Market Crashes and Merger Completions

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Cash versus Stock in Mergers & Acquisitions

- Pay for an acquisition with cash or with bidder firm stock
- How do firms decide?
  - Eckbo Giammarino Heinckel 1990: Private information + stock misvaluation
  - Rhodes-Kropf Viswanathan 2005: Private information + stock misvaluation
  - Vladimirov 2015: Private information + financial frictions
  - Gorbenko Malenko 2018: Private information + financial frictions
- All about asymmetric information *ex ante*

This paper

- A cash bid is effectively a fixed-price forward contract
- A stock bid is effectively a floating-price forward contract
- Cash versus stock bids have different outcomes, due to strategic default *ex post*
- Interim risk drives method of payment and deal terms
- Interim risk is due to contracting frictions

Existing Literature

- Models of M&A (in particular method of payment) assume that the deal is completed once agreed upon
- Empirical studies tend not to look at deal completion
- Few papers consider interim risk that the deal will be cancelled
    - Bhagwat and Dam (WP) and Bhagwat Dam Harford (2016)

A Puzzle

- Cash bids pay a 4.6% (t=6.5) **higher** premium than stock
- Yet cash bids are completed at the **same** rate (87%) as stock bids (88%) (t=0.9)
- Existing literature: A cash bid is a costly (to the bidder) signal of high expected value
- How to separate this story from the interim-risk story?

Data

All deals in SDC that satisfy:

- The deal form is“Acquisition”, “Merger”, “Acquisition of Majority Interest”, or “Acquisition of Remaining Interest”
- The deal's final status is either “Completed” or “Withdrawn”
- The time between the announcement date and the completion or withdrawal date was at least 20 business days
- The fraction of the target owned by the acquiror was less than 50% prior to the deal, and was or would have been more than 50% following the deal's completion
- Data are nonmissing for target firm (public target)
- The transaction value was more than $100 million in 2018 dollars
- 6,410 deals from 1986-2018

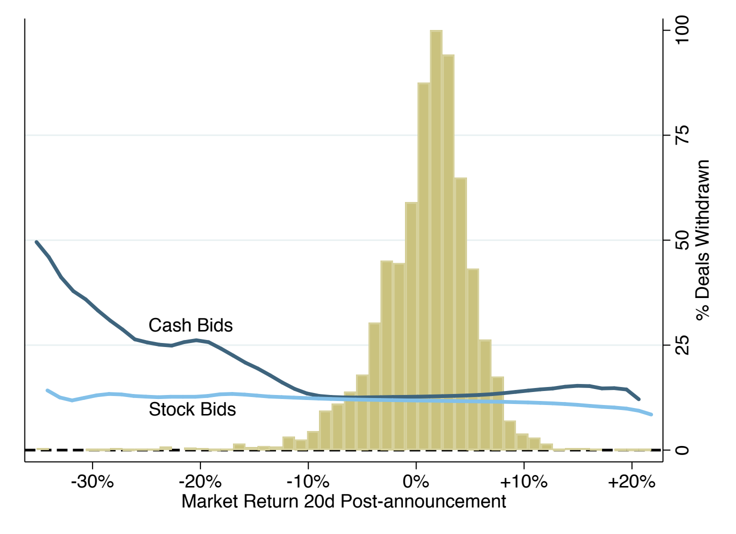
Market crashes – definition

- "Market crash": The CRSP value-weighted U.S. stock market falls 10% over the 20 trading days after the deal is announced
- That is, $MktReturn_{t+1 \to t+20} < -0.10$

