Post-Offering Operating Performance of Reverse LBOs: An update

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Abstract

This paper reports on the post-offering performance of 114 U.S. firms that went public between 2000 and 2008 following Leverage Buyouts. The objective of this paper is to examine the accounting performance following reverse leverage buyouts. In addition to accounting performance measures, capital expenditures, working capital and employment levels are also compared to rival firms. The evidence indicates that the reverse LBO corporations have superior accounting performance compared to their peers in the year of the IPO and for following years after the public offering. Moreover, the reverse leverage buyout corporations have less operating income compared to the reverse leverage buyout firms in previously studies but have more operating income and operating cash flows than their industry counterparts. The RLBO firms typically make less capital expenditures except the IPO year and four years after the initial public offering. Also, the RLBO firms utilize working capital more efficiently compared to their counterparts while there is not much difference observed for employment management, a finding that similar to Holthausen and Larcker (1996).

1. Introduction

Happern, Kieschnick and Rotenberg (1999)) find that the leverage buyout companies have better growth prospects and lower Tobin q values than the rest of the publicly traded firms in associated industries. Similarly, Jensen (1989) documents leverage buyout companies have less motivation problems especially in the sectors with less growth opportunities. Moreover, Degeorge and Zeckhauser (1993) cite that the accounting performances of reverse leverage buyout corporations exceed their counterparts in the year before and at the time of the initial public offering, but deteriorate thereafter.

Kaplan (1997), in explaining the trends in 1980s, gave important clues about the RLBOs behavior in general:

> *"In the first half of the 1980s, the LBO insights led to great success. Buyout companies experienced improved operating profits and few defaults. Adjusting for the overall stock market or industry these early buyouts generated abnormally positive returns. Because the overall stock market increased over this period, buy out sponsors earned substantial nominal returns"*

In this paper, 144 reverse leverage buyout corporations that returned to initial public trading between 2000 and 2008 are examined. In this study, we examine the performance of these reverse LBOs as well as the changes in their organizational structure (in terms of leverage and employment level). In addition to the expenditure decisions of the reverse leverage buyout firms, the working capital management is also investigated in order to have a better understanding on the position of the reverse leverage buyout companies compare to their industry counterparts. We also analyze the degree of changes in performance and change in the working capital management associated to the changes in organizational structure. In order to

and employment level). In addition to the expenditure decisions of the reverse leverage buyout firms, the working capital management is also investigated in order to have a better understanding on the position of the reverse leverage buyout companies compare to their industry counterparts. We also analyze the degree of changes in performance and change in the working capital management associated to the changes in organizational structure. In order to perceive the relationships between change in performance and change in debt, capital expenditures, working capital and employment management, sectional and cross sectional analysis are conducted.

The results show a decrease in the mean leverage ratio, although the leverage level of reverse LBO firms remains high compare to their industry peers. However, the reverse LBO sample used in this paper has lower debt level compare to the ones in the past studies. The change in debt/capital of post-IPO period was found as -23% by Holthausen and Larcker (1996), but we find -35% or -36.45% for/with the firms (including the those have zero debt mentioned in their 10-Ks) which can be seen from the table 2 Panel A. Moreover, the accounting performance of reverse leverage buyout firms has better position than the industry counterparts (the evidences suggest a weakness in performance in the second year) and continue to outperform throughout the years. Also, the evidence shows that the reverse leverage buyout corporations spent less on capital expenditures than their peers in associated industries, except the year of the public offering and four years after the initial public offering differently than Hotlhausen and Larcker (1996) as mentioned earlier. With respect to working capital management, the evidence suggests that reverse leverage buyout companies carry less working capital than their industry equivalents. It needs to be mentioned that although the RLBO corporations increase their working capital, the working capital remains at a lower level than peer firms. In terms of

employment intensity, there is not much difference found between reverse LBO firms' staffing level and their associated industries. Yet, the evidence refers a continuous increase in employment level starting from the two years after initial public offering and shows continuity to four years after the offering.

The plan of this paper is as follows. The next section covers conceptual issues and the literature review. The third section discusses the role of the leverage level in reverse leverage buyout firms. Section three states the formal hypotheses. Section four discusses data and methodologies which are used in this study. The results are given in section five, with subsections discuss accounting performance, median levels of working capital, capital expenditures and employment level are analyzed. Section six concludes the paper.

1. Conceptual Issues and Literature Review

An original initial public offering, IPO, represents a first sale of common stock or shares to public by growing firm. The purpose of it may differ in terms of the firms' sizes, so the issuer may often be young or relatively small firm, which may desire to expand firm's capital, as well as large but privately-held firm, which may wish to be converted into a public firm. The public corporation often believes the importance of using media exposure and visibility as an effective marketing tool of the firm. Since the corporation has an ability to increase its investors' share liquidity and enable the diversification of entrepreneurs' wealth as well as founders', the public firm generally obtains a lower cost of capital. However, some disadvantages of initial offering also exist. Disadvantages of an IPO include transaction cost, ongoing fees and expenses in providing information to equity markets and regulators, and reduction in the control of the firm to outsiders (Hogan, Olson and Kish (2001)). In addition, the publicly quoted company with

dispersed ownership may suffer from a higher degree of managerial discretion resulting from a lack of monitoring which may lead to "empire building" to the detriment of shareholders' value (Renneboog and Simons, (2005)).

A leveraged buyout, be shorten as LBO, steps into a role when opportunity to add value arises. LBO, once described as "bootstrapping", represents an equity control of a financial sponsor when a major portion of purchase is financed by borrowing. In fact, the term of LBO does not only refer public to private transformation, which we address in this paper, but also refers an increase in leverage due to acquisitions. The central purpose of going from public to private can be explained with several different reasons such as capital relocation, wealth transfer from bondholders to shareholders, tax savings and reduction of agency cost. Nevertheless, "wealth gain" is generally accepted as the basis of those transactions.

Even though, the early versions of LBO seen in 1960s, American corporate sector faced almost 2000 leverage buyout activities in 1980s. Jensen (1989) observed that LBO-like organizations reduced their incentive problems faced by more traditional corporate organizations. Typical leverage buyout companies have finer growth prospects and lower Tobin q values than the rest of the publicly traded firms of the equal size in the same industry (Halpern, Kieschnick and Rotenberg (1999)). Thus, "going public" or "public offering" plays a significant role for the entrepreneurs and financial sponsors on this stage. Jensen (1989: page 61) describes this circulation as "eclipse of the public corporation". Kaplan (1991) researched 183 leverage buyout companies that went public between 1979 and 1986, and observed that a significant amount of leverage buyout companies went public again. Similarly, Ainina and Mohan (1991) explains the main motivation of private corporations' going public desire with revolving door policy, which states a process which implies superior information held by insiders who decide

when to exit and enter the public market. Kosedag, Mehran and Qian (2009) similarly use Ainina and Mohan's statement in order to complete Bruton, Keels, Scrifres (1999)'s idea of complete cycle and refer to reverse leverage buyouts as the last component of this cycle.

The procedure of obtaining cash to decrease firm's debt by turning privately held company into a public company, which was publicly traded before, is expressed as reverse leverage buyout. RLBO firms were the companies which were taken private in a LBO and then reenter public markets in order to acquire the same or even better benefits than original IPO. Even though some scientists claim this private to public transformation should better be fast, Cao (2007) claims this quick flip may increase doubts on whether buyout sponsors have time to make enough improvements on operation or not.

As one of the result of this "revolving door" process, insiders may use the advantage of "going public" decision earlier than the rest of the market and take advantage of the situation by purchasing the corporation's stock while they are low and selling them when the prices are high. However, reverse leverage buyouts differ from original initial public offerings in the amount of information available to investors in the period before to the IPO (Hogan, Olson and Kish (2001)). Muscarella and Vetsuypens (1989) show that reverse-LBO firms have considerably less informational asymmetry than the ones going public for the first time. It can be interpreted as the intensity of under-pricing more observable in original IPOs rather than reverse-LBOs. On a similar pattern, Kaplan and Stein (1991) state that the afterward leverage buyout companies are getting greater values and can be able to finance with publicly issued debt with a much greater extent than were earlier deals. Moreover, Mian and Rosenfeld (1993) investigated 85 firms which were operated roughly between the years of 1982 to 1990, and stated that the offerings notably and significantly outperform compare to their stock market peers. While Long and

Ravenscraft (1993) documented contradictory evidence about the improvement in cash flow subsequently to initial public offering, Holthausen and Larcker (1996) found supporting evidence that reverse leverage buyout corporations show better operating performance (operating cash flow and operating earnings) in the post-IPO period against their industry counterparts. Also, Holthausen and Larcker (1996) find that the reverse leverage buyout firms spend less on capital expenditures than the median firms in their industry before making initial public offering, but the expenditures return to median level of the industry equivalents after the initial public offering.

2. Formal Hypotheses Statement

An investigation of reverse leverage buyout firms can give us some additional information about the extent to which leverage level provide advantageous inducements within business or organization. Holthausen and Larcker (1996) find that mean leverage ratio ha decreasing path from the year before IPO to after. Thus, we detailed our analysis based on this believe to mean leverage ratios of debt/capital changes compare to the year prior to initial public offering.

