Frankfurt School

# What Do Financial Economists Know About Short Termism?


**Prof. Zacharias Sautner**

**Frankfurt School of Finance & Management, ECGI**

# Guiding Principles

- Balanced assessment
- "Credibility revolution"
  - From correlation to causation
  - Highly relevant to provide policy guidance
- Mostly empirical "micro" evidence
  - Difficult to infer causation from aggregate, "macro" relationships (counterfactual?)
- High-quality research
  - Peer reviewed, top journals, some exceptions
- Awareness that I have missed some of your work…

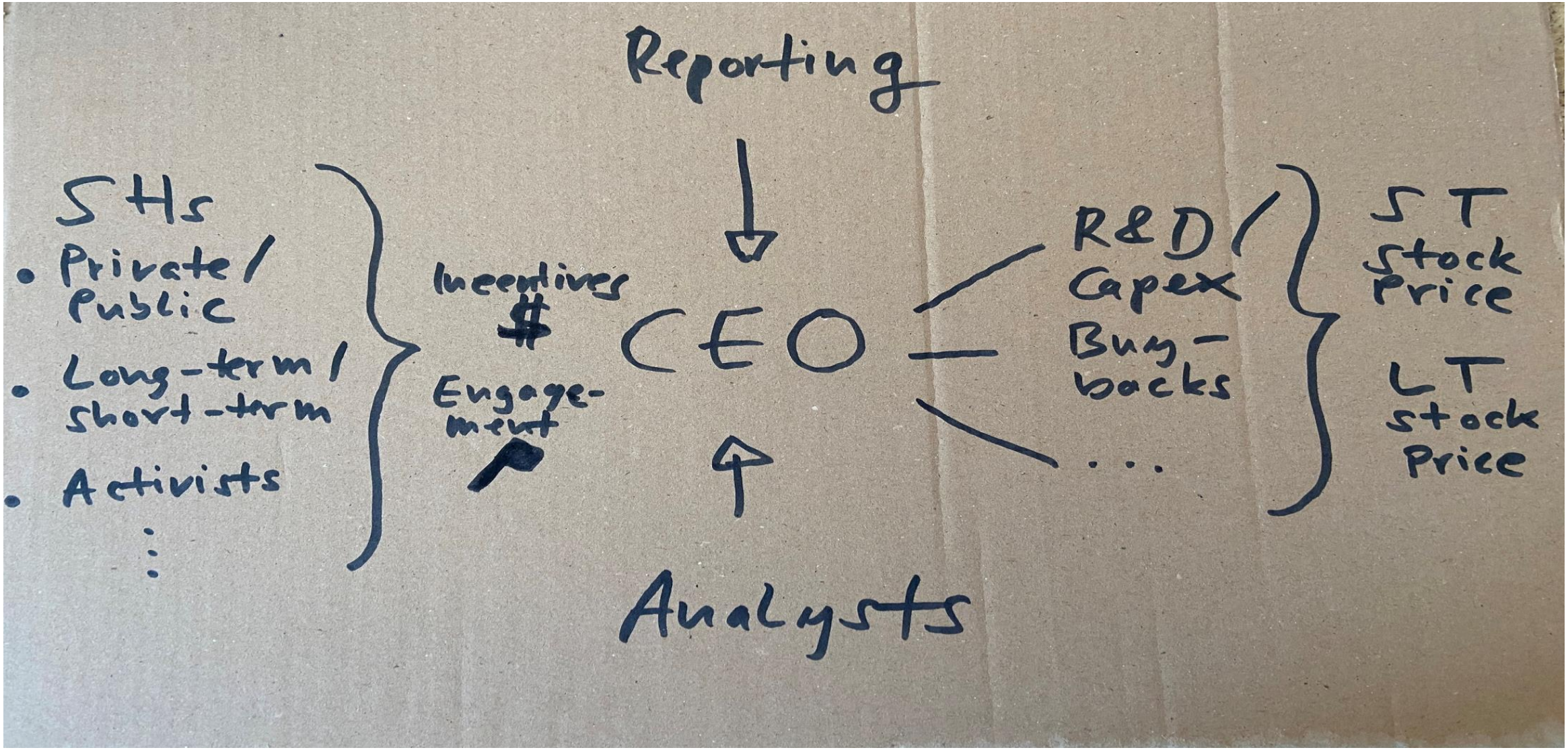
# What is Short-termism?

