	-0.0844	0.0073	0.3563	0.4098	0.3065
						(0.0114)	(0.0029)	(0.7969)	(<.0001)	(<.0001)	(<.0001)
lnlagDTA						1.00	0.2930	0.2021	0.1293	0.0618	0.0380
							(<.0001)	(<.0001)	(<.0001)	(0.0290)	(0.1797)
loffsize							1.00	0.1185	0.3511	0.0479	0.1173
								(<.0001)	(<.0001)	-0.0902	(<.0001)
lstepup								1.00	0.0649	0.0035	0.3042
									(0.0218)	(0.9013)	(<.0001)
prccq									1.00	0.3005	0.1136
										(<.0001)	(<.0001)
priceDIF										1.00	0.1419
											(<.0001)
step(mve_be)											1.00

Table 12: Pearson Correlation Coefficients

Table 13

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

	Predicted sign	lstepup	stepdum	steprank	step (mve-be)
Intercept		-22.0534	-21.0589	-21.1194	-22.6765
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
Stepup	+	-0.0086	-0.6729	0.00037	0.0758
		(0.7614)	(0.1531)	(0.4518)	(0.0861)*
lnlagDTA	+	0.0349	0.0384	0.0342	0.0334
		(0.1377)	(0.1047)	(0.1439)	(0.1570)
realzTLCF	?	-0.2086	-0.1786	-0.2320	-0.2124
		(0.6655)	(0.7119)	(0.6302)	(0.6612)
finance	+	1.8147	1.8014	1.8105	2.0324
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
Loffsize	+	0.6870	0.6642	0.6357	0.6482
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
AIC		290.308	288.549	289.810	286.234
SC		321.084	319.325	320.586	317.010
N		1248	1248	1248	1248

Table 13: Model 1(a) Features and Characteristics of TRA Firms

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

Table 14

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

	Predicted sign	lstepup	stepdum	steprank	step (mve-be)
Intercept		-22.0192	-21.0438	-21.0435	-22.6371
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
Stepup	+	-0.00789	-0.6655	0.00038	0.0761
		(0.7809)	(0.1593)	(0.4367)	(0.0852)*
lnlagDTA	+	0.0349	0.0382	0.0344	0.0337
		(0.1378)	(0.1066)	(0.1408)	(0.1540)
lagTLCFd	?	-0.1884	-0.1407	-0.2314	-0.2120
		(0.6589)	(0.7427)	(0.5874)	(0.6204)
finance	+	1.7739	1.7741	1.7564	1.9840
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
loffsize	+	0.6867	0.6644	0.6344	0.6483
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
AIC		290.304	288.580	289.752	286.184
SC		321.080	319.356	320.527	316.959
n		1248	1248	1248	1248

Table 14: Model 1(b) Features and Characteristics of TRA Firms

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i + e_i$$

Table 15

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i + \beta_6 macroe_i + e_i$$

	Predicted sign	lstepup	stepdum	steprank	step (mve-be)
Intercept		-23.5087	-22.494	-22.5765	-24.1724
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
stepup	+	-0.0074	-0.6577	0.000373	0.0760
		(0.7942)	(0.1639)	(0.4441)	(0.0856)*
lnlagDTA	+	0.0351	0.0388	0.0343	0.0332
		(0.1363)	(0.1023)	(0.1423)	(0.1600)
realzTLCF	?	-0.2158	-0.1878	-0.2373	-0.2095
		(0.6558)	(0.6987)	(0.6236)	(0.6665)
finance	+	1.8147	1.8004	1.8126	2.0354
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
loffsize	+	0.7031	0.6815	0.6517	0.6637
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
macroe	+	1.0371	0.9898	1.0583	1.1127
		(0.4144)	(0.4312)	(0.4033)	(0.4081)
AIC		291.485	289.791	290.944	287.386
SC		327.390	325.696	326.849	323.291
n		1248	1248	1248	1248

Table 15: Model 1(c) Features and Characteristics of TRA Firms

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 realzTLCF_i + \beta_4 finance_i + \beta_5 offersize_i + \beta_6 macroe_i + e_i$$

Table 16

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i + \beta_6 macroe_i + e_i$$