$H_{1,o}$ = There is no decrease in mean leverage ratio of the reverse leverage buyout companies in time compare to the year before initial public offering.

$H_{1,a}$ = There is a decrease in mean leverage ratio of the reverse leverage buyout companies in time compare to the year before initial public offering.

Since the accounting performances (operating earnings before depreciation, interest and taxes and operating cash flow before interest and taxes) allow us to compare the performance level of RLBO companies to their associated industries, we believe that the accounting performance measures can provide better and more accurate results on whether reverse LBO firms are outperforming compare to their industries or not. Degeorge and Zechauser (1993) claim reverse LBO firms' the accounting performances outperform only before they went public, while

both Hotlhausen-Larcker (1996) and Mian-Rosenfeld (1993) claim that the reverse leverage buyout companies exceed their industry peers on performances

$H_{2,o}$ = Accounting performances of RLBO corporations does not show any difference from the accounting performance of their industry peers

$H_{2,a}$ = Accounting performances of RLBO corporations does show differences from the accounting performances of their industry peers

Kaplan (1989), Smith (1990) and Muscrealla and Vetsupens (1990) stated that firms have some ability to lower some of their expenditures (such as capital expenditure) on discretionary items after an LBO. For that reason, we examine the capital expenditure/asset changes and compare them with the related industry in order to have better understanding on whether they are different from their industries peers and whether the patterns observed change over time.

$H_{3,o}$ = Reverse LBO firms have no dissimilarities from their industry counterparts' median level in terms of spending on capital expenditures

$H_{3,a}$ = Reverse LBO firms have dissimilarities from their industry counterparts' median level in terms of spending on capital expenditures.

The working capital is examined in this analysis in order to see whether the reverse leverage buyout firms have similar working capital in their structure to their industry counterparts and when it is increasing or decreasing before, at the time, or after initial public occurred since Holthausen and Larcker (1996) documents that the reverse leverage buyout firms have significantly smaller amounts of working capital than their industry counterparts both before and after initial public offering. Also, they find in the same research that amount of reverse LBO firms' working capital increase after the public offering.

$H_{4,o}$ = RLBO corporations carry similar working capital to their industry equivalents

$H_{4,a}$ = RBLO corporations does not carry similar working capital to their industry equivalents

According to Holthausen and Larcker (1996), staffing level of reverse leverage buyout companies is not different from their counterparts either before or after the public offering. For

that reason, we examine how employment level changes in and over time, and whether reverse leverage buyout firms differ from their peers in terms of employment level after the offering.

$H_{5,o}$ = Reverse leverage buyout companies employment level is not different than their industries.

$H_{5,a}$ = Reverse leverage buyout companies employment level is different than their industries.

In this study this kind of analysis is made because the firms' performance levels possibly be different (significantly better or worse) than their industries throughout the years from the prior to IPO, at the time of IPO, +1, +2, +3, +4 years after initial public offering while the year -1 (prior to IPO year) used as a benchmark. We examine the changes in accounting performance between year -1 and +1 or between years -1 and the average of years +1 and +4 in order to see which independent variable is related to which accounting performance by how much and are there any unusual path compare to the results of the statements mentioned above. We also consider regression patterns where we can control industry performance to come up with better evidences.

$H_{6,o}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in leverage

$H_{6,a}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is related to change in leverage

$H_{7,o}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in capital expenditures

$H_{7,a}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is related to change in capital expenditures

$H_{8,o}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in working capital

$H_{8,a}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is related to change in working capital

$H_{9,o}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in employment level

$H_{9.a}$ = Change in accounting performances (measured from one year before to up to four years after the reverse LBO) is related to change in employment level

3. Data and Methodology

The sample is built from 114 reverse leveraged buyouts from 2000 to 2009. We include only US corporations, eliminating those that have foreign investment before, after or at the time of reverse leverage buyout process. Additionally, since the time range of the analysis covers recent period and the databases only give the data till at the end of 2008, some of the corporations are either excluded from the study or analyzed in the time period without considering the years after 2008.

The acquired data represents all initial public offerings (IPOs) of leverage buyouts (LBOs) which are listed by Hoover's IPO central, Thomson Reuters and Security Exchange Commission's IPO fillings. Originally, 270 IPO firms were obtained from those lists for the time period of January 1, 2000 and December 31, 2009. Since SDC stopped identifying reverse LBOs in its database as of 1999 and Thomson Reuters' database is not capable of identifying reverse leverage buyout corporations, we had to check the IPO sample and identify firms in order to obtain trustable sample. The sample is checked against 10-Ks of the each firm for each year individually from SDC Corporate database, Dow Jones News Service and Factiva for the firms' stories in order to control whether the corporations, which we found as RLBO firms, are really reverse leverage buyout firms or not. The reason behind of checking the sample against 10-Ks is that a firm is identified as a reverse LBO if 10-K's indicates that it existed previously or a public company.

Table 1 presents a distribution calendar for leveraged buyout (LBO) and the following initial public offering for the sample of 114 corporations.

Table 1

calendar year	LBO	IPO
1983	1	0
1984	0	0
1985	1	0
1986	0	0
1987	0	0
1988	2	0
1989	1	0
1990	2	0
1991	0	0
1992	1	0
1993	0	0
1994	0	0
1995	0	0
1996	5	0
1997	8	0
1998	7	0
1999	14	0
2000	12	7
2001	10	10
2002	16	8
2003	12	7
2004	9	23
2005	11	25
2006	0	25
2007	1	5
2008	1	4

*The IPOs of the reverse leverage buyout showed in the Table 1 occurred between January 1, 2000 and December 31, 2008. 114 LBO firms versus 114 IPO firms

Leverage changes (as a part of the organizational structure) before, at the time and after IPO with explanatory statistics are also examined in this study. The leverage is defined by Holthausen and Larcker as "the sum of long term debt, short term debt, capitalized leases, and redeemable preferred stock divided by the sum of long term debt, short term debt, capitalized leases, redeemable preferred stock and the book value of common equity" (1996). Therefore, we used their definition to conduct the leverage changes analysis in this study.

In order to reach RLBOs' relative operating performances, operating income and operating cash flows are used as accounting measures. As Holthausen and Larcker (1996) mentioned the

common stock returns did not use for this evaluation since "any expected decline in the performance of the company due to its reversion to a public corporation should be impounded in the offering price, so that changes in the organizational structure observed at the IPO should be uncorrelated with subsequent return".

While the operating income before depreciation, interest and taxes divided by total assets (directly taken from COMPUSTAT as OPINC/assets) is taken as the first accounting ratio, operating cash flow before depreciation, interest and taxes divided by total assets (directly taken from COMPUSTAT as OCF/asset) is the second accounting ratio used in this analysis to measure accounting performances. COMPUSTAT describes operating cash flow before, interest and taxes divided by total assets as income before depreciation plus decrease in accounts receivable plus decrease in inventory plus increase in accounts payable plus increase in other current liabilities plus decrease in other current assets.

Also, it should not be forgotten that while year -1 represents the year of initial public offering, year 0 presents the fiscal term which IPO occurred. As Holthausen and Larcker (1996) explained, there is no control either on or over the Year 0 in terms of operating results since some firms might be private or public at the time of IPO. The years after initial public offering represents not numbers of years after the process and going public, but the performance over the number of fiscal years with in that company went public.

Moreover, in this analysis, unadjusted measure is used in order to perceive the reverse-LBO corporations' performances. Industry-adjusted is used simply to understand whether the firms are better or worse comparing to their industries' performances. To obtain industry adjusted, first the RLBO companies' associated four digit SIC codes is found and then the sectors, which the

reverse LBO firms are in based on their 4 digits codes, are classified from the whole COMPUSTAT universe between 1999 to 2008. If the number of the firms in the sector related to their SIC codes are less than five, less digit SIC codes are used to obtain the industry medians. For instances, if in the classification of 3 digits codes do not have enough companies to estimate the industry median, 2 digits SIC codes associated with the companies are used. When table 4 shows RLBO firms and industry adjusted based on these firms related sectors based on the classification mentioned above, Table 5 presents RLBO firms and industry-adjusted medians based on just with the two digit SIC codes associated with the reverse leverage buyout companies' sectors.

The reason of using different SIC codes is to get better understanding as well as the results about the industry as a whole. Besides, we should also mention that in order to have Table 4 figures or results SAS computer program is used. However, in order to control the results obtained from SAS and re-find the medians for the whole industry based on the corporations' 2 digit SIC codes, the data from COMPUSTAT universe between 1970 and 2009 is acquired and eliminated up/down to the period of 1999 to 2008 for the whole COMPUSTAT universe based on the mentioned 2 digits SIC codes. The obtained results are shown on Table 5, and it can be seen a difference found.

In addition, we should not despite the fact that, most of the companies which we have worked on acquired or bought-out immediately after or went bankruptcy immediately or for a while later and since the accounting data of those firms are not generally obtainable, so the observations which are used in this study are also available across the years.

