# The Long-Term Effects of Short-Term Incentives
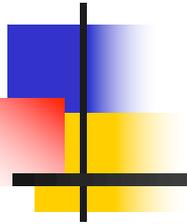
Alex Edmans
London Business School, CEPR, and ECGI

IESE-ECGI Corporate Governance Conference
October 2019
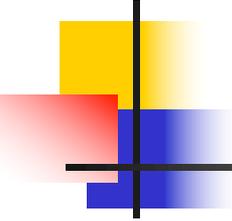
Almost Everyone Believes Short-Termism Is a Problem

- Clinton: "tyranny of short-termism"; Sanders and Warren: bill to limit activist hedge funds
- CNBC: "Warren Buffett Joins Call to Target "Short-Termism" In Financial Markets"
- Focusing Capital on the Long-Term

Alex Edmans ✓
@aedmans

Smoking Gun evidence of short-termism: huge fall in R&D since 1977 caused by activist investors, short-term traders, and stock buybacks. papers.ssrn.com/sol3/papers.cf ...

Figure 3. R&D Spending in U.S. as a Proportion of GDP, 1977-2016[47]
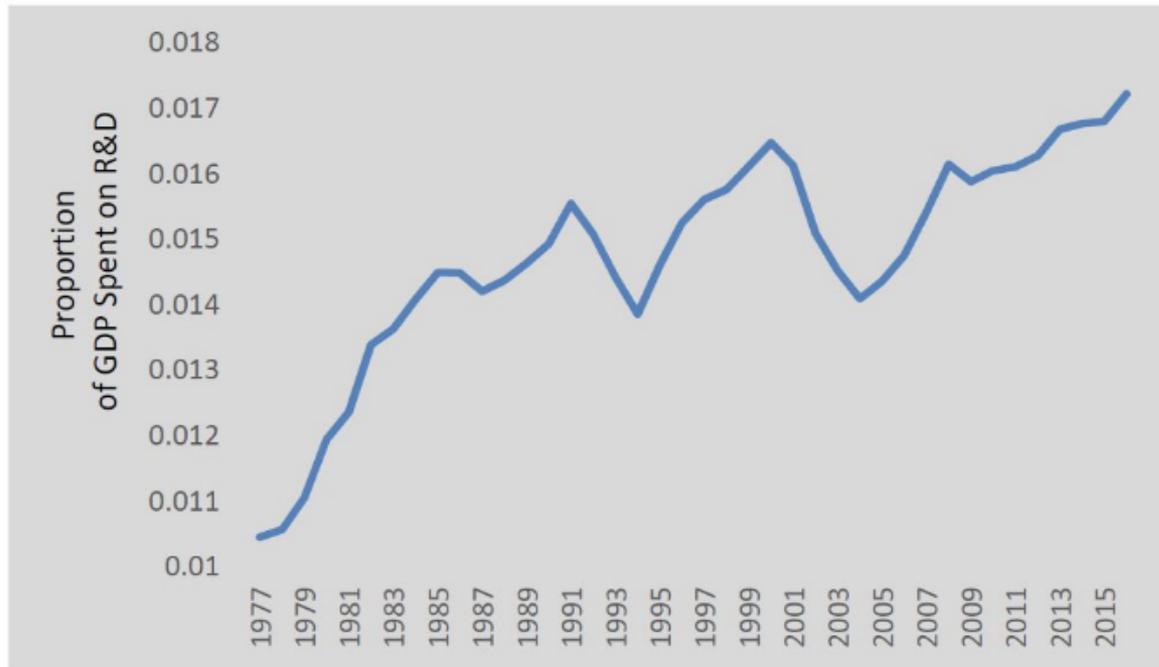
2:22 AM - 30 May 2018

6 Retweets   15 Likes

3

'maximising share value' + share buy back = increased executive pay, but leads to long term productivity loss & increased inequality

re 3. R&D Spending in U.S. as a Proportion of GDP, 1977-
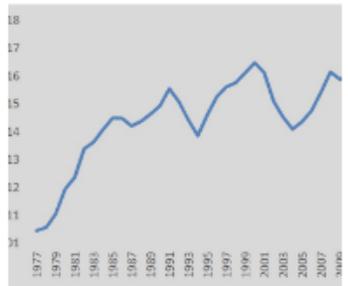
Alex Edmans ✔ @aedmans

Smoking Gun evidence of short-termism: huge fall in R&D since 1977 caused by activist investors, short-term traders, and stock buybacks. papers.ssrn.com/sol3/papers.cf...