	Predicted sign	lstepup	stepdum	steprank	step (mve-be)
Intercept		-23.4845	-22.4851	-22.5128	-24.1413
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
stepup	+	-0.0067	-0.6496	0.000386	0.0763
		(0.8142)	(0.1707)	(0.4289)	(0.0848)*
lnlagDTA	+	0.0351	0.0386	0.0346	0.0335
		(0.1361)	(0.1041)	(0.1390)	(0.1569)
lagTLCFd	?	-0.1969	-0.1513	-0.2375	-0.2103
		(0.6455)	(0.7250)	(0.5788)	(0.6244)
finance	+	1.7719	1.7706	1.7570	1.9874
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
loffsize	+	0.7032	0.6820	0.6507	0.6639
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
macroe	+	1.0404	0.9908	1.0615	1.1147
		(0.4132)	(0.4306)	(0.4023)	(0.4078)
AIC		291.476	289.820	290.881	287.335
SC		327.381	325.725	326.786	323.240
n		1248	1248	1248	1248

Table 16: Model 1(d) Features and Characteristics of TRA Firms

$$TRA = \beta_0 + \beta_1 stepup_i + \beta_2 lnlagDTA_i + \beta_3 lagTLCFd_i + \beta_4 finance_i + \beta_5 offersize_i + \beta_6 macroe_i + e_i$$

Table 17

$$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 lnlagTLCF_{iq-1} + \beta_5 offersize_i + industry\ dummies_i + year\ dummies_i + e_i$$

	Predicted sign	lstepup	stepdum	Step (mve-be)
Intercept		-0.3020	-0.3186	-0.3114
		(0.0660)**	(0.0553)*	(0.0574)*
TRA	-	-0.1279	-0.1271	-0.1283
		(0.0011)***	(0.0012)***	(0.0010)***
stepup	+	0.00099	0.0147	0.0045
		(0.4137)	(0.5113)	(0.0060)***
lnlagDTA	+	0.0002	0.0002	0.0003
		(0.7971)	(0.7989)	(0.7475)
lnlagTLCF	?	-0.0010	-0.0010	-0.0010
		(0.1736)	(0.1780)	(0.1724)
loffsize	+	0.0135	0.0142	0.0111
		(0.0339)**	(0.0241)**	(0.0811)*
Industry dummies (not reported)				
Year dummies (not reported)				
Adjusted R2		0.1048	0.1046	0.1100
n		1248	1248	1248

Table 17: Model 2(a) Information Asymmetry in IPO Firms

$$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 lnlagTLCF_{iq-1} + \beta_5 offersize_i + industry\ dummies_i + year\ dummies_i + e_i$$

Table 18

$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 realzTLCF_{iq-1} + \beta_5 offersize_i$
$+ industry\ dummies_i + year\ dummies_i + e_i$

	Predicted sign	lstepup	stepdum	Step (mve-be)
Intercept		-0.2979	-0.3118	-0.3071
		(0.0700)***	(0.0608)*	(0.0611)*
TRA	-	-0.1287	-0.1280	-0.1291
		(0.0010)***	(0.0011)***	(0.0009)***
stepup	+	0.00086	0.0123	0.0045
		(0.4801)	(0.5823)	(0.0067)***
lnlagDTA	+	0.0002	0.0009	0.0002
		(0.8359)	(0.8357)	(0.7888)
realzTLCF	?	-0.0082	-0.0082	-0.0081
		(0.6094)	(0.6071)	(0.6101)
loffsize	+	0.0132	0.0138	0.0108
		(0.0380)**	(0.0282)**	(0.0911)*
Industry dummies (not reported)				
Year dummies (not reported)				
Adjusted R2		0.1036	0.1034	0.1088
n		1248	1248	1248

Table 18: Model 2(b) Information Asymmetry in IPO Firms

$priceDIF_i = \beta_0 + \beta_1 TRA_i + \beta_2 stepup_i + \beta_3 DTA_{iq-1} + \beta_4 realzTLCF_{iq-1} + \beta_5 offersize_i$
$+ industry\ dummies_i + year\ dummies_i + e_i$