**Actions that focus on short-term gains *at the expense* of long-term value**

Elements

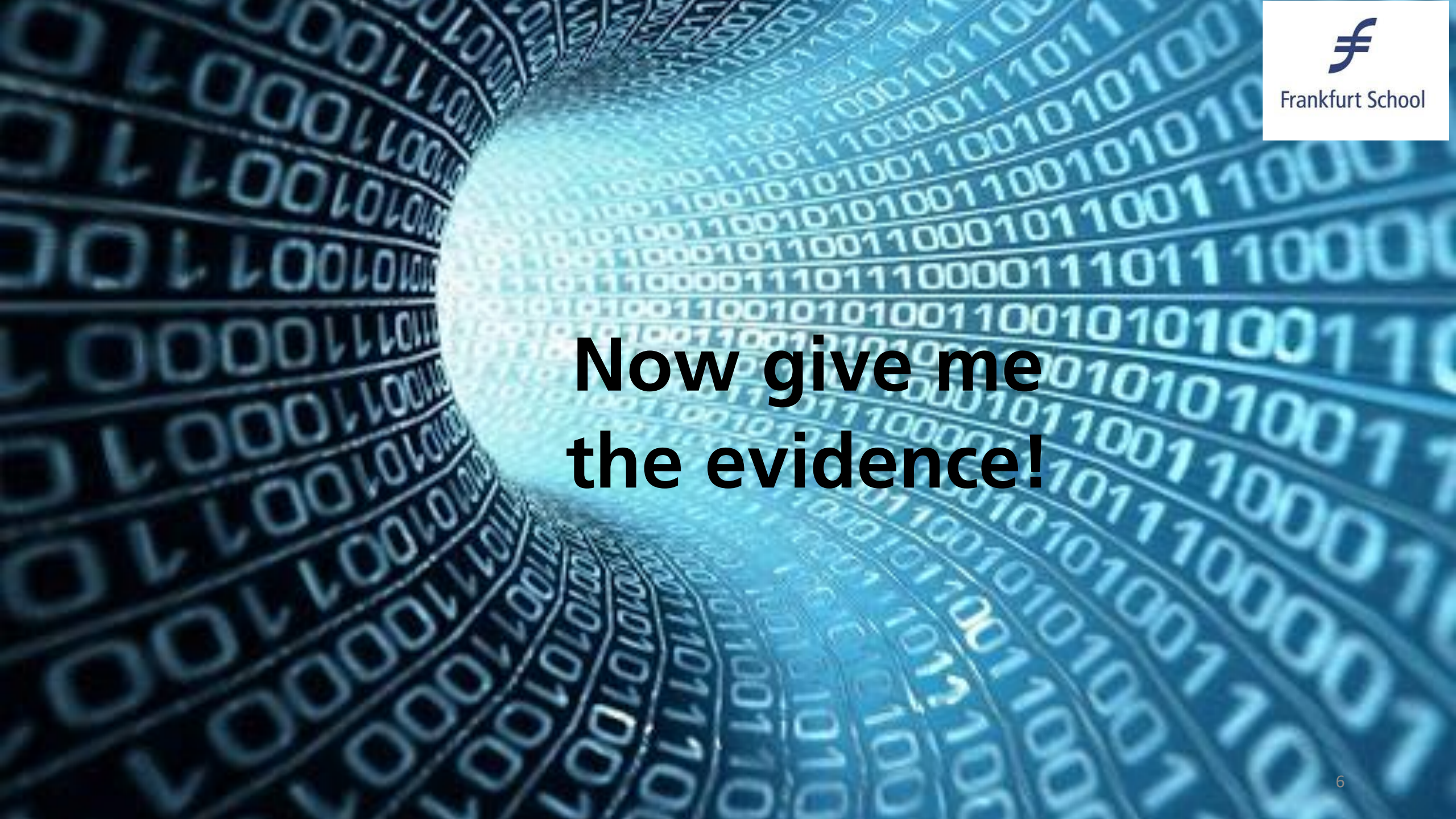
- Actions (investment, payouts, …)
- Long-term value destruction
- Focus on short-term stock price
- Market inefficiency (?)

# My Map


Reporting
SHs
Private/ Public
Long-term/ short-term
Activists
Incentives
$
Engage-ment
CEO
R&D/ Capex
Buy-backs
...
ST Stock Price
LT Stock Price
Analysts

# Agenda

- Executive compensation
  - Short-term incentives and long-term investment
  - Short-term incentives and long-term firm value
- Financial reporting
  - Frequency of reporting and long-term investment
  - Analyst earnings forecasts and long-term investment
- Ownership
  - Private versus public
  - Long-term versus short-term
  - Activist versus non-activist




Frankfurt School

# Executive Compensation

# Executive Compensation

- Short-term incentives and long-term investment
  - Question: Do concerns about the short-term stock price affect long-term investment?
  - Measure of short-term concerns: amount of equity-based compensation that vests (becomes exercisable)
  - Challenge: Short-term incentives are endogenous

