

# UNDER THE HAMMER: DO PRIVATE EQUITY INVESTORS REALLY ACQUIRE TARGET FIRMS FOR LESS?

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## Motivation

- ❑ in recent years, private equity firms have become increasingly important M&A players
- ❑ they have increased in numbers, average fund size as well as deal numbers and deal size
- ❑ they have significantly enriched the M&A bidder pool and have become a serious alternative to strategic acquirers
- ❑ interestingly, *private equity* bidders offer on average significantly *lower takeover premiums*
- ❑ this phenomenon has only started to attract attention in the academic literature
  - ❑ Barger et al. (2008), Officer et al. (2008) and Boone and Mulherin (2008b)
  - ❑ Gorbenko and Malenko (2009), Massa and Xu (2009)

## Our contribution

- ❑ Barger et al. (2008) suggest three possible answers
  - ❑ financial vs. public buyers are different types of buyers
  - ❑ they are after targets with different target characteristics
  - ❑ the buyer ownership structure
- ❑ they favour ownership as the explanation
  
- ❑ we focus on differing *observable characteristics*
- ❑ but also *differences* in the *selling process*
  - ❑ putting these two things together may provide more information

## The private selling process

- ❑ before the public announcement of the deal
  - ❑ Boone and Mulherin (2007) are the first to analyze this (private) information, but there are more papers out now
- ❑ it usually starts by either
  - ❑ a prospective buyer approaching a target or
  - ❑ by a management decision to offer their company for sale
- ❑ then, the selling firm's management and its financial advisor
  - ❑ arrange an auction
    - ❑ auctions may either be formally structured (controlled) or informal
  - ❑ or negotiate the deal privately with an exclusive buyer

## The private selling process

- ❑ selling firm's managers decide on how to organize the selling process
- ❑ their decision depends on the overall situation of the firm
- ❑ managers take into account all relevant firm characteristics, deal initiation, preferred potential buyer (or at least its type) and also the overall pool of potential bidders
- ❑ managers know more than just the observable characteristics (in the Barger et al. (2008) sense)
- ❑ therefore the choice of auction/private negotiation may reveal important information about the targets and therefore should be included in the analysis of premiums

## Choosing PE versus strategic buyer

- ❑ choosing the right buyer is part of the process
- ❑ the selling company understands that
  - ❑ selling to a private equity firm is not the same as selling to a strategic buyer
- ❑ strategic buyers are usually other firms in the industry
  - ❑ they *redeploy the assets* of the target firms close to their best use (Shleifer and Vishny, 1992)
  - ❑ they buy *specific assets* and will benefit from synergies between their organization and the target firm
- ❑ private equity buyers are naturally industry outsiders
  - ❑ cannot manage the bought targets well themselves
  - ❑ face agency costs as they have to hire specialist to run the assets for them

## PE versus strategic buyer

- ❑ post-acquisition situation for the management
  - ❑ sale to a PE buyer allows the incumbent management to continue to manage and partially own the company and profit from further growth in the company value
  - ❑ strategic acquisitions often integrate acquired assets with existing operations of the new owner and usher in periods of cost cutting; the probability of being fired is higher
- ❑ both the selling and bidding firms may have certain preferences and choose accordingly certain types of targets
- ❑ segmented bidding is also possible

## The main results

- ❑ *observable characteristics* suggest that PE vs. strategic buyers are on average interested in different targets
  - ❑ but the PE dummy is still significant in the premium equation
- ❑ the *selling process* also differs across firms with different observable characteristics
- ❑ comparing across the three sale types:
  - ❑ private negotiation, informal auction and controlled auction
  - ❑ *controlled auctions*: premiums and observable firm characteristics are comparable for PE vs. strategic buyers
  - ❑ *private negotiations*: premiums are not different
  - ❑ *informal auctions*: this is where the action comes from
    - ❑ strategic buyers buy unprofitable firms with high R&D spending, high cash levels and high fraction of intangible assets
    - ❑ these differences account for the premium gap

## Data

- ❏ our data collection starts by searching for takeovers by *private equity firms* in the US
- ❏ all takeovers of *public US targets* within the SDC database from January 1997 through December 2006 where acquirers seek to *fully own* the target company
- ❏ this results in 205 attempted takeovers by private equity investors
  - ❏ 197 were completed and 8 were withdrawn
- ❏ the sample of 205 private equity takeovers is then matched firm by firm with takeovers by *strategic acquirers*
  - ❏ based on the year of announcement, target industry and target size

