Internet Appendix
for "Do Buyouts (Still) Create Value?"*

Shourun Guo, Edith Hotchkiss and Weihong Song

This internet appendix provides supplemental analyses to the main tables in "Do Buyouts (Still) Create Value?" The first two tables summarize the returns to capital for our sample of public to private buyouts (Table IA.TS1) and the sources of those returns (Table IA.TS2) for use as teaching slides. The remaining tables are labeled to correspond to tables in the main paper as follows:

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Table IA.TS1
Median Realized Returns to Pre- and Post-buyout Capital

This table summarizes the market- & risk-adjusted returns to capital, calculated by discounting the interim payments and terminal value to the pre- or post-buyout capital date. The discount rate is equal to $r_f*(1-\beta_u) + \beta_u*r_m$, where r_f is the one month T-bill return (Ibbotson) and r_m is the realized return on the S&P 500 from the pre- or post-buyout date to the date of the cash flow. β_u is the asset beta calculated using stock returns for up to 60 months prior to the buyout and the pre-buyout debt to equity ratio. Significance levels are based on Wilcoxon signed-rank tests. a, b, and c indicate significance at the 1%, 5%, and 10% level, respectively.

Outcome	**N**	Realized Return to Pre-buyout Capital	Realized Return to Post-buyout Capital
1: IPO	28	103.4%[a]	66.9%[a]
2: Sold	15	47.0%[b]	22.2%[c]
3: 2nd LBO	13	94.4%[a]	64.4%[a]
4: Chapter 11	14	-36.5%[b]	-59.7%[a]
5: Still private	20	86.5%[a]	43.1%[a]
Total (1-5)	90	72.5%[a]	40.9%[a]

Table IA.TS2
Impact of Changes in Operating Performance, Valuation Multiples, and Tax Benefits of Debt on Return to Pre-buyout Capital

This table shows the proportion of the return that can be attributed to each factor. The change in each factor is defined as the ratio of the difference between the realized and "hypothetical" return to the absolute value of the realized return. Hypothetical returns are calculated as follows:
Panel A, Operating performance: we calculate a hypothetical return that would have been realized if the firm's profitability, adjusted for the profitability of firms matched on industry, size, book-to-market, and pre-buyout performance, had remained at its pre-buyout level.
Panel B, Industry valuation multiples: a hypothetical terminal value is calculated by assuming the industry, market, or (industry minus market) valuation multiple remains constant at the pre- or post-buyout level.
Panel C, Tax benefits of increased debt: for each year the firm is private, hypothetical tax payments are calculated assuming the firm maintains its pre-buyout interest coverage level, or pays interest at the pre-buyout level in unprofitable years. The present value of annual tax benefits while private is calculated as the sum of the differences between the hypothetical tax payments and those based on the actual interest deductions realized by the firm. The terminal value (TV) tax benefit is calculated as $(I_{Actual}*t/r - I_{hypothetical}*t/r)$ using the final year's hypothetical interest payments.

		A. Proportion of return due to:	B. Proportion of return due to:	C. Proportion of return due to:	
Outcome	N	Change in operating performance	Change in industry multiple	Annual tax benefit of increased debt	Annual plus TV tax benefit
1: IPO	28	31.9%	26.2%	2.4%	13.9%
2: Sold	15	8.4%	18.1%	11.0%	42.9%
3: 2nd LBO	13	34.3%	19.7%	4.2%	28.6%
4: Chapter 11	14	-134.5%	2.2%	4.6%	145.3%
5: Still private	20	24.0%	31.7%	3.4%	33.7%
Total (1-5)	90	22.9%	17.7%	3.4%	33.8%

Table IA.V.1
Realized Returns to Pre- and Post-buyout Capital:
Comparison of Returns Using Observed Versus Estimated Terminal Value

This table shows returns for the subsample of firms for which terminal values are observed at the deal outcome, comparing them to returns based on a terminal value estimated as a multiple of EBITDA. Returns are calculated as in Table V. Significance levels are based on a two-tailed *t*-test for means and Wilcoxon signed-rank test for medians. a, b, and c indicate significance at the 1%, 5%, and 10% level, respectively.