6:17 PM - 30 May 2018

4
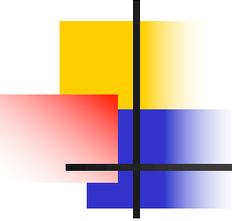
Short-Term Incentives Believed To Be Damaging …

- Bebchuk and Fried (2010): "Paying for long-term performance"

- UK Corporate Governance Code is increasing vesting periods from 3 to 5 years

- Theories predict effects of ST incentives
  - Stein (1989), Goldman and Slezak (2006), Peng and Roell (2008), Benmelech et al. (2010)
  - Edmans, Gabaix, Sadzik, and Sannikov (2012), Marinovic and Varas (2019): optimal contract to deter short-termism
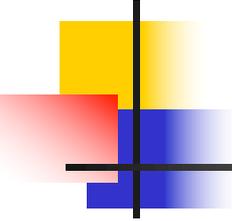
… But Where's The Evidence?

- Mismatch between standard empirical measures of incentives and myopia theories
  - In theory models, what matters is horizon of incentives. Max $\alpha[\omega P + (1-\omega)V]$
  - Standard measures of incentives quantify overall sensitivity to stock price: α, not ω
- $\alpha\omega P$ is dollar value of CEO's equity sales
  - But actual equity sales are (a) endogenous (b) potentially unpredictable
  - Need $E[\alpha\omega P]$: expected equity sales
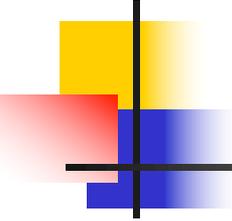
Empirical Approach

- Use scheduled vesting of equity
    - Relevance: highly correlated with equity sales
    - Exclusion: driven by grants several years prior
    - Predictable by CEO in advance
    - Available post-2006 SEC rules. Short time series, so use Equilar (Russell 3000) vs. Execucomp (S&P 1500)

Measuring Short-Term Incentives
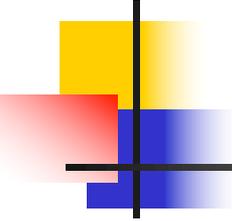
- Identify vesting options grant-by-grant to calculate delta
  - *VESTING*: effective $ value of vesting equity (stock and options)
  - *VESTED*
  - *UNVESTED*
- Equilar is annual. Derive algorithm to estimate vesting date of equity, enabling calculation of quarterly *VESTING*
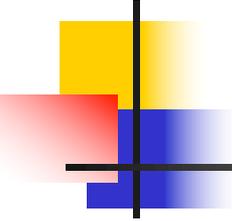
Equity Vesting and Investment

- Edmans, Fang, and Lewellen (*RFS* 2017)
- LHS: *ΔRD, ΔCAPEX*, *ΔNETINV, ΔRDCAPEX*, *ΔRDNETINV*
- Controls:
  - *VESTED*, *UNVESTED*, salary, bonus
  - CEO characteristics (Asker et al., 2015):
    - CEO age, CEO tenure, new CEO dummy
    - IO: Q_t, Q_{t+1}, momentum, age, MV
    - Financing capacity: cash, leverage, retained earnings, ROA
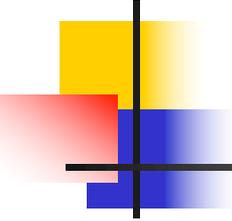
Equity Vesting and Investment

Dependent Variables	(1) ΔRD_q	(2) $\Delta CAPEX_q$	(3) $\Delta NETINV_q$	(4) $\Delta RDCAPEX_q$	(5) $\Delta RDNETINV_q$
$VESTING_q$	**-0.060*****	**-0.089*****	**-0.149****	**-0.159*****	**-0.224*****
	(0.021)	(0.025)	(0.067)	(0.039)	(0.079)
$UNVESTED_{q-1}$	-0.003	0.004	0.051	0.002	0.054
	(0.009)	(0.013)	(0.036)	(0.018)	(0.040)
$VESTED_{q-1}$	-0.001*	0.002	-0.006	0.001	-0.008*
	(0.001)	(0.001)	(0.004)	(0.002)	(0.004)
Controls, year, qtr, firm FE	Yes	Yes	Yes	Yes	Yes
Observations	26,724	26,724	26,724	26,724	26,724
Adjusted R^2	0.093	0.066	0.053	0.099	0.058