4. Results

5.1. Mean Leverage Ratio of Reverse Leverage Buyout Firms

Table 2 presents leverage changes (as a part of the organizational structure) before, at the time and after IPO with explanatory statistics. So, the mean leverage ratio (these ratios are based on book values (Holthausen and Larcker (1996))) decreases from 79.77% before IPO to 46.33% in post-IPO while the post-IPO covers the years immediately after public offering. Therefore, we re-calculate the ratios while excluding those firms have zero debt. The resulting firms exhibit that the mean leverage ratio falls from 82.67% prior to the IPO to 55.86% in post- IPO period with this method. The median of all RLBO corporations declines from 73.75% before IPO to 50.10% immediately after initial public offering.

Shown in Table 2 Panel A, each year after initial public offering has lower mean and median leverage compared to the mean and median levels in the year prior to the IPO. The other interesting result is that while three years after public offering has notably lower mean and median leverage ratios, four years after the offering firms exhibit slightly higher leverage than immediately preceding year. And these four years after IPO results are closer to the ones which had obtained for the year of initial public offering. We investigated the reason of having such a lower mean average ratio for three years after initial offering, and we figured out that one of the Reverse LBO firms created the problem and perverts the mean leverage ratio. In order to fix the dilemma, this firm is excluded from the analysis and the mean leverage ratio is re-find. While the mean leverage ratio increases to 50.50%, the median does not significantly change. The median increases from 49% to only 49.20% after the adjustments are made. However, these results are not shown in the table for not to create any confusions. Our study's results show similarities with Holthausen and Larcker's study (1996) in terms of the mean average ratios. However, the post

Table 2

Panel A

Debt to capital for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV.
Pre -IPO debt / capital	0.7977	0.7375	0.5587
IPO Year debt / capital	0.7060	0.5580	1.4423
1 Year after IPO debt / capital	0.5386	0.5010	0.3740
2 Years after IPO debt / capital	0.5135	0.5000	0.3419
3 Years after IPO debt / capital	0.5050	0.4900	3.3074
4 Years after IPO debt / capital	0.6187	0.5270	0.4113
Post -IPO debt /capital	0.4633	0.5092	0.9752
Change in debt/ capital	-0.3343	-0.2283	0.4165
# of observations for whole RLBO firms*	**114**	**114**	**114**

Panel B

Debt to capital of all RLBO firms with non-zero debt level

	MEAN	MEDIAN	STD.DEV.
Pre -IPO debt / capital	0.8267	0.7455	0.5472
IPO Year debt / capital	0.7526	0.5735	1.4777
1 Year after IPO debt / capital	0.5597	0.5105	0.3654
2 Years after IPO debt / capital	0.5302	0.5000	0.3343
3 Years after IPO debt / capital	0.5477	0.5010	3.3841
4 Years after IPO debt / capital	0.6330	0.5290	0.4048
Post -IPO debt /capital	0.5586	0.5348	0.3469
Change in debt/ capital	-0.2055	-0.1908	-0.0267
# of observations for the firms explained above*	108	108	108

Panel C

Debt to capital of the companies which have completed Post-IPO

	MEAN	MEDIAN	STD.DEV.
Pre -IPO debt / capital	0.7642	0.7255	0.3737
IPO Year debt / capital	0.5839	0.5585	0.3418
1 Year after IPO debt / capital	0.5449	0.5045	0.3427
2 Years after IPO debt / capital	0.5273	0.5120	0.3507
3 Years after IPO debt / capital	0.5437	0.5160	0.3653
4 Years after IPO debt / capital	0.6187	0.5270	0.4113

Post -IPO debt /capital	0.5586	0.5348	0.3469
Change in debt/ capital	-0.2055	-0.1908	-0.0267
# of observations which have +4 years*	44	44	44

Panel D

Debt to capital of the companies which have 3 years after IPO

	MEAN	MEDIAN	STD.DEV.
Pre -IPO debt / capital	0.7647	0.6570	0.8169
IPO Year debt / capital	0.4501	0.4770	0.3038
1 Year after IPO debt / capital	0.3923	0.4050	0.2698
2 Years after IPO debt / capital	0.3934	0.4880	0.2632
3 Years after IPO debt / capital	0.4071	0.4270	5.4583
Post -IPO debt /capital	0.4550	0.4817	1.8453
Change in debt/ capital	-0.7227	-0.1753	1.0284
# of observations which have +3 years*	69	69	69

Panel E

Debt to capital of the companies which have 2 years after IPO

	MEAN	MEDIAN	STD.DEV.
Pre -IPO debt / capital	0.9958	0.8950	0.6070
IPO Year debt / capital	1.1963	0.6175	2.8824
1 Year after IPO debt / capital	0.5924	0.4740	0.3602
2 Years after IPO debt / capital	0.6056	0.4880	0.3713
Post -IPO debt /capital	0.5990	0.4905	0.3607
Change in debt/ capital	-0.3968	-0.4045	-0.2463
# of observations which have +2years*	95	95	95

*The number of observations represents how many reverse -LBO firms was/is actually performing during this period. Since our time range is 2000- 2009, and some of the companies went public/became reverse-LBO closer to the end of our research date, the number of the firms which have 2 years after IPO are greater than the ones have only 3 years after offering. (For example if a firm went public in 2006, it will have only 2 years after IPO since 2009 10-Ks are not published till the time when the research was conducted)

Pre-IPO debt/capital is the sum of long term debt, short term debt, capitalized leases and redeemable preferred stock divided by the sum of long term debt, short term debt, capitalized leases and redeemable preferred stock plus the book value of common equity immediately prior to IPO

Post-IPO debt/capital is the sum of long term debt, short term debt, capitalized leases and redeemable preferred stock divided by the sum of long term debt, short term debt, capitalized leases and redeemable preferred stock plus the book value of common equity immediately after to IPO

IPO debt/capital ratio was slightly higher in Holthausen and Larcker's analysis the mean leverage ratio for 1983-1988 period compare to our study. The change in debt/capital was found as -23% by Holthausen and Larcker (1996) while we find -35% or -36.45% for/with the firms (including the those have zero debt mentioned in their 10-Ks) which can be seen from the table 2 Panel A. Thus, the evidences might be interpreted as while the reverse LBO firms have more debt in their capital between 1983 and 1988, they become more risk averse and use less debt in their capital between 1999 to 2008 period since the reverse LBOs in our sample has slightly lower percentages on the debt leverage. Moreover, the evidences might also be interpreted or they might be suggest either the reverse leverage buyout firms have become more and more risk averse in years after they went public or the market tolerate less debt in time.

We also take the analysis one step further and find the mean leverage ratios for the companies which have four full years after the initial public offering (only 44 firms), the companies which have only three years after initial public offering (25 firms) and the ones have only two years after initial public offering (26 firms). The logic behind make such an additional analysis is to have better understanding and to check whether the companies which have full data for after public offering process are given similar results or not, since some of the reverse leverage buyout corporations went bankruptcy or acquired by another firm immediately after or after they went public. Table 2 Panel C presents the leverages based on this classification. The mean leverage ratio of the corporations which have four full years after the initial public offerings decreases from 76.42% prior to the IPO to 58.39% after the IPO. Similarly, the mean leverage ratio declines from 76.47% prior to IPO to 4.20% after IPO for the firms which have three years after initial public offering. The reason of having such a low mean average ratio for the corporations which have three years after IPO is only because a great amount of negative

debt leverage of the one single company as it was explained earlier. After the execution of this specific firm (for the health of the study), the mean average ratio increases up to 40.71% for three years after IPO. Following to the adjustment made, it found that the pattern of the mean average ratio behavior before and after the initial public offering stays the same. As it can be seen from Table 2 Panel E, similar patterns are observed for the companies which have two years after the initial public offering process. Thus, this evidence might suggest the reverse leverage buyout corporations become more risk averse in time, and start using less debt in their capital between 1999 to 2008 periods.

5.2. The Accounting Performance of Reverse Leverage Buyout Firms

In order to reach RLBOs' relative operating performances, operating income and operating cash flows were used as accounting measures of this study. Even though OCF and OPINC ratios seem closely related, the main dissimilarity between them is OCF ratio purges more accounting accruals, and it shows more variability by smoothing earnings relative to cash flow compare to OPINC as it was very well stated by Holthausen and Larcker (1996). Table 3 presents median and mean of two accounting performance measures from the year before the IPO, which is stated as Year -1, to four years after the initial public offering. The mean for operating cash flow before depreciation, interest and taxes shows little difference across year, but increases from the year -1 to 4 years after public offering. However, as it can be seen from Table3 Panel A, the third year of OCF/asset shows negativity. The reason is the firm which lowers also debt/capital mean leverage ratios 3 years after initial offering as it explained in the result section mean leverage ratio subsection. If this firm is excluded from the computations, the mean of OCF/asset slightly and notably increases up to 11.10%, while the change in OCF/assets goes up from -0.0047 to 0.0088. The mean, goes up from 2.96 to 14.50% for operating income before depreciation, interest and

Table 3

Panel A

Operating Cash Flow before interest and taxes/asset for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV
Pre -IPO OCF / Assets	0.0701	0.0909	0.2499
IPO Year OCF /Assets	0.0864	0.0914	0.1500
1 Year after OCF /Assets	0.0923	0.1093	0.1769
2 Year after OCF /Assets	0.0863	0.0891	0.1623
3Year after OCF /Assets	0.1102	0.1061	1.0446
4 Year after OCF /Assets	0.0939	0.0913	0.1091
Post -IPO OCF/Assets	0.0654	0.1064	0.3657
Change in OCF/Assets	-0.0047	0.0155	0.1158
# of observations for whole RLBO firms	114	114	114