		Return using observed TV		Return using TV from EBITDA multiples		*p*-value	
	N	mean	median	mean	median	*t*-test on the mean	Wilcoxon test on the median
Nominal return to pre-buyout capital	59	157.8%	99.0%	154.2%	93.3%	0.897	0.308
Nominal return to post-buyout capital	59	100.1%	71.0%	87.8%	70.7%	0.521	0.349
Market- & risk-adj. return to pre-buyout capital	59	109.7%	76.8%	103.3%	69.4%	0.710	0.502
Market- & risk-adj. return to post-buyout capital	59	76.2%	49.7%	65.7%	42.8%	0.572	0.541

Table IA.V.2
Realized Returns to Pre- and Post-buyout Capital: Public Debt Subsample

This table shows returns for the subsample of firms using public debt to finance the buyout, for which data is available from post-buyout 10-Ks regardless of the deal outcome. Returns are calculated as in Table V. Significance levels are based on a two-tailed *t*-test for means and Wilcoxon signed-ranks test for medians. a, b, and c indicate significance at the 1%, 5%, and 10% level, respectively.

			Nominal return			Market- & risk-adjusted return		
Outcome	Capital	N	Mean	Median	# of positive returns	Mean	Median	# of positive Returns
1. IPO	Pre	16	262.9%[a]	178.6%[a]	16	162.0%[a]	103.4%[a]	14
	Post	16	159.1%[a]	109.1%[a]	15	115.1%[a]	66.9%[a]	14
2. Acquired	Pre	12	129.3%[a]	130.6%[b]	10	84.4%[b]	52.0%[b]	10
	Post	12	81.6%[a]	61.7%[b]	10	57.5%[b]	26.5%[c]	10
3. 2nd LBO	Pre	7	167.4%[b]	92.9%[b]	7	113.3%[b]	76.8%[b]	7
	Post	7	132.9%[c]	76.0%[b]	7	93.3%[b]	73.3%[b]	7
4. Chapter 11	Pre	13	-25.8%	-34.0%	4	-40.5%[b]	-38.3%[b]	2
	Post	13	-51.2%[a]	-54.6%[a]	3	-55.5%[a]	-60.0%[a]	1
5. Still private or unknown	Pre	17	202.3%[a]	141.7%[a]	17	112.7%[a]	91.2%[a]	17
	Post	17	122.8%[a]	75.7%[a]	16	68.2%[a]	45.1%[a]	15
Total (1-5)	Pre	65	154.3%[a]	103.6%[a]	54	89.1%[a]	65.1%[a]	50
	Post	65	90.4%[a]	63.6%[a]	51	55.7%[a]	39.8%[a]	47
Total (1-4)	Pre	48	137.4%[a]	86.5%[a]	37	80.7%[a]	54.2%[a]	33
	Post	48	79.0%[a]	56.1%[a]	35	51.3%[a]	33.3%[a]	32

Table IA.VI.1
Changes in Operating Performance from Pre-buyout Period to Post-buyout Period: Public Debt Subsample

Panel A reports median changes in cash flow performance relative to the fiscal year ending prior to completion of the buyout (year -1). Year +1 is the first full fiscal year following the year of buyout completion. Last Year is the last post-buyout fiscal year available prior to the deal outcome or the last available fiscal year for deals still private. Panel B reports median changes in cash flow performance from year -1 to the last year grouped by outcome. Adjusted percentage change equals the difference between the change for the buyout company and the change for the median of a portfolio of matching firms. Industry-adjusted change subtracts the median for firms in the same four-digit SIC code. *Ind&perf&M/B*-adjusted change matches on industry, performance at year -1, the change in performance from years -2 to -1, and the market-to-book ratio at year -1. Net cash flow is defined as EBITDA minus capital expenditures. Total assets are the average reported assets at the beginning and end of the fiscal year. Data are obtained from Compustat, 10Ks, and other SEC filings. Significance levels of medians are based on a two-tailed Wilcoxon rank test. a, b, and c denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: % change in operating performance from year i to year j (# observations; # positive observations)