1 SD increase in *VESTING* associated with 0.2% fall in *RDNETINV*, 11% of the average ratio. $1.8 million / year
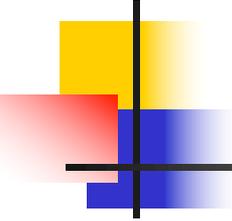
Robustness Checks / Additional Analyses

- 2SLS on instrumented equity sales
  - 1 SD increase in *VESTING* associated with \$140k increase in equity sales, 16% of average level
- PB vesting (Bettis et al. (2010)) not a concern if price-based, is a concern if earnings-based
  - Robust to removal of such grants
  - Hold for options as well as stock
- Delta of 0.7 for all options, or assuming ATM
- Controlling for vega
- Removal of controls
- Levels
- But cannot make strong claims about causality or efficiency

11
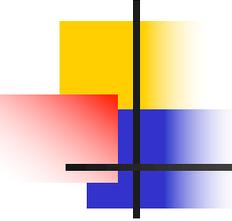
Interpretation

- <u>Myopia hypothesis</u>: vesting equity *causes* CEOs to *inefficiently* reduce investment growth
- <u>Efficiency hypothesis</u>: vesting equity *causes* CEOs to *efficiently* reduce investment growth
  - Still causal
  - No significant link to sales growth, operating expenses, COGS ratio, adjusted net income
- <u>Timing hypothesis</u>: omitted variables explain correlation between vesting equity and investment
  - Requires boards to forecast quarter-level declines in IO several years in advance
  - Results robust to dropping all grants made within 2 years
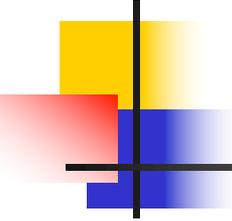
Cross-Sectional Tests of Myopia Hypothesis

- <u>Myopia hypothesis</u>: CEO will trade off costs and benefits of myopia
- *VESTING*-induced investment cuts lower if
  - Benefit lower: more blockholders (Edmans (2009)), higher institutional ownership
  - Cost higher: younger CEOs, smaller firms, younger firms
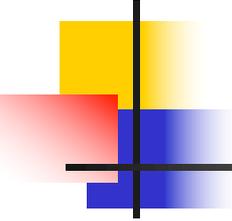
Does the CEO Benefit?

- *VESTING* linked to
  - Same-quarter reductions in investment
  - Same-quarter equity sales
- But, earnings are not announced until start of next quarter
  - Does CEO communicate the earnings increases ahead of time?

Does the CEO Benefit? (cont'd)
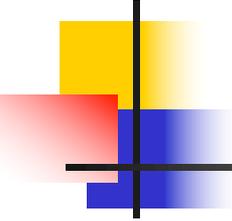
- *VESTING* linked to
  - Same-quarter analyst forecast revisions (three measures)
  - Positive earnings guidance (but not negative or total), in turn associated with 2.5% return
    - Equity sales are concentrated in a window shortly after the guidance event
  - Beating the analyst forecast by ≤ 1 cent, but not > 1 cent
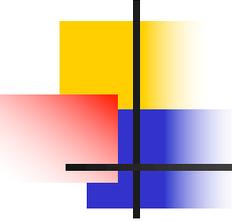
Strategic News Releases in Equity Vesting Months

- Edmans, Goncalves-Pinto, Groen-Xu, and Wang (*RFS* 2017)

- Why is news important?
    - Real decision makers base decisions on news (or stock prices affected by news): Bond, Edmans, and Goldstein (2012)
    - Reduces information asymmetry among investors (cf. Regulation FD)

- News is not mechanically triggered by events, but a strategic decision by the CEO
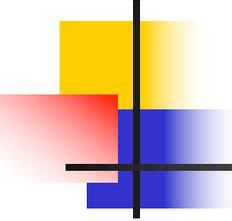
Strategic News Releases in Equity Vesting Months (cont'd)

- 20% more news releases in months in which CEOs are expected to sell equity, instrumented using vesting months. Holds for
  - Discretionary news, not non-discretionary news
  - Positive news, but not negative news
- Fewer news releases in month before and month after
- News releases lead to short-term spike in stock price and trading volume
- CEOs cash out shortly afterwards
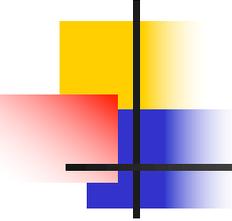
The Long-Term Consequences of Short-Term Incentives