Table 19

	Predicted sign	Price IPO Quarter End	Price IPO Quarter End	Price 1 Year Following IPO	Price 2 Years Following IPO
Intercept		-160.9003	-157.9559	-294.1174	-254.4355
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
TRA	-	-4.6863	-1.7821	-0.0607	-5.1025
		(0.1950)	(0.6055)	(0.9931)	(0.5583)
cs_PreTaxInc	+	3.1850	4.2243	7.4705	2.6347
		(0.0020)***	(<.0001)***	(<.0001)***	(0.0159)**
cs_BV	+	0.51869	0.5799	1.4041	1.4759
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
cs_DTA	+	3.5992	3.8874	2.8479	2.7086
		(<.0001)***	(<.0001)***	(0.0006)***	(0.0005)***
cs_TRApay	-	-8.3838	-8.5757	-3.9179	-2.1125
		(0.0008)***	(0.0003)***	(0.2663)	(0.6082)
Growth	+	12.0586	11.7865	21.2398	18.5792
		(<.0001)***	(<.0001)***	(<.0001)***	(<.0001)***
Finance	+		5.6350	2.0711	-0.1418
			(<.0001)***	(0.2850)	(0.9434)
Industry dummies		(not reported)			
Year dummies (not reported)					
Adjusted R2		0.2653	0.2505	0.3951	0.3872
N		1248	1248	1044	871

Table 19: Model 3(a) Market Perception of TRA Components

$$P_{iq} = \beta_0 + \beta_1 TRA_i + \beta_2 PreTaxInc_{iq-1} + \beta_3 BV_{iq-1} + \beta_4 DTA_{iq-1} + \beta_5 TRApayable_{iq-1} + \beta_6 growth_{iq} + \beta_7 finance_i + year\ dummies_i + e_i$$

Table 20

	Predicted sign	Price IPO Quarter End	Price 1 Year Following IPO	Price 2 Years Following IPO
Intercept		-93.1984	-109.2275	-233.4279
		(0.0733)*	(0.1422)	(0.2324)
cs_PreTaxInc	+	0.0448	0.0029	-0.4303
		(0.9684)	(0.9974)	(0.8606)
cs_BV	+	0.3231	0.2303	0.3068
		(0.0021)***	(0.0400)**	(0.2753)
cs_DTA	+	1.8129	0.1547	-1.0382
		(0.2203)	(0.9041)	(0.6051)
cs_TRApay	-	-1.1648	0.7879	4.7756
		(0.7030)	(0.7582)	(0.4062)
growth	+	8.0608	9.2471	18.4726
		(0.0232)**	(0.0741)*	(0.1676)
finance	+	-3.9815	0.4343	2.1786
		(0.1648)	(0.9132)	(0.8071)
Year dummies (not reported)				
Adjusted R2		0.5690	0.7644	0.5858
F Value		4.2600	7.0300	2.9600
Pr>F		(0.0011)	(0.0009)	(0.1191)
N		38	27	19

Table 20: Model 3(b) Market Perception of TRA Components: TRA IPO Firms

$$P_{iq} = \beta_0 + \beta_1 TRA_i + \beta_2 PreTaxInc_{iq-1} + \beta_3 BV_{iq-1} + \beta_4 DTA_{iq-1} + \beta_5 TRApayable_{iq-1} + \beta_6 growth_{iq} + \beta_7 finance_i + \ year\ dummies_i + e_i$$

Table 21

	Predicted sign	Price IPO Quarter End	Price 1 Year Following IPO	Price 2 Years Following IPO
Intercept		-165.2116	-301.3432	-258.9008
		(<.0001)***	(<.0001)***	(<.0001)***
cs_PreTaxInc	+	5.6689	8.3976	3.1352
		(<.0001)***	(<.0001)***	(0.0054)***
cs_BV	+	0.7071	1.5662	1.5929
		(<.0001)***	(<.0001)***	(<.0001)***
cs_DTA	+	3.8884	2.8385	2.7812
		(<.0001)***	(0.0009)***	(0.0005)***
growth	+	12.2379	21.7252	18.8132
		(<.0001)***	(<.0001)***	(<.0001)***
finance	+	5.8839	1.5717	-0.6613
		(<.0001)***	(0.4289)	(0.7451)
Year dummies (not reported)				
Adjusted R2		0.2649	0.4105	0.4013
F Value		32.1100	51.5400	44.8700
Pr>F		(<.0001)	(<.0001)	(<.0001)
n		1210	1017	852