Panel B

Operating Income before depreciation, interest and taxes/asset for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV
Pre -IPO OPINC/Assets	0.1009	0.1297	0.2675
IPO Year OPINC/Assets	0.1474	0.1493	0.1310
1 Year after OPINC /Assets	0.1438	0.1519	0.1917
2 Year after OPINC /Assets	0.1263	0.1408	0.2103
3Year after OPINC /Assets	0.1450	0.1347	0.9685
4 Year after OPINC /Assets	0.1501	0.1338	0.0980
Post -IPO OPINC/Assets	0.1076	0.1429	0.3693
Change in OPINC/Assets	0.0068	0.0131	0.1019
# of observations for whole RLBO firms	114	114	114

OPINC/asset : Operating earnings before depreciation, interest and taxes deflated by total assets

OCF/asset : Operating cash flow before interest and taxes deflated by total asset

*Exact definition of OCF from Compustat is that operating income before depreciation (data item #13) plus decrease in account receivable (Data item # 2) plus decrease in inventory (data 3) plus increase in accounts payable (Data item #70) plus increase in other current liabilities (data 72) plus decrease in other current assets (Data item # 68)

taxes to asset (OPINC/assets) for the third year after public offering. Such a big difference emanates because of the one single company's announced data which can be easily obtained from COMPUSTAT. This gap also proves that one firm's abnormal movements can affect the entire RLBO universe used and the calculations based on that.

Additionally, it should not be forgotten that while year -1 represents the year of initial public offering, year 0 presents the fiscal term which IPO occurred and there is no control either on or over the Year 0 as it was previously explained. Moreover in this analysis, unadjusted measure is used in order to perceive the reverse-LBO corporations' performances. To obtain industry adjusted, associated SIC codes are found and then the sectors are classified from the whole COMPUSTAT universe between 1999 and 2008. The obtained results are shown on Table 5, and as it can be seen Table 4 industry adjusted numbers are different than the ones in the Table 5. The rationale under it is, two digits SIC codes cover more firms and gives undetailed, and more general results since the only 2 digit of the 4 digit SIC code is taken. In addition, since we also want to know whether the current RLBO firms are behaving similarly as the firms in the past or parallel to the past researches, similar testing methods are used like other researches to use, and by doing it we believe we will be able to get better understanding from the .

Based on the two-digit SIC codes (Table 5), the median industry-adjusted OCF/asset for year-1 is calculated as 0.019 while the median OCF/asset for RLBO firms at year -1 is 0.0909. The median industry-adjusted OPINC/asset for year -1 is 0.019 while the median OPINC/asset for RLBO firms at year -1 is 0.1297. The evidences depend on computations suggest that we have 2% better OCF/asset and 1% better OPINC/assets industry medians compare to Holthausen and Larcker (1996). Based on 4 digit SIC codes (when the digit of codes vary related with the number of firms in industry as it was explained above and can be seen from Table 4 Panel A),

Table 4

Panel A:

Results on levels of accounting performance based on various SIC codes associated with the firms

	Year -1	year 0	year 1	year 2	year 3	year 4	Avg. years +1 to +4
Median level of OCF/asset							
Firm	0.090909[b]	0.091427[b]	0.109304[b]	0.089063[b]	0.106074[a]	0.091289[b]	0.1064[a]
Industry adjusted*	0.0510[b]	0.0438[b]	0.0612[b]	0.0610[b]	0.0700[b]	0.0532[b]	0.0614[b]
# of observations**	114	113	106	95	69	44	106
Median level of OPINC/asset							
Firm	0.129746[b]	0.149344[b]	0.1519[b]	0.1408[a]	0.1347[a]	0.1338[b]	0.142895[a]
Industry adjusted	0.036118[b]	0.031522[b]	0.055825[b]	0.042905[b]	0.043393[b]	0.036697[b]	0.046[b]
# of observations**	114	112	107	96	70	44	105

Panel B:

Results on the change in accounting performance based on various SIC codes associated with the firms

	Year -1 to year 0	Year -1 to year 1	Year -1 to year 2	Year -1 to year 3	Year -1 to year 4	Year -1 to avg. years +1 to +4
Median change in OCF/asset						
Firm	0.0041[b]	0.0124[b]	0.0075[b]	0.0074[b]	0.0175[a]	0.0085[b]
Industry adjusted	0.024[b]	0.032[b]	0.036[b]	0.0403[b]	0.0361[b]	0.037[b]
Median change in OPINC/asset						
Firm	0.0155[b]	0.0247[b]	0.0132[b]	0.0085[b]	0.0375[a]	-0.0135[b]
Industry adjusted	0.0056[b]	0.0153[b]	0.0086[b]	0.0005[c]	-0.0009	0.0132[b]

**The number of observations are for the firms' performances and the industry adjusted performance

* The industry adjusted performance is calculated by using the medians of both OCF/asset and OPINC/asset for the firms in various SIC codes as it is explained in the study. In order to find the industry adjusted OCF/asset or OPINC/asset performance in given time period, the industry performance is subtracted from the OCF/asset or OPINC/asset of individually each of the reverse leverage buyout firm.

[a] Significantly different from zero at 0.01 level (two-tailed t-test); [b] Significantly different from zero at 0.05 level (two-tailed t-test) [c] Significantly different from zero at 0.1 level (two-tailed t-test)

Table 5

Panel A:

Results on levels of accounting performance based on 2-digit SIC codes associated with the firms

	Year -1	year 0	year 1	year 2	year 3	year 4	Avg. years +1 to +4
Median level of OCF/asset							
Firm	0.090909[b]	0.091427[b]	0.109304[b]	0.089063[b]	0.106074[b]	0.091289[b]	0.1064[a]
Industry adjusted*	0.0189[b]	0.0160[b]	0.0306[b]	0.0172[b]	0.0319[c]	0.0370[b]	0.0236[b]
# of observations**	114	113	106	95	69	44	106
Median level of OPINC/asset							
Firm	0.129746[b]	0.149344[b]	0.1519[a]	0.1408[b]	0.1347[b]	0.1338[b]	0.142895[a]
Industry adjusted	0.018951[b]	0.036465[b]	0.068477[b]	0.047632[c]	0.049717[b]	0.053057[b]	0.043[b]
# of observations**	114	112	107	96	70	44	105

Panel B:

Results on the change in accounting performance based on 2-digit SIC codes associated with the firms

	Year -1 to year 0	Year -1 to year 1	Year -1 to year 2	Year -1 to year 3	Year -1 to year 4	Year -1 to avg. years +1 to +4
Median change in OCF/asset						
Firm	0.0041[b]	0.0124[b]	0.0075[b]	0.0074[b]	0.0175[b]	0.0085[b]
Industry adjusted	0.002	0.018[b]	0.003[b]	-0.0002	0.0023[b]	-0.002
Median change in OPINC/asset						
Firm	0.0155[b]	0.0247[b]	0.0132[b]	0.0085[b]	0.0375[a]	-0.0135[b]
Industry adjusted	0.0130[b]	0.0198[b]	0.0211[b]	0.0074[c]	0.0179[b]	0.0156[b]

**The number of observations are for the firms' performances and the industry adjusted performance

* The industry adjusted performance is calculated by using the medians of both OCF/asset and OPINC/asset for the firms in 2-digit SIC codes as it is explained in the study. In order to find the industry adjusted OCF/asset or OPINC/asset performance in given time period, the industry performance is subtracted from the OCF/asset or OPINC/asset of individually each of the reverse leverage buyout firm.

[a] Significantly different from zero at 0.01 level (two-tailed t-test); [b] Significantly different from zero at 0.05 level (two-tailed t-test)

[c] Significantly different from zero at 0.1 level (two-tailed t-test)

the median industry-adjusted OCF/asset for year-1 is 0.0510 when the median OCF/asset for RLBO firms at year -1 is 0.0909. The median industry-adjusted OPINC/asset for year -1 is 0.03618 while the median OPINC/asset for RLBO firms at year -1 is 0.1297. Thus, the OCF/asset and OPINC/asset of the reverse leverage buyout firm is slightly higher than the median levels associated with them, so the evidences might be interpreted as of outperforming compare to their industries. However, since the year- 1 represent the year before initial public offering, the levels may be influenced by the following public offering process. For that reason, the public offering year which is year 0 should also be investigated. Based on two digit SIC codes (table 5 Panel A), the median industry-adjusted OCF/asset for year 0 is obtained as 0.016 while the median OCF/asset for RLBO firms at year -1 is found as 0.0914. The median industry-adjusted OPINC/asset for year -1 (table 5 Panel B) is 0.036 while the median OPINC/asset for RLBO firms at year -1 is 0. 1493. Yet, from various SIC codes (Table 4 Panel A), depending on the number of firms in associated industry, the median industry-adjusted OCF/asset for year 0 is 0.0438 when the median OCF/asset for RLBO firms at year -1 is 0.0914. The median industry-adjusted OPINC/asset for year -1 is 0.0315 while the median OPINC/asset for RLBO firms at year -1 is 0. 1493. As it can be seen, the initial public offering year shows similar positive and superior pattern with the year before initial public offering. Parallel path was observed by both Holthausen and Larcker (1996) 's study in their studies except the fact that their Reverse LBO firms' median level of OCF/asset and median level of OPINC/assets were notably higher than our reverse LBO firms' median levels for the both accounting measurement. The difference of their accounting measurements' median levels and our accounting measurements' median level is fluctuating between as lower as 5% to as higher as 10%. Therefore, the interpretation of these significant differences can be stated as the reverse leverage buyout corporations which have been

operated between 1999 and 2008 have less operating income compare to the reverse leverage buyout firms which had been operated between 1983 and 1988, but have more operating income and operating cash flows than their industry counterparts.