# Matching

- a quite important feature of our research design
- matching on industry:
  - is important due to the fact that private equity bidders are typically interested in firms coming from particular industries with stable cash flows and substantial fixed assets
  - Boone and Mulherin (2008b) report that more than half of the private equity takeovers occur in only four industries
- matching on size:
  - typically, strategic buyers are able to target larger companies (Bargeron et al. (2008))
- matching in time:
  - frequent observations of tougher deal competition after 2006 (Officer et al., 2008))

## PE versus strategic buyer - means

	Private equity buyer	Strategic Buyer	Difference in means
	mean	mean	
Target total assets	493	399	94
Four week premium	38.3%	50.0%	-11.7% <sup>b</sup>
Eight week premium	42.5%	54.4%	-11.9% <sup>b</sup>
Runup 8weeks to 1 day	13.0%	20.3%	7.2%
Profitability	-0.03	-0.10	-0.06 <sup>c</sup>
Loss	30.2%	42.0%	11.7% <sup>b</sup>
Stock performance	13.6%	9.6%	-4.0%
Market to book	1.12	1.42	0.30 <sup>a</sup>
Leverage	0.21	0.15	-0.06 <sup>a</sup>
Cash	0.15	0.22	0.07 <sup>a</sup>
Tangible assets	0.29	0.23	-0.06 <sup>a</sup>
R&D	0.06	0.89	0.82

## PE versus strategic buyer - means

	Private equity buyer	Strategic Buyer	Difference in means
	mean	mean	
Fraction sold in negotiation	24.9%	33.2%	8.3% <sup>c</sup>
informal auction	25.4%	37.1%	11.7% <sup>b</sup>
controlled auction	49.8%	29.8%	-20.0% <sup>a</sup>
Bidders contacted	32	15	17 <sup>a</sup>
out of which PE bidders	79%	8%	71% <sup>a</sup>
Bidders with agreement	14	6	8 <sup>a</sup>
out of which PE bidders	89%	3%	86% <sup>a</sup>
Man.-initiated deal	63.4%	42.4%	21.0% <sup>a</sup>

Dependent variable: Private equity dummy	Model 1	Model 2	Model 3	Model 4	Model 5
Loss	-0.539 <sup>b</sup> (0.220)	-0.415 <sup>c</sup> (0.227)	-0.462 <sup>b</sup> (0.220)	-0.025 (0.301)	-0.490 <sup>b</sup> (0.224)
Stock performance	0.040 (0.146)	0.047 (0.148)	0.054 (0.146)	-0.008 (0.236)	0.005 (0.142)
Market to book	-0.339 <sup>b</sup> (0.138)	-0.255 <sup>c</sup> (0.134)	-0.282 <sup>b</sup> (0.135)	-0.209 (0.165)	-0.314 <sup>b</sup> (0.132)
Leverage	1.272 <sup>a</sup> (0.429)				1.355 <sup>a</sup> (0.433)
Cash		-1.022 <sup>b</sup> (0.502)			
Tangible assets			0.910 <sup>c</sup> (0.474)		
Research & development				-2.181 <sup>b</sup> (1.037)	
Management initiated deal	0.874 <sup>a</sup> (0.210)	0.853 <sup>a</sup> (0.208)	0.874 <sup>a</sup> (0.209)	1.020 <sup>a</sup> (0.265)	0.683 <sup>a</sup> (0.223)
Informal auction					-0.537 <sup>b</sup> (0.273)
Private negotiation					-0.584 <sup>b</sup> (0.263)
Constant	-0.086 (0.262)	0.197 (0.239)	-0.189 (0.299)	-0.212 (0.317)	0.292 (0.291)
Number of observations	407	407	407	267	407
X <sup>2</sup>	35.67	35.15	32.54	26.04	38.78

## Target characteristics for PE vs. strategic buyers

- ❑ *firm characteristics* of targets that eventually end up with *strategic* versus *private equity* buyers differ *significantly*
  - ❑ private equity firms versus strategic buyers end up purchasing different types of targets
  - ❑ more profitable, manager initiated deals with high leverage end up more frequently with a private equity buyer
  - ❑ targets of strategic buyers have higher market to book ratio, more intangible assets, high R&D expenses and high cash levels
- ❑ thus, strategic buyers are interested in targets with
  - ❑ more *specific assets* associated with higher potential synergies
- ❑ whereas private equity buyers target firms with
  - ❑ more *generally redeployable assets*