	-2 to -1	-1 to +1	-1 to +2	-1 to +3	-1, last year	-1, last year: deals with outcome
A.1. Profitability:						
EBITDA / sales						
Unadjusted percentage change	5.53%[a] (66;42)	-2.83% (62; 25)	-9.05%[a] (44; 14)	-15.66%[b] (34; 11)	-12.55%[a] (66; 22)	-11.63%[b] (49; 17)
Industry-adjusted percentage change	1.72% (66; 36)	6.03% (62; 37)	3.45% (44; 25)	5.15% (34; 17)	-0.18% (66; 31)	-0.54% (49; 23)
Ind&perf&M/B-adjusted percentage change	-0.26% (66; 32)	7.37%[c] (62; 39)	11.43%[c] (44; 26)	-14.52% (34; 14)	3.75% (66; 35)	3.26% (49; 26)
Net cash flow / sales						
Unadjusted percentage change	15.24%[a] (66; 44)	-7.93% (62; 28)	-7.63% (44; 17)	-10.24% (34; 14)	-16.40% (66; 25)	-15.31% (49; 19)
Industry-adjusted percentage change	17.65%[a] (66; 42)	4.86% (62; 33)	-1.17% (44; 23)	-16.62% (34; 14)	-16.14% (65; 28)	-22.02% (48; 21)
Ind&perf&M/B-adjusted percentage change	-2.88% (66; 33)	11.79% (62; 38)	7.77% (44; 23)	-18.80% (34; 14)	4.51% (66; 36)	2.30% (49; 25)
A.2. Return on assets:						
EBITDA / total assets						
Unadjusted percentage change	10.79%[a] (66; 50)	-13.07%[b] (62; 25)	-18.41%[a] (44; 13)	-19.91%[a] (34; 7)	-11.06% (66; 24)	-13.27% (49; 17)
Industry-adjusted percentage change	12.29%[a] (66; 45)	6.29% (62; 37)	1.74% (44; 24)	-5.88% (34; 12)	-2.14% (66; 34)	-0.53% (49; 26)
Ind&perf&M/B-adjusted percentage change	0.19% (66; 30)	3.72% (62; 31)	4.11% (44; 24)	-1.00% (34; 17)	6.80% (66; 37)	6.07% (49; 26)
Net cash flow / total assets						
Unadjusted percentage change	25.77%[a] (66; 44)	-17.09% (62; 26)	-13.71% (44; 18)	-10.17% (34; 10)	-8.68% (66; 25)	-6.65% (49; 19)
Industry-adjusted percentage change	27.33%[a] (66; 47)	12.06% (62; 30)	7.20% (44; 25)	-4.05% (34; 18)	1.60% (66; 32)	9.95% (49; 23)
Ind&perf.&M/B-adjusted percentage change	6.75% (66; 31)	-2.55% (62; 30)	18.16%[b] (44; 26)	-4.67% (34; 16)	16.09%[b] (66; 38)	14.46% (49; 26)

Panel B: % change in operating performance from year -1 to last (# observations; # positive observations), grouped by outcome

	IPO	Sold	2nd LBO	Chapter 11	Still private	All deals
B.1. Profitability						
EBITDA / sales						
Unadjusted percentage change	12.09% (16; 9)	-15.92% (13; 4)	4.77% (7; 4)	-56.76%[a] (13; 0)	-13.47%[c] (17; 5)	-12.55%[a] (66; 22)
Industry-adjusted percentage change	29.16%[b] (16; 12)	-12.52% (13; 4)	10.56% (7; 5)	-40.04%[b] (13; 2)	0.23% (17; 8)	-0.18% (66; 31)
Ind&perf&M/B-adjusted percentage change	16.73%[a] (16; 14)	-7.04% (13; 6)	6.26% (7; 4)	-56.03%[a] (13; 2)	8.41% (17; 9)	3.75% (66; 35)
Net cash flow / sales						
Unadjusted percentage change	15.80% (16; 10)	-34.23% (13; 3)	4.72% (7; 4)	-62.46%[c] (13; 2)	-21.08% (17; 6)	-16.40% (66; 25)
Industry-adjusted percentage change	33.31% (16; 11)	-46.36% (13; 3)	-12.95% (6; 3)	-24.77% (13; 4)	-5.17% (17; 7)	-16.14% (65; 28)
Ind&perf&M/B-adjusted percentage change	38.98%[c] (16; 11)	-17.47% (13; 5)	13.34%[c] (7; 6)	-82.83%[b] (13; 3)	6.72% (17; 11)	4.51% (66; 36)
B.2. Return on assets						
EBITDA / total assets						
Unadjusted percentage change	2.34% (16; 8)	-14.70% (13; 4)	15.29% (7; 4)	-53.25%[a] (13; 1)	-6.51% (17; 7)	-11.06% (66; 24)
Industry-adjusted percentage change	11.29% (16; 11)	-19.25% (13; 5)	36.31%[c] (7; 6)	-18.34% (13; 4)	-5.05% (17; 8)	-2.14% (66; 34)
Ind&perf&M/B-adjusted percentage change	21.61%[b] (16; 12)	-12.67% (13; 6)	31.77% (7; 5)	-35.61%[c] (13; 3)	6.86% (17; 11)	6.80% (66; 37)
Net cash flow / total assets						
Unadjusted percentage change	2.37% (16; 8)	-35.26% (13; 3)	21.22% (7; 5)	-55.86%[c] (13; 3)	-11.42% (17; 6)	-8.68% (66; 25)
Industry-adjusted percentage change	25.96% (16; 9)	-42.41% (13; 3)	47.68% (7; 5)	-13.21% (13; 6)	-0.16% (17; 9)	1.60% (66; 32)
Ind&perf&M/B-adjusted percentage change	22.27%[c] (16; 11)	-36.54% (13; 4)	49.34%[c] (7; 6)	-3.32% (13; 5)	26.28% (17, 12)	16.09%[b] (66; 38)