We also conducted .two-tailed t-test assuming unequal variances in order to test the performance between the companies and the associated industries. According to the results, which can be seen from both Table 4 and 5, the reverse-LBO corporations persist on outperforming in their industries for four years after the initial public offering occurred while their median industry adjusted performances for OCF/asset and OPINC/asset notably differ from zero for each year before, at the time and after initial public offering. Unlikely to the past researches, for instance in Holthausen and Larcker 's (1996) founding there is some performance weakness observed in the third year after public offering, we observed a performance weakness two years after IPO especially for OPINC/asset ratio the reverse leverage buyout firms.

Panel Bs on the both Table 4 and 5 shows the changes in the accounting performance for both the reverse leverage buyout firms and the industry adjusted from the year prior to IPO and throughout the years. When Panel A only shows observations in any given year, panel B represent changes between the years, so available data from year -1 to another year (such as year 0, year +1, year +2 and so on). The reason of conducting such an analysis is that the intensity of RLBO firm performance can possibly be superior or inferior to its industry throughout years before IPO, at the time of IPO, and +1, +2, +3, +4 years after IPO. In this analysis, year -1 is used as a benchmark.

Change in both four years after initial public offering and three years after IPO process performance weakness are observed compare to the associated industries. Unlikely from Holthausen and Larcker's studies (1996) on this subject, the median changes for both OCF/Asset and OPINC/Asset show stronger changes in performance throughout the years for the reverse LBO firms. While Holthausen and Larcker's have -0.047 for the year -1 to year 0 for OCF/asset, we have 0.0155 for the year -1 to year 0. Also, according to their result while the median change for OCF/asset for year -1 to year 1 was -0.062, we have 0.0247 as the median change for OCF/asset for year-1 to year +1. Also, while the median changes for firms in both OCF/asset and OPINC/asset show negativity except the median change of OPINC/asset for year -1 to year 0. But, more surprisingly Holthausen and Larcker's the firm median change in OPINC/assets has lower performance in each year after initial public offering compare to the prior public offering year. However, for our sample, each individual year after initial public offering have better performances (except the second year for both OCF/asset and OPINC/asset) in terms of the median changes for the reverse LBO firms between 1999 and 2008.

Moreover, while the industry adjusted for 1983-88 period shows negativity for almost each year from year -1 for both the median changes of OCF/asset and OPINC/asset except the year -1 to 0 for OPINC/asset median change, the industry adjusted in our study shows positivity in median changes for all years of OCF/asset, but only shows negativity in from year -1 to year 4 for OPINC/asset as it can be seen from the Table 4, Panel B. However, based on the 2-digit SIC codes which can be seen from Table 5 Panel B, the only negativity for the industry adjusted is the one in the median changes of OCF/asset for year -1 to year 3. For sure we should mentioned that the industry adjusted is expected to be lower because of the way of its calculations, since in order to obtain industry adjusted performances; the industry median OCF/asset or OPINC/asset

performances, which are calculated by using the firms' related SIC codes, are subtracted from OPINC/asset or OCF/asset of each reverse leverage buyout firm.

5. 3. Median Levels of Capital Expenditures, Working Capital and Employment

In this study, in addition to accounting performance, working capital management, employment level and the expenditures on capital equipment also investigated. We examine whether the capital expenditures, working capital and staffing management patterns of the reverse leverage buyout firms are different from their industry counterparts and whether these patterns change throughout the years. Table 6 presents the changes of means, medians and their related standard deviations of capital expenditures, working capital and employment for each year individually from the year before initial public offering to 4 years after offering. For both working capital, capital expenditures and employment the year before public offering have lower means and medians than the year of public offering and the each year after the offering. As it can be seen from Table 6 Panel A, the capital expenditures mean in the year before IPO is 0.0545 when the capital expenditures mean of four years after public offering is 0.0762. Also, the working capital mean in the year before IPO is -0.0112 while the working capital mean of four years after initial offering is 0.1148. On the similar way, the mean of employment level in the year before IPO is 0.0046 for our obtained reverse LBO firms when the mean of employment increases to 0.0085 four years after offering. However, for the exact year of initial public offering occurred, greater mean than the years after the initial public offering is observed. The mean of capital expenditures increases to 0.0809, but after that it starts to decline. A similar observation is also found for the working capital. At the year of public offering, the mean of working capital goes up to 16.10%, but after that it shows remarkable decreases in following years.

Nevertheless, when we look at the post-IPO terms in general, we detected that the capital expenditures mean before the public offering year is higher than the post-IPO period mean. But, the capital expenditure median in year prior to IPO is almost 5% lower than the post-IPO period. Similarly, both the mean and the median of RLBOs' working capital and the employment level in the year before the initial public offering have lower percentages than the mean and the medians of post-IPO period.

Table 7 Panel A illustrates the median level of capital expenditures, working capital and employment level for both the reverse LBO corporations and the associated industries for the year before, at the time and each year after initial public offering. As it also can be seen from the related table, even though there is not much difference the capital expenditure and the industry counterparts similar to Holthausen and Larcker's findings (1996); the reverse LBO firms still spent less on capital equipment than their industry. Yet, for the exact year of IPO and following years after public offering, they did not find much difference between the firms and their industries. But, in our study, we find that except the year of public offering and the four years after offering, the reverse leverage buyout firms spend little more on capital equipments than their industry counterparts in +1, +2+3 years. In this point, we should remind the facts that the lower the capital expenditure, the higher the free cash flow and the income since free cash flow is the amount that a company generates after laying out the money required to maintain or increase its assets, and the higher the free cash flow, the stronger the company's Balance Sheet.

In terms of working capital, the reverse leverage buyout firms in our time range have less working capital in their structure compare to their industry since the industry adjusted percentages are all negative. Thus, the evidence might suggest that reverse leverage buyout companies are more sufficient than their industry peers. Even more surprising result is that

Table 6

Panel A

Capital expenditures/asset for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV
Pre -IPO Capital expenditures / Assets	0.0545	0.0304	0.0575
IPO Year Capital expenditures/Assets	0.0809	0.0334	0.1237
1 Year after IPO Capital expenditures/Assets	0.0760	0.0391	0.0971
2 Years after IPO Capital expenditures/Assets	0.0739	0.0405	0.0911
3 Years after IPO Capital expenditures/Assets	0.0723	0.0480	0.0751
4 Years after IPO Capital expenditures/Assets	0.0762	0.0570	0.0860
Post -IPO Capital expenditures/Assets*	0.0480	0.0760	0.0913
Change in Capital expenditures/Assets**	0.0304	0.0760	0.0913

Panel B

Working Capital/asset for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV
Pre -IPO Working Capital / Assets	-0.0112	0.0552	1.4918
IPO Year Working Capital/Assets	0.1610	0.1098	0.2324
1 Year after IPO Working Capital /Assets	0.1445	0.1002	0.1837
2 Years after IPO Working Capital /Assets	0.1230	0.0900	0.2107
3 Years after IPO Working Capital /Assets	0.1321	0.1129	0.1807
4 Years after IPO Working Capital /Assets	0.1148	0.1186	0.2839
Post -IPO Working Capital /Assets*	0.1301	0.1050	0.1799
Change in Working Capital /Assets**	0.1413	0.0498	-1.3119

Panel C

Employees/asset for al RLBO firms in the analysis

for all RBLO firms in the analysis

	MEAN	MEDIAN	STD.DEV
Pre -IPO Employees / Assets	0.0046	0.0014	0.0078
IPO Year Employees /Assets	0.0070	0.0032	0.0113
1 Year after IPO Employees /Assets	0.0069	0.0032	0.0111
2 Years after IPO Employees /Assets	0.0075	0.0033	0.0115
3 Years after IPO Employees /Assets	0.0074	0.0033	0.0117
4 Years after IPO Employees /Assets	0.0085	0.0030	0.0145
Post -IPO Employees /Assets*	0.0069	0.0034	0.0109
Change in Employees /Assets**	0.0023	0.0020	-0.0078

* post-IPO represent the average of one year after initial offering to four years after offering

** change values represent post-IPO values minus pre-IPO values

Pre-IPO values represent the values of the year before the initial public occurred

Table 7

Panel A:

Results on the level of capital expenditures, working capital and employment

	Year -1	year 0	year 1	year 2	year 3	year 4	Avg. years +1 to +4
Median level of capital expenditures/asset							
Firm	0.0304[a]	0.0341[a]	0.0405[a]	0.04145[b]	0.0494[b]	0.0586[a]	0.076243[a]
Industry adjusted*	(0.0021)	(0.0005)	0.0089[b]	0.0026[b]	0.0007	(0.0026)	0.0040
# of observations**	114	114	108	97	70	44	
Median level of working capital/asset							
Firm	0.0552[a]	0.1098[a]	0.1012[a]	0.0900[a]	0.1129[a]	0.1186[a]	0.105[a]
Industry adjusted	(0.03476)	(0.09875)[a]	(0.08459)[a]	(0.09261[a]	(0.09684)[a]	(0.09661)[a]	(0.047)[b]
# of observations**	114	114	108	97	70	44	
Median level of employees/asset							
Firm	0.001442[b]	0.003188[b]	0.0032[b]	0.0033[b]	0.0033[b]	0.0030[b]	0.003408[b]
Industry adjusted	0.0001	0.0000	0.0000	0.0001	0.00015	0.00018	0.0001
# of observations**	114	114	108	97	70	44	

Panel B:

Results on the change in capital expenditures, working capital and employment

	Year -1 to year 0	Year -1 to year 1	Year -1 to year 2	Year -1 to year 3	Year -1 to year 4	Year -1 to Avg. years +1 to +4
Median change in capital expenditures/asset						
Firm	0.0024[b]	0.0028	0.0030	0.0063	0.0108[b]	0.0049
Industry adjusted	(0.0005)[b]	(0.0005)[a]	(0.0004)	(0.0069)	(0.0002)	(0.0030)
Median change in working capital /asset						
Firm	0.0016	0.0123	0.0242	0.0366	0.0150[b]	(0.0005)
Industry adjusted	0.0038[b]	0.0379[b]	0.0434[b]	0.0638[b]	0.0492[b]	0.0265[b]
Median change in employees /asset						
Firm	(0.000011)	0.000101	0.000052	0.000136	0.000692	0.000046
Industry adjusted	(0.000100)	0.000012	0.000175	0.000144	0.000270	0.000082[c]

*Parentheses stand for negative number in this table

[a] Significantly different from zero at 0.01 level (two-tailed t-test); [b] Significantly different from zero at 0.05 level (two-tailed t-test)

[c] Significantly different from zero at 0.1 level (two-tailed t-test)

almost all of the industry medians for working capital are almost two times greater than the firms' medians.

Since there is not much difference observed between the reverse leverage buyout firms and their associated industries on the employment level, we can say that there is not much evidence of layoffs found. Yet, starting from two years after initial public offering to four years after offering the employment level is increased.

5.4. Sectional and Cross-Sectional Analyses

In this study, we try to find the firm characteristics that affect accounting performance (OCF/asset and OPINC/asset) and debt/capital, working capital/asset, capital expenditures/asset and employees/asset. Table 8 presents how much debt/capital, capital/asset, capital expenditures/asset and employees/asset in the each year before, at the time and after IPO is correlated to OCF/asset and OPINC/asset in each year before, at the time and after the public offering.

Table 8 Panel A shows, the OCF/asset and debt/capital, t-stat of the year at the time of IPO and the t-stat of three years after offering are way greater than 1.96 in absolute term. The specified years' p values are also smaller than the alpha which is equal to 0.001, so we can consider them as meaningful and significant in 0.001 level which is accepted as highly significant level. However, when the test can only have 22.84% explanatory power for the initial public offering year, it has year 97.63% prediction power in the third year after the IPO. However, for OPINC/asset and debt/capital, not only the year of public offering and three years after offering, but also the year before initial offering is significant, but while the year 0 and +3 are 99.999% significant, the year before IPO is 95% significant.

For the relation between OCF/assets and capital expenditures/assets, we can say there is not significant either at 5% or at 10% significance level, but only two years after initial offering is significant at 80%. Similar pattern observed for the relationship between OPINC/asset and capital expenditures. Working capital and OCF/asset show 99.999% significant relation in the year prior to IPO, at the year of IPO and two years after. Three years after the initial public offering working capital/asset and OCF/asset has correlation at 98%. However, OPINC/asset and working capital/asset in prior to IPO has 99.999% significance, the year of IPO and +2 and +3 years are significant at 95% (Table 8 Panel C). Additionally, it can be seen from Table 8 Panel D, while the OCF/asset and employment level shows 95% significant relationship at the year of public offering +1 and +2 have 95% significant correlation while the year prior to IPO and four years after the offering shows 90%. OPINC/asset and employment level shows 98% significance while the year prior to IPO and two years after initial public offering shows 90% significant correlation.

We also examined in the changes in performance of the reverse LBO firms which can be explained by changes in leverage and working capital management, expenditures on capital equipment and employment level. Table 9 illustrates these sectional variations in changes. While the change in debt/capital from -1 to +1 shows 95% significant relation with both OCF/asset from -1 to +1 and OPINC/asset from -1 to +1, the change in debt/capital from -1 to average of one years after initial offering to four years after offering shows 99.99% significant relationship with both OCF/asset and OPINC/asset from -1 to average of years +1 to +4. However, neither capital expenditure from year -1 to +1 nor capital expenditure from year -1 to average of one to four years after public offering show any significant relation with neither OCF/asset from year -1 to year +1 nor OCF/asset from year -1 to average of one to four years

Table 8

Panel A

Dependent variable	Intercept	Adjusted R^2	P value	T stat	debt/capital regression coefficient	Independent variable
OCF/asset prior to IPO	0.02087	0.010309	0.143	1.5	0.06175756	Debt/capital prior to IPO
OCF/asset in year of IPO	0.12197	0.228372	5E-08	-5.8	-0.05044016	Debt/capital in year of IPO
OCF/asset 1 year after IPO	0.09014	-0.00954	0.932	0.1	0.00395581	Debt/capital 1 year after IPO
OCF/asset 2years after IPO	0.09972	-0.0077	0.597	-0.5	-0.02608694	Debt/capital 2 years after IPO
OCF/asset 3 years after IPO	-0.0495	0.976398	4E-58	54	0.31201388	Debt/capital 3 years after IPO
OCF/asset 4 years after IPO	0.12281	0.007969	0.253	-1.2	-0.04671336	Debt/capital 4 years after IPO

Intercept stands for the coefficient value of the intercept.

Dependent variable	Intercept	Adjusted R^2	P value	T stat	debt/capital Regression coefficient	Independent variable
OPINC/asset prior to IPO	0.02291	0.033123	0.029	2.2	0.09772993	Debt/capital prior to IPO
OPINC/asset in year of IPO	0.17975	0.267704	3E-09	-6.5	-0.04762718	Debt/capital in year of IPO
OPINC/asset 1 year after IPO	0.12507	-0.00476	0.482	0.7	0.03504885	Debt/capital 1 year after IPO
OPINC/asset 2years after IPO	0.10068	-0.00374	0.424	0.8	0.05048689	Debt/capital 2 years after IPO
OPINC/asset 3 years after IPO	-0.0049	0.979091	1E-60	58	0.29180143	Debt/capital 3 years after IPO
OPINC/asset 4 years after IPO	0.13178	-0.01213	0.495	0.7	0.02485719	Debt/capital 4 years after IPO

Intercept stands for the coefficient value of the intercept.

Panel B

Dependent variable	Intercept	Adjusted R^2	P value	T stat	capx */ asset regression coefficient	Independent variable
OCF/asset prior to IPO	0.04963	-0.00137	0.36	0.9	0.37603713	Capx/asset prior to IPO
OCF/asset in year of IPO	0.07414	0.006302	0.194	1.3	0.1496158	Capx/asset in year of IPO
OCF/asset 1 year after IPO	0.08041	-0.00323	0.419	0.8	0.14384372	Capx/asset 1 year after IPO
OCF/asset 2years after IPO	0.06502	0.013531	0.132	1.5	0.27609693	Capx/asset 2 years after IPO
OCF/asset 3 years after IPO	0.06163	-0.00886	0.537	-0.6	-1.02910156	Capx/asset 3 years after IPO
OCF/asset 4 years after IPO	0.08289	-0.01785	0.648	0.5	0.08764918	Capx/asset 4 years after IPO

*Capx = capital expenditures

Intercept stands for the coefficient value of the intercept.

Dependent variable	Intercept	Adjusted R^2	P value	T stat	capx/ asset regression coefficient	Independent variable
OPINC/asset prior to IPO	0.08093	-0.00268	0.405	0.8	0.36573552	Capx/asset prior to IPO
OPINC/asset in year of IPO	0.14319	-0.00786	0.722	0.4	0.03589374	Capx/asset in year of IPO
OPINC/asset 1 year after IPO	0.14588	-0.0089	0.814	-0.2	-0.04539843	Capx/asset 1 year after IPO
OPINC/asset 2years after IPO	0.09925	0.01284	0.137	1.5	0.35252025	Capx/asset 2 years after IPO
OPINC/asset 3 years after IPO	0.10059	-0.00805	0.513	-0.7	-1.00444411	Capx/asset 3 years after IPO
OPINC/asset 4 years after IPO	0.15549	0.004503	0.278	-1.1	-0.19289778	Capx/asset 4 years after IPO

*Capx = capital expenditures

Intercept stands for the coefficient value of the intercept.