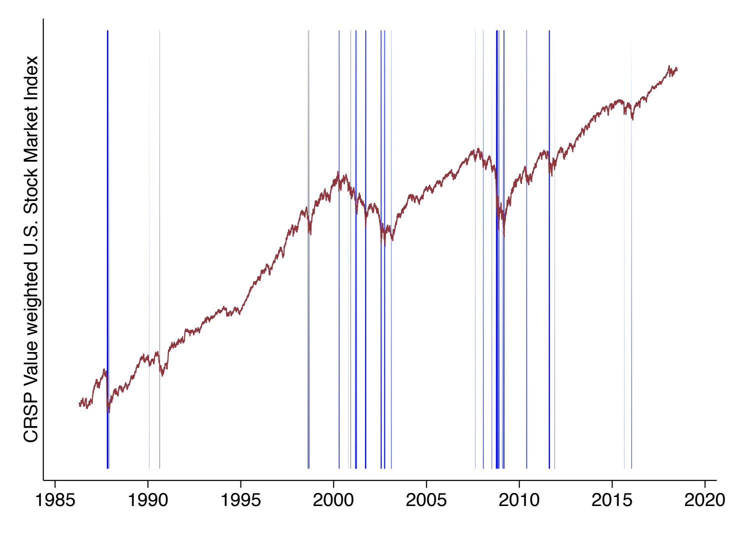
Market crashes and merger completions

	(1) Completed	(2) Completed	(3) Completed	(4) Completed	(5) Completed
MktReturn	0.10				
	(0.22)				
MktDown		0.03			
		(0.02)			
MktDown10pct			-0.13***	0.02	-0.20***
			(0.04)	(0.10)	(0.06)
Sample	All Deals	All Deals	All Deals	Majority Stock	Majority Cash
Model	Logit	Logit	Logit	Logit	Logit
Observations	6,343	6,343	6,343	2,367	3,603
Year FE	Yes	Yes	Yes	Yes	Yes

Market crashes and merger completions



Market crashes over time



Robustness checks

	(1) Completed	(2) Completed	(3) Completed	(4) Completed	(5) Completed	(6) Completed	(7) Completed	(8) Completed	(9) Completed
MktDown10pct	-0.20***	-0.21**	-0.14**	-0.14**	-0.14**	-0.13**	-0.13*	-0.14***	-0.16***
	(0.06)	(0.09)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.05)	(0.05)
TargetStockRtn					0.01				
					(0.03)				
TargetDown10pct						-0.12***			
						(0.03)			
TargetIndustryRtn							-0.51		
							(0.42)		
Model	Logit	Logit	Probit	OLS	OLS	OLS	OLS	OLS	OLS
Observations	3,643	3,308	3,643	3,643	3,643	3,643	1,808	3,633	2,834
R-squared				0.021	0.021	0.027	0.033	0.096	0.399
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Target Industry FE	No	No	No	No	No	No	No	Yes	No
Acquiror Industry FE	No	No	No	No	No	No	No	Yes	No
Target Industry-Year FE	No	No	No	No	No	No	No	No	Yes
Acquiror Industry-year FE	No	No	No	No	No	No	No	No	Yes
Other		Drop 87+01+08					$\mathit{TgtIndRtn} > 0$		

Economic Channels

	(1) AcquirorWithdrew	(2) TargetWithdrew	(3) Completed	(4) Completed	(5) Completed	(6) Completed	(7) Completed
MktDown10pct	0.14**	-0.06		-0.22***			
	(0.07)	(0.04)		(0.07)			
LargeDeal× *MktDown10pct*			-0.23***				
			(0.09)				
SmallDeal× *MktDown10pct*			-0.19***				
			(0.06)				
CapitalLiquidity				0.06			
				(0.07)			
Δ*CapitalLiquidity*				0.08			
				(0.05)			
LBO× *MktDown10pct*					-0.27***		
					(0.10)		
NonLBO× *MktDown10pct*					-0.18***		
					(0.07)		
HighPremium× *MktDown10pct*						-0.15	
						(0.12)	
LowPremium× *MktDown10pct*						-0.25***	
						(0.07)	
HighTargetVol× *MktDown10pct*							-0.28***
							(0.06)
LowTargetVol× *MktDown10pct*							-0.11
							(0.08)
Observations	3,643	1,197	3,643	3,486	3,643	3,643	3,643
Main Effect			Yes		Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Economic Channels

- Market crashes cause acquiror firms to withdraw, due to revised expectations about deal value
- It is also possible that market crashes cause some deals (such as LBOs) to lose financing, but this is less clear