## Target characteristics for PE vs. strategic buyers

- ❏ the differing tastes of the two buyer types are also reflected in the fact that private equity buyers usually compete in bidding predominantly with other private equity firms and strategic buyers compete with other strategic buyers
  - ❏ on average, 92% of all bidders are also private equity bidders in case a private equity firm wins the bidding
  - ❏ the fraction of private equity bidders when strategic buyers win is only 4%
- ❏ these significant differences in observable characteristics, however, still explain only a small fraction of the sizable difference in premiums

## Determinants of the sale process

Dependent variable: sale process type	Model 9			Model 10		
	Negotiation	Informal	Coeff. difference	Negotiation	Informal	Coeff. difference
Private equity	-0.540 <sup>b</sup> (0.274)	-0.597 <sup>b</sup> (0.264)	-0.058	-0.510 <sup>c</sup> (0.269)	-0.518 <sup>b</sup> (0.262)	-0.008
Manag. initiated deal	-1.871 <sup>a</sup> (0.278)	-1.348 <sup>a</sup> (0.268)	0.523 <sup>c</sup>	-1.872 <sup>a</sup> (0.278)	-1.338 <sup>a</sup> (0.268)	0.535 <sup>c</sup>
Transaction value	-0.119 (0.101)	0.099 (0.095)	0.218 <sup>b</sup>	-0.094 (0.100)	0.118 (0.093)	0.212 <sup>b</sup>
Loss	0.153 (0.293)	0.616 <sup>b</sup> (0.285)	0.463	0.286 (0.299)	0.556 <sup>c</sup> (0.292)	0.269
Stock performance	-0.245 (0.161)	-0.438 <sup>b</sup> (0.214)	-0.193	-0.244 (0.162)	-0.376 <sup>c</sup> (0.203)	-0.133
Market to book	0.105 (0.149)	0.256 <sup>c</sup> (0.140)	0.151	0.169 (0.148)	0.230 (0.143)	0.060
Leverage	1.123 <sup>c</sup> (0.575)	0.519 (0.576)	-0.604			
Cash				-1.056 (0.753)	0.632 (0.626)	1.689 <sup>b</sup>
Constant	1.229 <sup>b</sup> (0.577)	-0.226 (0.586)	-1.455 <sup>b</sup>	1.339 <sup>b</sup> (0.591)	-0.358 (0.597)	-1.697 <sup>a</sup>
Number of observations	407			407		
$\chi^2$	81.25			83.71		

## Determinants of the sale process

- ❑ the sale process reflects observable firm characteristics
  - ❑ better performing firms with lower market to book and lower leverage tend to be sold via controlled rather than informal auction or private negotiation
  - ❑ PE buyers are more likely to buy targets in controlled auctions when the target is offered for sale by the target firm's management
  - ❑ strategic buyers, in contrast, are more likely to buy a target company in an informal auction or private negotiation

## The premium also varies with the selling process

PANEL A: Eight-week premium	Negotiation	Informal auction	Controlled auction
All deals	46%	60%	41%
PE deals	51%	44%	37%
Strategic buyer deals	43%	70% <sup>b</sup>	47%
Man. initiated PE deals	<b>31%</b>	42%	38%
PE initiated deals	<b>65%</b>	47%	34%
Man. initiated strat.-buyer deals	40%	68%	43%
Strategic buyer initiated deals	43%	72%	55%

- ▣ premium is the highest in informal auctions (statistical significant)
- ▣ but this is due to patterns for strategic buyers
- ▣ PE buyers pay the most in negotiations
- ▣ this pattern is sustained even when we control for deal initiation (except for management initiated private negotiations with PE buyers)
- ▣ the two buyer types deploy different bidding strategies