Panel C

Dependent variable	Intercept	Adjusted R^2	P value	T stat	Wacp / asset regression coefficient	Independent variable
OCF/asset prior to IPO	0.07236	0.758371	1E-36	19	0.14626293	Wacp**/asset prior to IPO
OCF/asset in year of IPO	0.1358	0.178741	2E-06	-5	-0.33424348	Wacp/asset in year of IPO
OCF/asset 1 year after IPO	0.11199	0.010823	0.146	-1.5	-0.1454953	Wacp/asset 1 year after IPO
OCF/asset 2years after IPO	0.12084	0.075296	0.004	-2.9	-0.23991072	Wacp/asset 2 years after IPO
OCF/asset 3 years after IPO	-0.2249	0.062948	0.021	2.4	1.6009161	Wacp/asset 3 years after IPO
OCF/asset 4 years after IPO	0.09319	-0.02354	0.917	0.1	0.00623341	Wacp/asset 4 years after IPO

** Wcap = Working capital

Intercept stands for the coefficient value of the intercept.

Dependent variable	Intercept	Adjusted R^2	P value	T stat	Wacp /asset regression coefficient	Independent variable
OPINC/asset prior to IPO	0.10323	0.745051	3E-35	18	0.15518694	Wacp /asset prior to IPO
OPINC/asset in year of IPO	0.16687	0.034229	0.028	-2.2	-0.14027824	Wacp /asset in year of IPO
OPINC/asset 1 year after IPO	0.15593	-0.00281	0.404	-0.8	-0.09053541	Wacp /asset 1 year after IPO
OPINC/asset 2years after IPO	0.16013	0.039318	0.029	-2.2	-0.23744069	Wacp /asset 2 years after IPO
OPINC/asset 3 years after IPO	-0.1713	0.068762	0.016	2.5	1.54215574	Wacp /asset 3 years after IPO
OPINC/asset 4 years after IPO	0.14711	-0.0232	0.961	-0	-0.00264878	Wacp /asset 4 years after IPO

** Wcap = Working capital

Intercept stands for the coefficient value of the intercept.

Panel D

Dependent variable	Intercept	Adjusted R^2	P value	T stat	Emp/ asset regression coefficient	Independent variable
OCF/asset prior to IPO	0.04911	0.012118	0.125	1.5	4.60311471	Emp***/asset prior to IPO
OCF/asset in year of IPO	0.06869	0.026746	0.046	2	2.50004558	Emp/asset in year of IPO
OCF/asset 1 year after IPO	0.06995	0.026558	0.05	2	3.00441807	Emp /asset 1 year after IPO
OCF/asset 2years after IPO	0.06275	0.033414	0.04	2.1	2.95849269	Emp/asset 2 years after IPO
OCF/asset 3 years after IPO	-0.0142	-0.0147	0.99	1	0.13994739	Emp/asset 3 years after IPO
OCF/asset 4 years after IPO	0.08128	0.025415	0.153	1.5	0.99276236	Emp/asset 4 years after IPO

*** Emp= Employees

Intercept stands for the coefficient value of the intercept.

Dependent variable	Intercept	Adjusted R^2	P value	T stat	Emp/ asset regression coefficient	Independent variable
OPINC/asset prior to IPO	0.0749	0.01911	0.076	1.8	5.68678777	Emp/asset prior to IPO
OPINC/asset in year of IPO	0.1233	0.069023	0.003	3.1	3.22998959	Emp/asset in year of IPO
OPINC/asset 1 year after IPO	0.11785	0.033784	0.032	2.2	3.58526974	Emp/asset 1 year after IPO
OPINC/asset 2years after IPO	0.09818	0.028883	0.923	1.9	3.64544157	Emp/asset 2 years after IPO
OPINC/asset 3 years after IPO	0.03678	-0.01457	0.923	-0.1	3.75933267	Emp/asset 3 years after IPO
OPINC/asset 4 years after IPO	0.14648	-0.02321	0.965	0	0.03056323	Emp/asset 4 years after IPO

*** Emp= Employees

Intercept stands for the coefficient value of the intercept.

All the P values are for the independent variables.

All the t-values are for the independent variables.

after public offering. The correlation between capital expenditure and OPINC/asset reflects similar path in terms of no significance. On the other hand, both working capital from year -1 to +1 and the working capital from -1 and average of one to four years after public offering show highly significant (99.99%) relationship with both OCF/asset from -1 to +1, OCF/asset from -1 and average of one to four years after offering, OPINC/asset from -1 to +1 and OPINC/asset from -1 and average of one to four years after offering. Meanwhile, employment level change in years shows no significant relation with OCF/asset change in years, but as it can be seen from Table 8 Panel D, while employment level has no significant correlation in prior year to IPO, there is a significant relationship between employment level and both OCF/asset and OPINC/asset in the year and one year after public offering. Yet, employment level from prior IPO to one year after offering has 95% significant correlation with OPINC/asset from prior IPO.

We also checked whether is there any relationship between debt/capital and both working capital and capital expenditures (Table 8 Panel E). Between the years of prior to initial offering to one year after offering there is no significant correlation observed between debt/capital and neither with capital expenditure/asset nor with working capital/asset. The evidences shows almost similar pattern for the years between prior to IPO to average of the years after offering.

Cross sectional analysis is also conducted in order to investigate which cross-sectional variation in the change in performance of the reverse leverage buyout firms can be explained by changes in leverage, expenditures in capital, working capital and employment level. In order to conduct this analysis, accounting performance measures are assumed as a good reflector of firms' performances. Evidence of the significance of the accounting performance measures is documented in random samples by investigating the relation between change in independent variables and change in accounting performances. As it also mentioned by Holthausen and

Table 9

Panel A

	Independent variable				
Dependent Variable	Intercept	Change in debt/capital from -1 to +1	Adj. R^2	F-stat	t-stat of debt/capital
Change in firm OCF/assets from year -1 to +1	0.03652	0.070270026	0.033541	3.887024	1.971553734
Change in firm OPINC/assets from year -1 to +1	0.060157	0.087851827	0.035872	5.204346	2.2813035

	Independent variable				
Dependent Variable	Intercept	Change in debt/capital from -1 to Avg. +1 to +4	Adj. R^2	F-stat	t-stat of debt/capital
Change in firm OCF/assets from year -1 to the average of years +1 to +4	0.03845	0.108798591	0.398283	70.5005	8.396457841
Change in firm OPINC/assets from year -1 to the average of years +1 to +4	0.047316	0.100485483	0.307583	47.64279	6.902375436

Panel B

	Independent variable				
Dependent Variable	Intercept	Change in capital expenditure/asset from -1 to +1	Adj. R^2	F-stat	t-stat of capx/capital
Change in firm OCF/assets from year -1 to +1	0.017406	-0.101122259	-0.0073	0.181032	-0.42547868
Change in firm OPINC/assets from year -1 to +1	0.038735	-0.269820794	0.00089	1.100619	-1.04910402

	Independent variable				
Dependent Variable	Intercept	Change in capital expenditure/asset from -1 to Avg. +1 to +4	Adj. R^2	F-stat	t-stat of capx/capital
Change in firm OCF/assets from year -1 to the average of years +1 to +4	-0.00358	0.174944782	-0.00346	0.6383	0.798936818
Change in firm OPINC/assets from year -1 to the average of years +1 to +4	0.015778	-0.166176843	-0.00455	0.524458	-0.72419489

Panel C

Independent variable

Dependent Variable	Intercept	Change in working capital/asset from -1 to +1	Adj. R^2	F-stat	t-stat of working capital/ asset
Change in firm OCF/assets from year -1 to +1	0.001896	0.097434009	0.523321	125.057	11.18288902
Change in firm OPINC/assets from year -1 to +1	0.019589	0.102565292	0.490616	109.8364	10.48028806

Independent variable

Dependent Variable	Intercept	Change in working capital/asset from -1 to Avg. +1 to +4	Adj. R^2	F-stat	t-stat of working capital/ asset
Change in firm OCF/assets from year -1 to the average of years +1 to +4	0.021068	-0.142307654	0.475004	96.00167	-9.79804408
Change in firm OPINC/assets from year -1 to the average of years +1 to +4	0.029084	-0.116498239	0.286461	43.15374	-6.56915051

Panel D

Independent variable

Dependent Variable	Intercept	Change in Employees/ asset from -1 to +1	Adj. R^2	F-stat	t-stat of employees/ asset
Change in firm OCF/assets from year -1 to +1	0.009738	3.066698524	0.007196	1.819029	1.348713697
Change in firm OPINC/assets from year -1 to +1	0.023894	5.273181853	0.034855	5.080855	2.254075238

Independent variable

Dependent Variable	Intercept	Change in Employees/ asset from -1 to Avg. +1 to +4	Adj. R^2	F-stat	t-stat of employees/ asset
Change in firm OCF/assets from year -1 to the average of years +1 to +4	-0.00804	2.445236384	-0.00144	0.837069	0.914915002
Change in firm OPINC/assets from year -1 to the average of years +1 to +4	0.003588	3.069633339	0.00236	1.26732	1.125753062

Panel E

Independent variable

Dependent Variable	Intercept	Change in debt/capital from -1 to +1	Adj. R^2	F-stat	t-stat of debt/capital
Change in firm working capital/assets from year -1 to +1	0.221401	0.269923936	0.004735	1.537589	1.239995626
Change in firm capital expenditure/assets from year -1 to +1	0.017545	0.000980207	-0.00889	0.00378	0.061479994

Independent variable

Dependent Variable	Intercept	Change in debt/capital from -1 to Avg. +1 to +4	Adj. R^2	F-stat	t-stat of debt/capital
Change in firm working capital/assets from year -1 to the average of years +1 to +4	0.21627	0.196184448	0.003913	1.443953	1.201645891
Change in firm capital expenditure/assets from year -1 to the average of years +1 to +4	0.017517	0.013696468	0.02216	3.560884	1.887030438

Average +1 to +4 is the simple average of OPINC/asset (OCF/asset, working capital/asset, capital expenditure/asset, employment level/asset) over the time period consisting of the first fiscal year after the IPO to the fourth fiscal year after IPO.