Table 21: Model 3(c) Market Perception of TRA Components: NON-TRA IPO Firms

$$P_{iq}=\beta_0+ \beta_1 TRA_i + \beta_2 PreTaxInc_{iq-1} + \beta_3 BV_{iq-1} + \beta_4 DTA_{iq-1} +\beta_5 TRApayable_{iq-1} + \beta_6 growth_{iq} + \beta_7 finance_i+ \; year\; dummies_i + e_i$$

Table 22

Description	Variable	Duff & Phelps Corp	WEX Inc	Dreamworks Anamation SKG, Inc	Oaktree Capital Group LLC	Apollo Global Mgnt LLC	Spirit Airlines Inc
IPO Offer Date		9/27/2007	2/16/2005	10/27/2004	4/11/2012	3/29/2011	5/25/2011
Fiscal Year End		12	12	12	12	12	12
IPO Quarter		Q3	Q1	Q4	Q2	Q1	Q2
	Datadate	9/30/2007	3/31/2005	12/31/2004	6/30/2012	3/31/2011	6/30/2011
Assets Total Annual	AT	404.513	1,448.295	1,200.003	43,869.998	7,975.873	748.813
Lag of Assets Total Annual	lagAT	268.030	812.689	677.120	44,294.160	6,552.370	475.760
Lag of Lag of Assets	laglagAT	181.290	583.610	675.010	47,843.660	3,385.200	327.870
Assets Total Quarterly	ATq	299.689	1,238.069	1,200.003	44,770.769	6,515.039	709.964
Lag of Assets Total Quarterly	lagATq	273.460	812.690	877.490	45,498.030	6,552.370	545.240
Pre-IPO Assets	prelagAT	181.290	583.610	675.010	44,294.160	3,385.200	327.870
Liabilities Total Annual	LT	223.030	1,335.682	370.117	2,805.274	5,327.552	279.107
Lag of Liabilities Total Annual	lagLT	174.010	528.440	686.630	2,121.550	3,470.950	580.830
Lag of the Lag of Liabilities	laglaglt	97.180	325.280	498.030	2,140.830	2,086.090	505.990
Liabilities Total quarterly	LTq	220.338	1,196.914	370.117	2,057.753	3,267.372	294.673
Lag of Liabilities Total Quarterly	lagLTq	190.290	528.440	828.500	2,534.630	3,470.950	642.260

Pre-IPO Liabilities	prelagLT	97.180	325.280	498.030	2,121.550	2,086.090	505.990
Stockholders Equity Total	SEQq	79.351	41.155	826.945	278.770	260.781	415.291
Equity Ratio	SEQq / ATq - LTq	1.000	1.000	0.996	0.007	0.080	1.000
Market Value of Equity	MVE = cshoq*offprice	208.992	723.348	2,882.600	1,297.783	2,268.999	869.916
Adjusted MVE	MVE / (SEQq/Atq-LTq)	208.992	723.348	2,892.852	198,845.737	28,257.247	869.916
New Equity Ratio (MVE/BVequity)	MVE/(ATq-LTq)	2.634	17.576	3.473	0.030	0.699	2.095

A. Stepup1 = adjMVE + prelagLT - prelagAT	124.882	*	465.018		2,715.872		156,673.127		26,958.137		1,048.036		
B. Stepup2 = adjMVE + lagLTq - lagAtq	125.822		439.098	*	2,843.862		155,882.337		25,175.827		966.936		
C. Stepup3 = MVE/(New Equity Ratio)+prelagLT - prelagAT	(4.759)		(217.175)		652.906	*	540.406		1,948.557		593.411		
D. Stepup4 = MVE/(New Equity Ratio)+lagLTq+lagATq	(3.819)		(243.095)		780.896		(250.384)	*	166.247	*	512.311		
E. Change in AT preIPOAT to IPOAT	136.483		635.606		522.883		(424.162)		1,423.503		273.053	*
Stepup = lowest value not less than zero	124.882	*	439.098	*	652.906	*	540.406	*	166.247	*	273.053	*

Table 22: Analysis of "Potential" Step-up in Basis

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