Market risk drives deal terms

	(1) MajorityCash	(2) MajorityCash	(3) log(Premium)	(4) log(Premium)	(5) log(Premium)
VIX	-0.0057***	-0.0026***	0.0034**		
	(-2.9)	(-3.4)	(1.2)		
CAPE		-0.0060***	0.0028		
		(-12.2)	(0.9)		
MajorityCash $\times$ VIX				0.0048***	0.0048***
				(3.9)	(3.7)
MajorityStock $\times$ VIX				0.0016	0.0015
				(1.2)	(1.2)
MajorityCash $\times$ CAPE				0.0032	0.0036
				(1.2)	(1.4)
MajorityStock $\times$ CAPE				0.0036	0.0039
				(1.1)	(1.3)
IsFriendly					-0.0020
					(-0.1)
log(Deal Value)					-0.0083**
					(-2.5)
IsBuyout					-0.0748***
					(-7.4)
Model	Logit	Logit	OLS	OLS	OLS
Observations	5,670	5,647	5,666	5,666	5,666
R-squared			0.078	0.088	0.096
Industry FE	No	Yes	Yes	Yes	Yes
Year FE	No	No	Yes	Yes	Yes

Market risk drives deal terms

- Bhagwat Dam Harford (2016): When VIX is high, fewer deals are announced

We show:

- When VIX is high, fewer deals to be paid in cash
- Cash (and only cash) deals have higher premiums

No effect after definitive agreement is signed

	(1) Completed	(2) Completed	(3) Completed	(4) Completed
Def. Pre-Agreement	0.22***	0.26***		
	(11.2)	(12.5)		
*MktDown*10*pct*×	-0.25**	-0.33***		
No Pre-Agreement	(-2.7)	(-4.0)		
*MktDown*10*pct*×	0.02	-0.02		
Def. Pre-Agreement	(0.6)	(-0.4)		
*MktDown*10*pct* Post-DefAgrmt			-0.01	-0.04
			(-0.3)	(-0.8)
Sample	All	Cash	All	Cash
Observations	6,406	3,638	6,003	3,358
R-squared	0.118	0.175	0.024	0.049
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

No effect after definitive agreement is signed

- After a definitive agreement is signed, the effect is absent
- "Interim risk" minimized after the definitive agreement
- Hypothesis: Interim risk is driven by contracting frictions

Conclusion

- Market crashes lead to cancellations of large M&A deals
  - Only for deals to be paid in cash
  - Market crashes cause acquiror firms to walk away due to revised expected value relative to the fixed purchase price
- Cash bids are uniquely exposed to "interim risk"
  - As a result, ex ante market risk drives cash vs stock decision and cash deal premium
- After a definitive agreement is signed, the effect is absent
  - Suggests interim risk is driven by contracting frictions

Conclusion

- Questions that I still have:
    1. Why isn't the possibility of a market crash written into the bid *ex ante*?
    2. Why can't the buyer and seller renegotiate the price efficiently *ex post*?

Conclusion

STRATEGIC DEFAULT IN THE INTERNATIONAL COFFEE MARKET 917

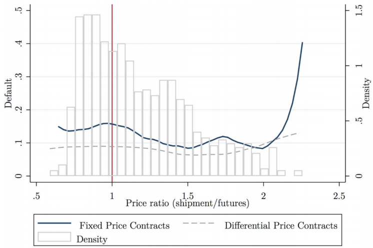


FIGURE V

Unexpected Price Increases and Contract Default

- Hart (2009), Hart and Moore (2009): Behavioral reasons not to renegotiate *ex post*
- Contracts have a **self-enforcing range**

Conclusion

BREAKING UP

The Publicis-Omnicom mega-merger unravelled for entirely predictable reasons

By Jason Karaian • May 9, 2014

"Publicis was pushing for its CFO, Jean-Michel Etienne, to become finance chief of the combined company. This was seen as the crucial factor in whether the group would follow Publicis's more centralized business model or Omnicom's looser federation approach. But the groups couldn't decide on a CFO - a seemingly mundane sticking point for an industry built on big egos and creativity - and they called the deal off."