Relative Values, Announcement Timing, and Shareholder Returns in Mergers and Acquisitions

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Motivation: Timing of M&A Announcements

▶ Announcement returns are widely used to assess shareholder gains in M&As.

◇ The consensus is that bidding shareholders lose out, on average.

◇ Moeller et al. (2005): bidding shareholders lost over $220bn at the announcement of M&As during 1980-2001.

◇ This approach implicitly treats announcement timing as exogenous.

▶ The literature also highlights that "misvaluation" affects who buys whom and the method of payment.

◇ Theory: Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004).

◇ Empirical evidence: Rhodes-Kropf et al. (2005); Dong et al. (2006); and Ang and Cheng (2006).

▶ What if misvaluation also affects the timing of M&A announcements?

◇ If so, announcement returns may not fully capture gains to bidding shareholders.

◇ Example of the AOL-Time Warner merger:

"So don't blame Case for what has happened. He **chose the moment, almost to the day,** *when his stock was most valuable and then used it as currency. He served his shareholders well."* *(Fortune, Feb. 2003.)*

Our Paper

Research Questions

- ◇ Do bidders strategically time M&A announcements to exploit misvaluation?

- ◇ How does timing affect the terms of the deal, likelihood of success, and shareholder returns?

▶ **Empirical Challenge**: Hard to identify/quantify misvaluation because we do not observe "fundamental values."

▶ We examine how the bidder's relative value at announcement compares with its low- and high-values over the 52 weeks preceding the announcement.
  - ◇ Does not rely on model-based estimates of fundamental value.
  - ◇ Available at high frequency (e.g., daily).

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$$NRV_{ann} \equiv \frac{Log(RV_{ann}) - Log(RV_{52low})}{Log(RV_{52high}) - Log(RV_{52low})}, \text{ where } RV_t \equiv \frac{V_t^B}{V_t^T}$$

◇ 52-week reference prices are important in M&As (Baker et al. (2012)).

◇ $NRV_{ann} \rightarrow 1$: Deal announced closed to 52-week HIGH of RV.

◇ $NRV_{ann} \rightarrow 0$: Deal announced closed to 52-week LOW of RV.

Example of a High-NRV_{ann} Deal

Oracle's hostile tender offer for PeopleSoft ($10.4bn; 2003)

Trading Day Distance from Announcement

NV^B ——— NV^T ——— NRV
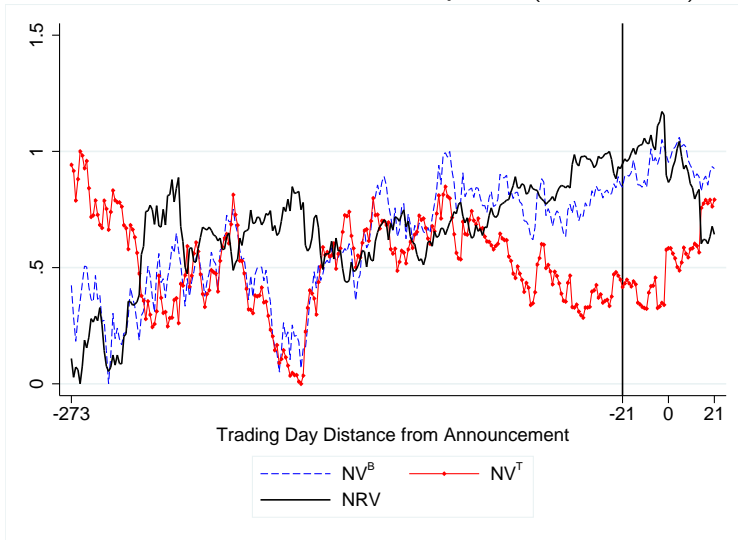
Example of a Low-NRV_{ann} Deal