- Edmans, Fang, and Huang (2019)
- Difficult to argue that investment cuts and news releases are damaging to long-term value
  - EFL: LR returns not causal, no announcement date, short time period
  - Used cross-sectional tests, but indirect, so toned down "myopia" claims
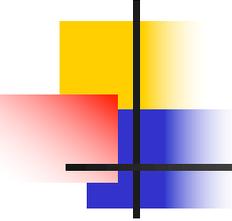
Repurchases

- Boost the short-term stock price (Ikenberry, Lakonishok, and Vermaelen (1995))
- Can be
    - Myopic: Almeida, Fos, and Kronlund (2016)
    - Efficient: ILV, Dittmar (2000), Grullon and Michaely (2004)
- LR returns measure value created by the repurchase, even if not caused by them
- Concerns that repurchases are driven by short-term incentives
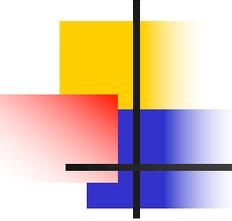
Mergers and Acquisitions

- Can boost the short-term stock price
  - Jensen and Ruback (1983)
- Long-term returns often negative
  - Agrawal, Jaffe, and Mandelker (1992)
  - Negative and significant relation between announcement return and LR return
- Clear announcement date – and AD is relevant
- Significant event; likely that part of LR returns is due to M&A
  - Literature uses LR returns to evaluate M&A
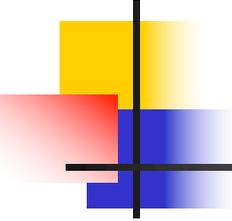
Controls

- Unvested, Vested, Salary, Bonus, Age, Tenure, New CEO

- Repurchases: sales, MB, book leverage, ROA, NROA, RET
  - Huang and Thakor (2013), Dittmar (2000), Jagannathan, Stephens, and Weisbach (2000), Guay and Harford (2000)

- M&A: sales, MB, ROA, RET, market leverage, industry M&A liquidity, Herfindahl
  - Uysal (2011)
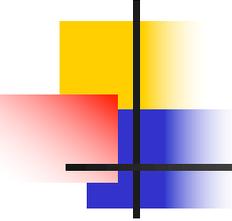
Repurchases

	(1) Probit	(2)	(3) LPM	(4)	(5) OLS
Dep Var		REP_q			$REP\%_q$
$VESTING_q$	**12.263*****	**4.354*****	**2.752*****	**11.888*****	**6.759*****
	(2.681)	(0.875)	(0.529)	(1.776)	(1.458)
Y-Q FE	Yes	Yes	Yes	Yes	Yes
Firm FE			Yes		Yes
Obs	93,537	93,537	93,537	93,537	93,537
Pseudo (Adj) R^2	0.113	0.137	0.507	0.0633	0.254

- Holds after controlling for investment
- Effect of 1σ: 1.2% increase, vs. 37.5%
  - 1.04% vs. 20% for above-mean repurchases
  - OLS: $1.54m, or $6.16m annualized. EFL: $1.8m

Returns to Repurchases

	(1)	(2)	(3)	(4)	(5)
Period	[q-1, q]	[q+1, q+4]	[q+5, q+8]	[q+9, q+12]	[q+13, q+16]
Benchmark			Market		
$VESTING_q$	**0.897****	**-3.288*****	**-2.214*****	**-0.401**	**-0.476**
	(0.422)	(0.553)	(0.586)	(0.558)	(0.484)
Y-Q, Firm FE	Yes	Yes	Yes	Yes	Yes
Obs	28,535	28,479	28,360	27,171	23,458
Adjusted R^2	0.088	0.201	0.219	0.241	0.237
			FF 49 Industry		
$VESTING_q$	**0.722***	**-3.001*****	**-1.842*****	**-0.278**	**-0.722**
	(0.399)	(0.527)	(0.569)	(0.541)	(0.463)
			DGTW		
$VESTING_q$	**0.925****	**-2.884*****	**-1.913*****	**0.320**	**-0.038**
	(0.419)	(0.519)	(0.528)	(0.529)	(0.446)