Table IA.VI.2
Cumulative Sales Growth

This table reports median changes in sales relative to the fiscal year ending prior to completion of the buyout (year -1). Year +1 is the first full fiscal year following the year of buyout completion. Last year is the last post-buyout fiscal year available prior to the deal outcome or the last available fiscal year for deals still private. Industry-adjusted change subtracts the median for firms in the same four-digit SIC code. Data are obtained from Compustat, 10Ks, and other SEC filings.

	IPO	Sold	2nd LBO	Chapter 11	Still private	All deals	Deals with outcomes
Sales growth rate from (-1, 0)	10.65%	5.63%	5.15%	6.68%	8.62%	8.48%[a]	7.93%[a]
Industry-adj. sales growth rate from (-1, 0)	-1.51%	-3.25%	-2.42%	-8.92%	0.91%	-1.02%	-2.87%
# observations	27	16	12	13	20	88	68
Sales growth rate from (-1, +1)	22.33%	8.13%	13.48%	5.01%	20.23%	17.76%[a]	13.57%[a]
Industry-adj. sales growth rate from (-1, +1)	0.59%	-4.95%	-2.60%	-15.05%	-1.11%	-2.91%	-3.88%
# observations	22	17	13	14	20	88	66
Sales growth rate from (-1, +2)	23.59%	6.77%	38.67%	14.75%	37.89%	23.68%[a]	17.46%[a]
Industry-adj. sales growth rate from (-1, +2)	-9.26%	-12.33%	14.64%	-2.77%	2.28%	-1.00%	-7.95%
# observations	13	11	8	12	16	88	44
Sales growth rate from (-1, +3)	26.81%	19.74%	68.94%	23.03%	52.66%	30.77%[a]	26.81%[a]
Industry-adj. sales growth rate from (-1, +3)	-7.95%	-8.08%	36.88%	-13.23%	-4.14%	-6.46%	-7.65%
# observations	11	12	5	9	11	88	37
Sales growth rate from (-1, last)	27.42%	22.56%	20.62%	23.53%	40.39%	27.42%[a]	23.88%[a]
Industry-adj. sales growth rate from (-1, last)	2.99%	-1.07%	15.71%	-35.65%	-6.16%	-3.18%	-2.50%
# observations	28	18	14	14	20	94	74

Table IA.VIII
Regressions for Operating Performance: Robustness Checks

This table shows additional specifications for the regressions shown in Table VIII of the paper. Change in sales/NWC is defined as the change in the ratio of sales to net working capital ratio from the pre-buyout year to the last post-buyout year prior to the deal outcome. All other variables are as defined in Tables VII and VIII of the paper.