Freeport-**McMoRan's tender offer for Pelps Dodge** ($25.8bn; 2006)
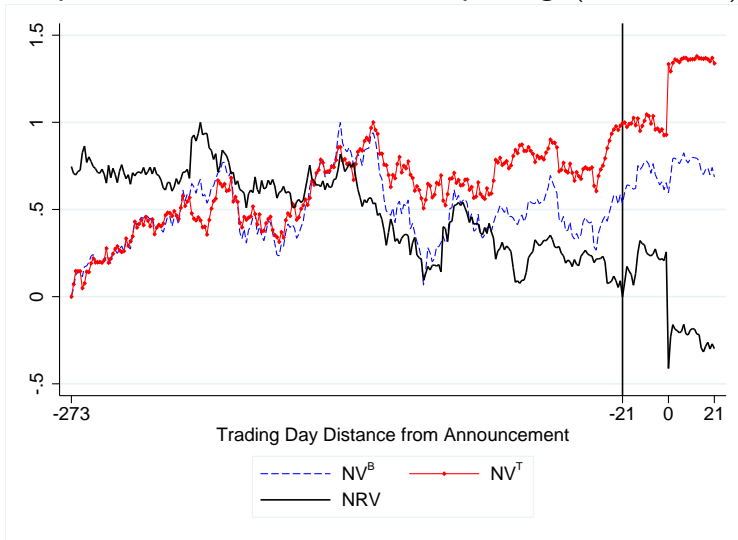
Market-Timing Hypothesis

▶ **Changes in NRV are at least partly driven by misvaluation**, which bidders may strategically exploit by announcing deals at high NRV.

  ◇ Does not contradict the $Q-$hypothesis of takeovers.

  ◇ Even if the deal is motivated by efficiency/tax considerations, the timing may be affected by potential misvaluation.

▶ **Prediction:** NRV_{ann} should affect deal terms and shareholder returns even after controlling for bidder's Q and target's Q at announcement.

$$Y_{jt} = \alpha + \beta * NRV_{ann} + \sum_{i \in \{B,T\}} \psi_i * Q_{ann}^i + \boldsymbol{\gamma} X_{t-1}^B + \boldsymbol{\lambda} X_{t-1}^T + \mu_{industry} + \mu_t + \epsilon_{j,t}$$

Alternative Hypothesis

- **Markets are efficient**, and changes in NRV are entirely driven by changes in underlying fundamentals.
  - ◇ No role for market timing under this alternative hypothesis, because it does not admit any misvaluation.

- **Prediction:** NRV_{ann} should have no additional effect on deal terms.
  - ◇ Reference prices should not matter if stock prices never deviate from fundamentals.

Sample

- Data: SDC Mergers and Acquisitions Database (1985-2015).

    ⋄ 3,644 deals in which both bidder and target are publicly traded (on CRSP).

    ⋄ Substantial variation in NRV_{ann} across deals (Mean: 0.571; Stdev: 0.306).

- Summary of some empirical results:

    ⋄ Duration analysis: For a given bidder-target pair, deal announcement becomes more likely as NRV_t increases, all else equal.

    ⋄ High-NRV_{ann} deals are more likely to have larger fraction of the payment in the form of stock.

    ⋄ High-NRV_{ann} deals are more likely to fail, especially due to lack of target shareholder approval.

NRV_{ann} and Offer Premium
(Selected Coefficients Only)

Dependent Variable:	Offer Premium $= Log(P^T_{offer}/P^T_{pre-bid})$				$Log(P^T_{offer}/P^T_{52\,High})$		
Samples Included:	All Deals		$All\,Cash=1$	$Stock=1$	All Deals	$All\,Cash=1$	$Stock=1$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NRV_{ann}	0.165***		0.064*	0.210***	-0.289***	-0.330***	-0.240***
	(7.57)		(1.78)	(6.68)	(-8.31)	(-7.03)	(-4.42)
Pre-Announcement Return^B		0.057***					
		(5.18)					
Pre-Announcement Return^T		-0.027**					
		(-2.28)					
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.162	0.149	0.282	0.168	0.262	0.319	0.308
N	2,239	2,239	715	1,287	2,239	715	1,287

▶ High NRV_{ann} deals have higher offer premium (relative to pre-bid price).

  ▶ Target shareholders may have to be compensated for their perceived disadvantageous timing ("reference point" argument of Baker et al. (2012)).

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▶ High NRV_{ann} deals have higher offer premium (relative to pre-bid price).

▶ However, targets in high-NRV_{ann} deals receive a lower price (P^T_{offer}) relative to their 52-week high price ($P^T_{52\ High}$).

NRV_{ann} and Short-term Announcement Returns
(Selected Coefficients Only)

Dependent Variable:	Bidder $CAR[-1,+1]$			Target $CAR[-1,+1]$		
Samples Included:	All Deals	$All\ Cash = 1$	$Stock = 1$	All Deals	$All\ Cash = 1$	$Stock = 1$
	(1)	(2)	(3)	(4)	(5)	(6)
NRV_{ann}	-0.018***	0.001	-0.021***	0.093***	0.100***	0.096***
	(-3.50)	(0.14)	(-2.66)	(6.56)	(3.52)	(5.50)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.081	0.147	0.092	0.147	0.174	0.179
N	3,383	1,042	1,942	3,383	1,042	1,942

► Negative relation between NRV_{ann} and Bidder $CAR[-1,+1]$, which is driven by deals that involve some stock payment.