## But we can get more information

PANEL B: Other characteristics	Negotiation			Informal auction			Controlled Auction		
	Total	PE buyer	Strat. buyer	Total	PE buyer	Strat. buyer	Total	PE buyer	Strat. buyer
Transaction value	574	555	588	776	1,051	588	475	502	430
Runup 8 week to 1 day before ann.	11.9%	8.0%	15.0%	25.1%	13.8%	32.8% <sup>b</sup>	13.1%	15.3%	9.4%
Profitability	-0.01	0.04	-0.04	-0.02	0.06	-0.07 <sup>a</sup>	0.04	0.05	0.02
Loss	37%	37%	37%	43%	31%	51% <sup>b</sup>	30%	26%	36% <sup>d</sup>
Stock performance	10.4%	-4.0%	21.2% <sup>b</sup>	3.0%	13.1%	-3.9% <sup>d</sup>	19.2%	22.6%	13.5%
Market to book	1.23	0.96	1.44 <sup>a</sup>	1.48	1.28	1.61 <sup>d</sup>	1.13	1.12	1.15
Leverage	0.20	0.22	0.19	0.18	0.26	0.13 <sup>a</sup>	0.17	0.18	0.14 <sup>d</sup>
Cash	0.16	0.15	0.17	0.24	0.17	0.29 <sup>a</sup>	0.17	0.15	0.20 <sup>d</sup>
Tangible assets	0.28	0.33	0.24 <sup>a</sup>	0.24	0.26	0.23	0.26	0.28	0.22 <sup>d</sup>
R&D	1.20	0.04	1.90	0.41	0.07	0.60	0.11	0.08	0.15
Bidders contacted	1.1	1.1	1.1	15.6	19.3	12.6 <sup>d</sup>	48.0	55.3	35.4 <sup>b</sup>
Fraction of PE bidders contacted				39%	59%	17% <sup>a</sup>	53%	66%	25% <sup>a</sup>
Bidders with confidentiality agreem.	1.0	1.0	1.0	4.5	6.7	3.1 <sup>a</sup>	22.6	25.3	17.9 <sup>b</sup>
Fraction of PE bidders with agreem.				38%	81%	6% <sup>a</sup>	58%	76%	15% <sup>a</sup>
Man.-initiated deal	32%	41%	25% <sup>c</sup>	43%	54%	36% <sup>b</sup>	76%	79%	70% <sup>d</sup>
Number of transactions	113	50	63	124	50	74	152	97	55

## Three important patterns

- in controlled auctions
  - PE versus strategic buyers pay comparable premiums and the two types of buyers target firms with similar observable characteristics
  - mostly initiated by the target management and won by PE buyers
  - high bidder competition and low premiums
- in negotiations
  - also homogeneous in terms of average premium across the two buyer types
  - target characteristics are slightly different: private equity targets' stock performance is poorer and have lower market to book ratio and more tangible assets
  - typically buyer initiated
- informal auctions are the only sale process type with significant differences in premiums and target observable characteristics across the two buyer types

## Informal auctions drive the differences

- ❑ so, informal auctions are the main source of the differences documented for the overall sample
- ❑ private equity buyers pay 44% premium above the price 8 weeks before the deal announcement versus 70% paid by strategic buyers
- ❑ strategic buyers pay high premiums for unprofitable firms with high R&D spending, high cash levels and high fraction of intangible assets
- ❑ this again indicates high target asset specificity and high potential synergies for strategic buyers
- ❑ private equity buyers target better performing firms with low market to book ratio, less cash and high leverage that management offers for sale
- ❑ these target characteristics account for the large differences in premiums

Dependent variable: eight week premium	Model 11	Model 12	Model 13
Private equity	-0.098 <sup>c</sup> (0.056)		-0.059 (0.052)
Management initiated deal	-0.103 <sup>c</sup> (0.061)	-0.102 <sup>c</sup> (0.061)	-0.103 <sup>c</sup> (0.060)
Stock performance	-0.177 <sup>a</sup> (0.057)	-0.173 <sup>a</sup> (0.055)	-0.180 <sup>a</sup> (0.055)
Market to book	-0.005 (0.031)	-0.007 (0.032)	-0.007 (0.034)
Negotiation	0.649 <sup>a</sup> (0.143)	0.557 <sup>a</sup> (0.147)	0.660 <sup>a</sup> (0.143)
Negotiation x PE		0.036 (0.105)	
Negotiation x Loss			0.029 (0.127)
Informal auction	0.758 <sup>a</sup> (0.147)	0.760 <sup>a</sup> (0.152)	0.693 <sup>a</sup> (0.142)
Informal x PE		-0.173 <sup>c</sup> (0.101)	
Informal x Loss			0.258 <sup>b</sup> (0.122)
Controlled auction	0.652 <sup>a</sup> (0.133)	0.615 <sup>a</sup> (0.142)	0.585 <sup>a</sup> (0.133)
Controlled x PE		-0.066 (0.070)	
Controlled x Loss			0.302 <sup>a</sup> (0.100)

## Conclusions

- ❏ the selling process seems to be important in explaining premium differences in private equity vs. strategic buyers
- ❏ informal auctions seem to account for almost all the differences in premiums
- ❏ still to solve – econometric issues