	Full Sample:			Public debt subsample:
	ROA at last Yr	Change in adjusted ROS (-1, last)	Change in adjusted ROS (-1, last)	Change in adjusted ROS (-1, last)
Change in sales/NWC		0.000	0.000	
		(0.777)	(0.994)	
ln(capital)	-0.028	-0.002	0.005	0.005
	(0.105)	(0.901)	(0.804)	(0.844)
Adjusted ROS -1	**0.356**	-0.988	-1.368	**-1.619**
	(0.076)	(0.190)	(0.119)	(0.071)
Matching firms' ROA (ROS) at last yr	0.271			
	(0.275)			
Mgmt equity pct	-0.125	-0.161	-0.172	-0.334
	(0.471)	(0.261)	(0.241)	(0.125)
Pre-buyout leverage	-0.004	**0.016**		0.011
	(0.579)	(0.005)		(0.234)
Leverage change	0.010	**0.022**		**0.028**
	(0.103)	(0.001)		(0.002)
Bank/debt			0.038	
			(0.505)	
Mgmt change	0.049	**0.106**	**0.106**	**0.113**
	(0.254)	(0.024)	(0.030)	(0.072)
CEO_chair	**0.090**	**0.142**	**0.124**	**0.127**
	(0.016)	(0.001)	(0.023)	(0.023)
Mgmtchg*CEO_chair	**-0.082**	**-0.159**	**-0.121**	**-0.148**
	(0.094)	(0.003)	(0.074)	(0.043)
ln (boardsize)	-0.068	0.010	-0.006	0.045
	(0.199)	(0.821)	(0.914)	(0.552)
Sponsor dir. ratio	-0.095	-0.101	-0.085	-0.089
	(0.242)	(0.136)	(0.232)	(0.443)
Club PE	**0.093**	0.030	0.009	0.044
	(0.021)	(0.403)	(0.820)	(0.440)
Asset sales / capital	0.010	0.078	0.144	0.231
	(0.890)	(0.326)	(0.239)	(0.190)
Acquisitions / capital	-0.044	0.043	0.102	0.061
	(0.437)	(0.329)	(0.130)	(0.352)
Year dummies	Included	Included	Included	Included
Constant	0.360	-0.146	-0.052	-0.247
	(0.050)	(0.294)	(0.721)	(0.201)
Observations	68	65	65	46
Adjusted-R^2	0.047	0.463	0.223	0.295

Table IA.IX.1
Impact of Changes in Operating Performance on Returns

This table provides details of the impact of operating performance on the returns to pre- or post-buyout capital as reported in Table V of the paper. For each post-buyout year, we calculate a hypothetical after-tax cash flow such that EBITDA/sales is equal to the pre-buyout level; we then calculate a hypothetical return using this adjusted cash flow. We calculate the impact of this change in cash flow separately for (1) the interim cash flows and (2) the terminal value (TV, equal to the final year's cash flow times the industry valuation multiple at exit). The proportion of the return due to the change in operating performance is defined as the ratio of the difference between the realized and hypothetical return to the absolute value of the realized return. Median returns are reported for each outcome group.

						Proportion of return due to:		
Outcome	N	Realized return to pre- or post-buyout capital	(1) Return with hypothetical interim cash flows	(2) Return with hypothetical interim cash flows and TV	(1+2) Return with hypothetical interim cash flows and TV	(1)	(2)	(1+2)
Return to pre-buyout capital:								
1: IPO	28	103.4%	87.4%	65.7%	61.8%	1.9%	27.2%	31.9%
2: Sold	15	47.0%	41.6%	30.1%	28.2%	2.6%	12.4%	8.4%
3: 2nd LBO	13	94.4%	87.9%	45.9%	40.9%	5.7%	28.4%	34.3%
4: Chapter 11	14	-36.5%	-39.0%	3.9%	14.3%	-5.2%	-117.5%	-134.5%
5: Still private	20	86.5%	80.0%	97.9%	93.5%	1.8%	20.2%	24.0%
Total (1-5)	90	72.5%	74.9%	49.8%	55.5%	1.6%	16.8%	22.9%
Total (1-4)	70	68.7%	70.8%	42.7%	39.4%	1.4%	14.6%	17.6%
Return to post-buyout capital:								
1: IPO	28	66.9%	62.5%	35.2%	36.3%	2.5%	40.3%	43.1%
2: Sold	15	22.2%	22.3%	9.6%	9.7%	4.0%	20.3%	13.8%
3: 2nd LBO	13	64.4%	59.9%	35.1%	45.0%	4.4%	22.4%	35.4%
4: Chapter 11	14	-59.7%	-54.1%	5.6%	6.9%	-6.6%	-114.0%	-118.3%
5: Still private	20	43.1%	44.9%	56.3%	56.2%	2.9%	25.9%	32.8%
Total (1-5)	90	40.9%	41.6%	33.2%	34.9%	2.2%	18.9%	18.5%
Total (1-4)	70	38.8%	36.5%	26.5%	26.7%	1.9%	16.1%	14.6%