  ◇ Positive relation between NRV_{ann} and target announcement returns.

► Consistent with the market-timing hypothesis: could be due to higher offer premium in high NRV_{ann} deals and correction for perceived misvaluation.

NRV_{ann} and Long-term Bidder Performance

▶ We use calendar-time portfolio approach to compute long-run abnormal returns (Fama (1998), Savor and Lu (2009)).

  ◇ Mean monthly abnormal portfolio return (Fama-French three-factor α)

Holding Period:	$[0M, +12M]$	$[0M, +24M]$	$[0M, +36M]$	$[-12M, +12M]$
High NRV_{ann}	**-0.374*****	**-0.354*****	**-0.325*****	0.608***
	(-2.68)	**(-2.92)**	**(-2.78)**	(5.50)
High $NRV_{ann}\times$ Success	-0.208	-0.289**	-0.277**	0.633***
	(-1.46)	(-2.40)	(-2.37)	(5.45)
High $NRV_{ann}\times$ Exogenous Failure	-1.621***	-1.179***	-0.793**	0.113
	(-3.25)	(-2.65)	(-2.36)	(0.34)
High NRV_{ann}: Success − Exogenous Failure	1.383***	0.894**	0.560*	0.548*
	(2.76)	(2.09)	(1.77)	(1.69)
Low NRV_{ann}	**-0.129**	**-0.086**	**-0.082**	-0.218**
	(-0.93)	**(-0.71)**	**(-0.72)**	(-2.08)
Low NRV_{ann}: Success − Exogenous Failure	0.125	0.111	0.233	0.117
	(0.27)	(0.31)	(0.76)	(0.36)

▶ Negative long-term returns for high NRV_{ann} deals.

  ◇ Possibly reaction to a signal of relative overvaluation.

  ◇ However, much worse returns for the deals failed due to exogenous reasons.

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▶ Negative long-term returns for high NRV_{ann} deals.

▶ Bidders in high-NRV_{ann} deals realize large abnormal returns over $[-12M, +12M]$ period, despite the high offer premium and negative announcement return.

Revisited: Example of Oracle's acquisition of Peoplesoft

▶ **Was this a bad deal for Oracle's long-term shareholders? Probably not.**

▶ Oracle's $CAR[-1, +1]$ of -4.29% may be a small price given the advantageous timing.

Trading Day Distance from Announcement

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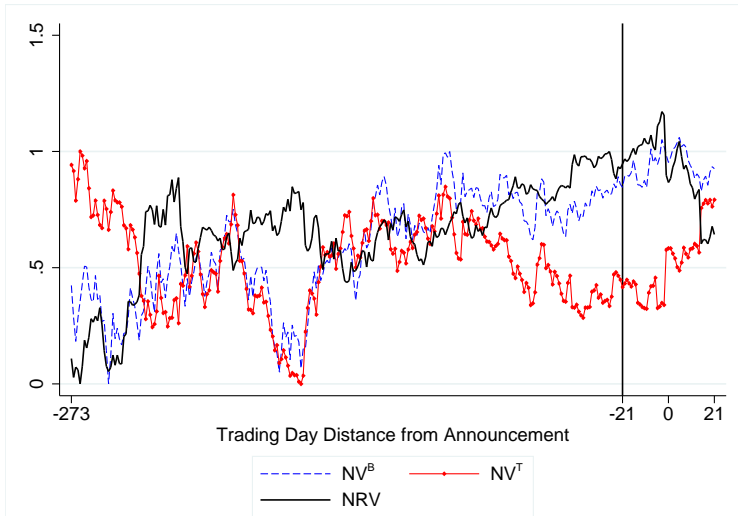
Concluding Remarks

▶ Bidders strategically choose timing of M&A announcements to exploit relative misvaluation.

  ◇ We use a novel measure, NRV_{ann}, to identify potential relative misvaluation.

▶ Announcement returns may not fully account for gains to long-term shareholders.

  ◇ Do overvalued acquirers benefit their shareholders by using stock as acquisition currency? Savor and Lu (2009) say **YES**; Fu et al. (2013) say **NO**.

  ◇ We argue that high offer premium and low Bidder $CAR[-1, +1]$ do not automatically imply that the deal is bad for bidder shareholders.

THANK YOU!