Larcker (1996), if there is any reduction in the leverage in order to obtain better performance, we should detect positive coefficient on the leverage when OCF/assets and OPINC/assets are dependent variable; but if there is a great amount of leverage be seen, reducing the leverage from the structure should increase performance and the leverage coefficient should be negative. We assume that the optimal organizational structure (in terms of debt) does not change at the time of reverse LBO in order to make this assumption. In addition, parallel to Holthausen and Larcker's study conducted in 1996, if an increase in capital expenditure, there could be sing of poorer performance while increase or a positive coefficient in working capital can be good sign for the companies' performances since if current assets do not exceed current liabilities, then firm may run into trouble paying back creditors in the short term.In the cross sectional analysis, the accounting performances (OCF/assets and OPINC/asset) between the year before IPO and one year after the offering, and between the year prior to IPO and average of one year and four years after the initial public offering are taken as dependent variables while debt/capital (leverage), working capital/asset, capital expenditures and employment level between the year prior to IPO and one year after IPO are taken as independent variables.

As it can be seen from Table 10, while the coefficients of leverage for both OPINC/assets between the year before IPO and one year after the offering and OCF/assets between the year before IPO and one year after the offering are positive as well as the coefficient of OPINC/assets between the year prior to IPO and average of one year and four years after the initial public offering, the coefficient of debt/capital for OCF/assets between the year prior to IPO and average of one year and four years after IPO is negative. However, the evidences suggest that the changes in the leverage levels seem unimportant since their t-stat is notably small.

Table 10

	Intercept	Change in debt/capital	Change in Capex/asset	Change in Emp/asset	Change in Wacp /asset	Adj. R^2	F-stat.
OPINC/asset from -1 to+1	0.01120	0.02569	0.20486	4.58722	0.15176	0.51	27.78
*	(0.42583)	(0.71881)	(0.97201)	(2.47400)	(10.05049)		0.00
OCF/asset from -1 to +1	-0.01002	0.00421	0.36575	0.48824	0.15745	0.55	33.61
*	(-0.4194)	(0.1295)	(1.9098)	(0.2898)	(11.4751)		0.00
OPINC/asset from -1 to avg. +1 to +4	-0.01863	0.02482	0.70382	2.87733	0.15370	0.49	25.93
*	(-0.6720)	(0.65893)	(3.16858)	(1.47239)	(9.65756)		0.00
OCF/asset from -1 to avg. +1 to +4	-0.04081	-0.01121	0.76111	0.97235	0.15282	0.48	25.10
*	(-1.4794)	(-0.29917)	(3.44292)	(0.49995)	(9.64848)		0.00

(*) states t-test results for each independent variable in the cross sectional analysis

Even though, the coefficients of capital expenditure for both accounting performance between the specified years show positivity, the OCF/assets accounting performance between the year prior to IPO and average of one year and four years after the initial public offering is significant at 99.998% level when OPINC/assets between the year prior to IPO and average of one year and four years after the initial public offering is 99% significant. While OCF/assets between the year prior to IPO and one year after IPO is 90% significant, OPINC/assets between the year before IPO and one year after the offering is insignificant with capital expenditures/assets. On the other hand, the working capital is highly significant (99.999%) and

meaningful for both accounting performances for the both specified periods. However, the employment level is only shows significant result for OPINC/assets between the year before IPO and one year after the offering even though the coefficient of it is positive for both accounting performances for the both specified periods. Since the evidences suggest that the accounting performances (for specifically this sample) used in the cross sectional analysis are not reliable as the ones we used for the firms in general.

6. Conclusion

In this paper, we examine operating performance and capital structure for as well as capital expenditures, working capital and employment management for a reverse leverage buyout sample between 2000 and 2008. The major findings in the paper are that the firms continuously outperform their industry peers for the following four years of initial public offering, while the average debt/capital level decreases in years. Even though Degeorge and Zechauser (1993) claims reverse LBO firms outperform only before they went public, we find similar to Hotlhausen and Larcker (1996) and Mian and Rosenfeld (1993) that the reverse leverage buyout companies exceed their industry peers on performance. Moreover, the evidence suggest a performance weakness in the second year of an IPO while they are still exceed their counterparts on performance.

Thus, we reject the null hypothesis ($H_{1,o}$) of no decrease in mean leverage ratio of the reverse leverage buyout companies

$H_{1,o}$ = There is no decrease in mean leverage ratio of the reverse leverage buyout companies in time compare to the year before initial public offering.

$H_{1,a}$ = There is a decrease in mean leverage ratio of the reverse leverage buyout companies in time compare to the year before initial public offering.

Moreover, we reject the null hypothesis of that accounting performance of RLBO corporations does not differ from their industry peers since we find that their operating performance is generally superior to their peers.

$H_{2,o}$ = Accounting performances of RLBO corporations does not show any difference from the accounting performance of their industry peers

$H_{2,a}$ = Accounting performances of RLBO corporations does show differences from the accounting performances of their industry peers

With regard to capital expenditure, we find that the reverse leverage buyout firms typically spent less on capital equipment than their counterparts. Holthausen and Larcker (1996) who claimed that the reverse leverage buyout firms spent less on capital expenditures prior to IPO compare to the industry equivalents, while there is no difference for the later years. Since we find that the mean level of capital expenditures is continuously decreasing after the year of the IPO. The capital expenditure median levels in +1, +2, +3 years after IPO almost stay the same. Similar to the past studies of Kaplan (1989), Smith (1990) and Muscarella and Vetsuypens (1990) there is evidence that RLBO corporations overinvest in capital expenditures

With respect to working capital management, the evidence suggests that reverse leverage buyout companies carry less working capital than their industry equivalents. Our results are similar to Holthausen and Larcker (1996) on working capital since they also found additionally, based on their sample between 1983 and 1988, that the reverse LBO firms was carrying approximately half of the working capital carried by their industry counterparts.

In terms of employment management of the reverse leverage buyout firms, there is not much difference observed for reverse LBO firms' staffing level and their industry peers' level. Yet, the evidence refer a continuous increase in employment level starting from the two years after initial public offering and continue to four years after the offering.

We reject the third null hypothesis which is reverse LBO firms have no dissimilarities from their industry counterparts' median level in terms of spending on capital expenditures. We also reject the fourth null hypothesis since the evidence reflects that reverse LBO firms carry less working capital compare to their industry peers. For employment level, we accept the fifth null hypothesis.

We also conducted sectional and cross-sectional regression analyses, and based on these analyses, the evidence suggest debt/capital and working capital/assets are highly correlated with accounting performances while neither capital expenditure/assets not employees/asset are related. So, our results give contradictory suggestions about Holthausen and Larcker (1996) comment on a little correlation between capital expenditures/ asset and debt/capital between the years of prior to initial offering to one year after offering.

So, the null hypothesis ($H_{6,o}$) of change in accounting performance (measured from one year before to one up to four years after becoming reverse IPO) is unrelated to change in leverage is also rejected since the evidence reflects a significant association between debt/capital and the accounting performances. But, we accept the null hypothesis ($H_{7,o}$) of change in accounting performances (measured from one year before to up to four years after becoming reverse LBO) is unrelated to change in capital expenditures since the evidences stated earlier show that there is no relation between the capital expenditure/assets and accounting performances either in any of year related with IPO or in any of year period specified earlier. On the other hand, we reject the null hypothesis ($H_{8,o}$) change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in working capital since there is significant association found between accounting performances from one year prior to IPO to one up to four years after the IPO. However, while we are accepting the $H_{9,o}$ (stated below), we

should also mention the fact that there is an evidence of a significant association between the accounting performances and the employment level between the prior year of IPO and the year after IPO.

$H_{9,o}$ = Change in accounting performances (measured from one year before to one up to four years after the reverse LBO) is unrelated to change in employment level

$H_{9,a}$ = Change in accounting performances (measured from one year before to up to four years after the reverse LBO) is related to change in employment level

The results in this paper add some strong evidences of positive association between debt leverage and performance level as well as working capital and performance level of the reverse leverage buyout firms.

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