Table IA.IX.2
Impact of Valuation Multiples on Returns

This table shows the impact of valuation multiples on returns to pre- or post-buyout capital as reported in Table V. To obtain hypothetical returns, a hypothetical terminal value is calculated by assuming the industry, market, or (industry minus market) valuation multiple remains constant at the pre- or post-buyout level. The proportion of the return due to the change in multiple is defined as the ratio of the difference between the realized and hypothetical return to the absolute value of the realized return of the buyout firm.

			Median hypothetical return with:			Median proportion of return due to change in:		
Outcome	N	Realized return to pre- or post-buyout capital	constant industry multiple	constant market multiple	constant (industry minus market) multiple	industry multiple	market multiple	(industry minus market) multiple
Return to pre-buyout capital:								
1: IPO	28	103.4%	86.0%	97.2%	85.8%	26.2%	8.0%	17.9%
2: Sold	15	47.0%	52.3%	20.2%	73.9%	18.1%	12.5%	4.7%
3: 2nd LBO	13	94.4%	60.5%	94.0%	62.4%	19.7%	6.9%	10.5%
4: Chapter 11	14	-36.5%	-36.5%	-47.5%	-31.7%	2.2%	10.6%	-18.9%
5: Still private	20	86.5%	60.2%	91.8%	53.8%	31.7%	-6.1%	24.7%
Total (1-5)	90	72.5%	53.5%	68.7%	58.0%	17.7%	5.1%	8.9%
Total (1-4)	70	68.7%	50.1%	61.9%	60.4%	17.2%	8.0%	5.2%
Return to post-buyout capital:								
1: IPO	28	66.9%	62.2%	65.3%	68.3%	8.9%	6.0%	7.3%
2: Sold	15	22.2%	19.6%	7.5%	34.2%	8.7%	9.6%	5.6%
3: 2nd LBO	13	64.4%	48.9%	54.7%	45.6%	32.1%	21.5%	18.0%
4: Chapter 11	14	-59.7%	-47.7%	-62.0%	-42.0%	0.9%	5.2%	-6.7%
5: Still private	20	43.1%	29.9%	47.9%	33.9%	32.3%	-9.2%	38.8%
Total (1-5)	90	40.9%	34.7%	43.9%	35.6%	12.0%	6.6%	5.8%
Total (1-4)	70	38.8%	39.3%	38.6%	37.6%	9.1%	8.5%	3.5%

Table IA.IX.3
Impact of Realized Tax Benefits on Returns

This table reports the effect of realized tax benefits from increasing debt on the return to pre- or post-buyout capital. For each year the firm is private, hypothetical tax payments are calculated assuming the firm maintains its pre-buyout interest coverage level, or pays interest at the pre-buyout level in unprofitable years. Taxes are calculated each year using the actual EBIT, tax loss carryforwards, the hypothetical interest payments, and the firm's actual marginal federal and state tax rates. The present value of tax benefits while private is calculated as the sum of the differences between the hypothetical tax payments and those based on the actual interest deductions realized by the firm, discounted to the pre-or post-buyout capital date at the sample median interest rate (LIBOR plus spread) of 8.35%. Hypothetical returns "without tax benefit" subtract the present value of tax benefits while private (divided by pre- or post-buyout capital) from the realized return. The terminal value (TV) tax benefit is calculated as $(I_{Actual}*t/r - I_{hypothetical}*t/r)$ using the final year's hypothetical interest payments. The proportion of the return due to tax benefits is defined as the difference between the return with and without the tax benefits, divided by the absolute value of the return.