- Effect of 1σ: 0.3% (0.61% annualized), -1.11%, -0.85%

23

Returns to Repurchases (cont'd)
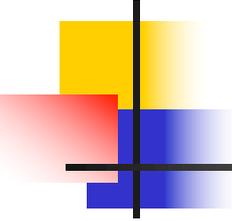
- LT returns to a portfolio of firms which repurchase when VESTING in top quintile
  - For firm across all year-quarters
  - For all firms in that year-quarter
  - For all firms in all year-quarters
- BHAR above DGTW, de-meaned
  - Significantly negative LR returns over $q+1$ to $q+4$ and $q+5$ to $q+8$; also $q+9$ to $q+12$ under the first two definitions
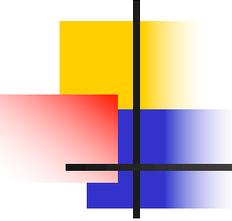
M&A

	(1)	(2)	(3)
	Probit	LPM	
VESTING$_q$	**10.502*****	**3.597*****	**1.641****
	(2.248)	(0.759)	(0.670)
Y-Q FE	Yes	Yes	Yes
Firm FE			Yes
Obs	94,362	94,362	94,362
Pseudo (Adj.) R²	0.069	0.059	0.159

- (Holds after controlling for investment)
- Effect of 1σ: 0.6% increase, vs. 15.8%
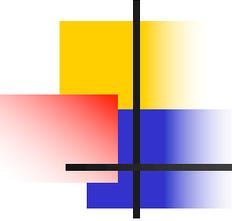
Returns to M&A

	(1)	(2)	(3)	(4)	(5)
Period	[q-1, q]	[q+1, q+4]	[q+5, q+8]	[q+9, q+12]	[q+13, q+16]
Benchmark			Market		
$VESTING_q$	2.033**	-2.260***	-0.981	-2.009**	-1.715**
	(0.838)	(0.862)	(1.017)	(0.915)	(0.832)
Y-Q, Firm FE	Yes	Yes	Yes	Yes	Yes
Obs	12,294	12,294	12,258	12,207	11,751
Adjusted R^2	0.176	0.210	0.217	0.256	0.246
			FF 49 Industry		
$VESTING_q$	1.768**	-1.412*	-1.584*	-1.995**	-1.530*
	(0.771)	(0.812)	(0.950)	(0.890)	(0.791)
			DGTW		
$VESTING_q$	1.835**	-1.623*	-0.178	-0.667	-1.689**
	(0.902)	(0.928)	(1.102)	(1.008)	(0.838)

- Effect of 1σ: 1.47% (annualized), -0.81%, -0.35%, -0.72%, -0.62%
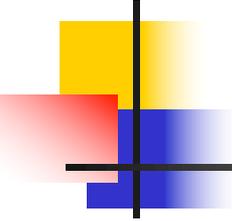
M&A Goodwill Impairment

	(1) [q+1, q+8]	(2) [q+1, q+12]	(3) [q+1, q+16]
$VESTING_q$	**0.846***	**2.379****	**2.842***
	(0.497)	(1.081)	(1.538)
Y-Q FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Obs	7,200	7,200	7,200
Pseudo (Adj.) R^2	0.420	0.460	0.457
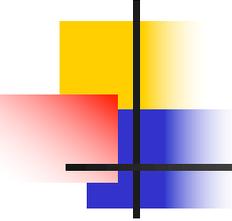
Stock Sales

- CEO stock sales concentrated in a short window after repurchases and M&A
  - Inconsistent with repurchases being motivated by undervaluation, or M&A by long-term value creation
  - Bonaimé and Ryngaert (2013)
  - Jackson (2018)
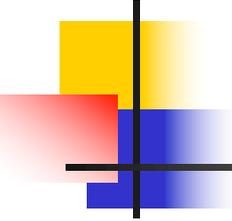
Conclusion

- Vesting equity associated with
  - Higher probability and amount of repurchases
  - Higher probability of M&A
  - More positive ST returns, more negative LT returns, to both actions
- Does not mean that longer vesting periods are better
  - Subject CEO to risk
  - May encourage short-termism (Laux (2012)) or excessive conservatism (Brisley (2006))
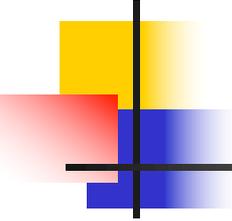
Implications

- UK Government's Green Paper recommended increasing vesting periods from 3 to 5 years
- Norwegian Sovereign Wealth Fund, House of Commons Corporate Governance Inquiry advocating long-vesting equity
  - Unilever, Kingfisher, RBS implementing
- Change the conversation from pie-splitting to pie-enlarging