			Hypothetical return:		Proportion of return due to:		
Outcome	N	Return to pre- or post-buyout capital	without annual tax benefit	without TV tax benefit	annual tax benefit	TV tax benefit	total tax benefit
Return to pre-buyout capital:							
1: IPO	27	110.1%	95.0%	91.8%	2.4%	11.2%	13.9%
2: Sold	15	47.0%	39.7%	35.1%	11.0%	31.9%	42.9%
3: 2nd LBO	11	94.4%	94.4%	76.8%	4.2%	24.2%	28.6%
4: Chapter 11	13	-34.6%	-39.8%	-83.2%	4.6%	123.0%	145.3%
5: Still private	20	86.5%	77.1%	65.4%	3.4%	24.0%	33.7%
Total (1-5)	86	73.8%	69.3%	48.7%	3.4%	27.7%	33.8%
Total (1-4)	66	72.5%	63.9%	46.4%	3.7%	28.0%	33.8%
Return to post-buyout capital:							
1: IPO	27	66.9%	66.9%	52.2%	2.8%	17.1%	21.3%
2: Sold	15	22.2%	17.6%	3.9%	10.0%	52.5%	70.5%
3: 2nd LBO	11	64.4%	61.0%	53.3%	4.9%	29.4%	36.1%
4: Chapter 11	13	-59.5%	-59.5%	-82.9%	5.4%	56.8%	74.0%
5: Still private	20	43.1%	40.8%	24.0%	5.4%	40.4%	46.3%
Total (1-5)	86	43.1%	40.8%	24.6%	4.8%	37.2%	44.5%
Total (1-4)	66	44.5%	41.1%	25.0%	4.8%	36.3%	41.4%

Table IA.XI
Regressions for Return to Capital: Treatment Effects Model

This table reports the results of a two-step treatment effects model (estimators are derived in Maddala (1983) and Green (2008)). The first step (treatment equation) estimates a probit model for the Club PE indicator variable, using the subset of observations where management projections are provided at the time of the buyout. From the probit estimates, the hazard rate for each observation is computed following Maddala (1983, pp.120-122). The hazard rate is used in the second step regression in addition to the variables used for the OLS model (Table XI), yielding an unbiased and consistent estimator for the Club PE variable. Competition is a dummy variable that equals one if there are multiple bidders for the company, otherwise zero. Projected Growth in Sales is management's average projected sales growth rate at the buyout in the Proxy statement, 13E3, or 14D1. ln(# of projected years) is the number of years of projections provided. *P*-values are reported under the coefficients in parentheses. a, b, and c indicate significance at the 1%, 5%, and 10% level, respectively.

	Step 1: Treatment equation, Club PE	Step 2: Return to pre-buyout capital	Step 2: Return to post-buyout capital
Ind&perf.&M/B-adjusted change in ROS (-1, last)		**5.341**[a] (0.005)	**4.459**[a] (0.001)
Change in industry multiple		**0.078**[a] (0.002)	**0.068**[a] (0.003)
Sum(annual tax benefits)/capital		**5.108**[a] (0.005)	**3.244**[c] (0.092)
Asset sales/capital		**-2.408**[b] (0.016)	**-1.900**[b] (0.011)
Acquisitions /capital		-0.736 (0.241)	-0.549 (0.221)
ln (capital)		**-0.519**[c] (0.056)	**-0.487**[b] (0.020)
Ind. adj. EBITDA/capital		0.800 (0.815)	3.083 (0.226)
Club PE		**2.664**[b] (0.046)	**2.298**[b] (0.025)
Competition		0.324 (0.330)	0.285 (0.254)
Club PE*Competition		-0.838 (0.140)	**-0.777**[c] (0.059)
Hazard rate		-1.026 (0.200)	-0.852 (0.163)
ln(Sales)	**0.517**[b] (0.028)		
Projected growth in sales	**5.664**[c] (0.080)		
Return on sales pre-buyout	1.657 (0.292)		
ln (# of projected years)	0.980 (0.146)		
Year dummies		Included	Included
Constant		3.345 (0.038)	2.951 (0.018)
Observations		60	60
Rho		-0.851	-0.908

Internet Appendix - References

Greene, William, 2008, *Econometric Analysis*, 6th ed., Prentice Hall, New Jersey.

Maddala, G.S., 1983, *Limited-Dependent and Qualitative Variables in Econometrics*, Cambridge University Press, New York.