- Short-term incentives and long-term firm value
  - Question: How do short-term actions affect long-term firm value?
  - Challenge: Isolating long-term effects of myopic actions; difficult to look at long-term stock returns

# Edmans, Fang, and Lewellen (RFS 2017)

Causal effect: vested equity largely driven by grants made years ago

Results: Vested equity induces CEOs to reduce investment

Also: Positive effect on short-term earnings, analysts forecast revisions, earnings guidance

1 STD increase in *VESTING*
-> 0.2% decline in *RDNETINV* (11% mean investment-to-assets ratio)
(NETINV=change in PPE)

**Table 2**
**Vesting equity and change in investment**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Dependent variables** | $\Delta RD_q$ | $\Delta CAPEX_q$ | $\Delta NETINV_q$ | $\Delta RDCAPEX_q$ | $\Delta RDNETINV_q$ |
| $VESTING_q$ | **−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) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Quarter fixed effects | Yes | Yes | Yes | Yes | Yes |
| Firm fixed effects | 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 |

OLS regression results on the relationship between the CEO's vesting equity and the change in investment. Variable definitions are in Appendix A. *VESTING*, *UNVESTED*, *VESTED*, *SALARY*, and *BONUS* are in billions. *CEOAGE*, *CEOTENURE*, and *FIRMAGE* are in hundreds. Robust standard errors are in parentheses. ***, **, and * indicate significance at the 1% 5%, and 10% two-tailed levels, respectively.

Controls not reported

# Ladika and Sautner (RF 2020)

1 STD increase in the fraction of options accelerated -> Investment rate down by 0.052 (24% of STD)

Causal effect: accelerated option vesting varies across firms based on FYE

Results: Accelerated vesting induces CEOs to reduce investment

Also: Positive effect on short-term earnings, stock prices

| Dependent variable | Total investment | Total investment | Total investment | R&D | Capex | Total investment | R&D | Capex |
|---|---|---|---|---|---|---|---|---|
| Model | OLS | OLS | 2SLS | 2SLS | 2SLS | 2SLS | 2SLS | 2SLS |
| Sample | All firms | Thomson firms | All firms | All firms | All firms | Thomson firms | Thomson firms | Thomson firms |
| Window of analysis | 2005–06 | 2005–06 | 2005–06 | 2005–06 | 2005–06 | 2005–06 | 2005–06 | 2005–06 |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Frac. options accelerated | –0.003 | | –0.516*** | –0.275*** | –0.248*** | | | |
| | (–0.16) | | (–3.70) | (–3.55) | (–2.58) | | | |
| Log accelerated options delta | | –0.000 | | | | –0.017*** | –0.010*** | –0.009** |
| | | (–0.20) | | | | (–3.31) | (–3.11) | (–2.25) |
| Year-fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry-fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| First-stage diagnostics | | | | | | | | |
| Coeff. (FAS 123-R takes effect) | N/A | N/A | 0.028*** | 0.028*** | 0.028*** | 0.724*** | 0.723*** | 0.724*** |
| *t*-stat. (FAS 123-R takes effect) | N/A | N/A | (6.17) | (6.17) | (6.17) | (6.96) | (6.98) | (6.96) |
| KP *F*-stat. (FAS 123-R takes effect) | N/A | N/A | 38.08 | 38.08 | 38.08 | 48.49 | 48.76 | 48.49 |
| Observations | 4,111 | 3,741 | 4,111 | 4,111 | 4,111 | 3,741 | 3,750 | 3,741 |
| Adjusted $R^2$ | 0.307 | 0.309 | | | | | | |

Controls not reported

# Flammer and Bansal (SMJ 2017)

Causal effect: shareholder proposals on long-term exec. pay that pass/fail by small margin

Results: Adoption leads to increase in investments (innovation, stakeholder relationships)

Also: Positive effect on op. performance, firm value

| | Operating performance | | | Long-term strategies | |
|---|---|---|---|---|---|
| | ROA (1) | NPM (2) | Sales growth (3) | Innovation (R&D expenditures) (4) | Stakeholders (KLD-index) (5) |
| Year of vote, $t$ | −0.0029 | −0.0015 | −0.0154 | 0.0036 | 0.292 |
| | (0.0044) | (0.0091) | (0.0192) | (0.0020) | (0.168) |
| One year later, $t+1$ | 0.0042 | 0.0077 | 0.0149 | 0.0049 | 0.585 |
| | (0.0046) | (0.0093) | (0.0198) | (0.0020) | (0.171) |
| Years $t+2$ to $t+4$ | 0.0094 | 0.0191 | 0.0385 | 0.0043 | 0.631 |
| | (0.0047) | (0.0097) | (0.0204) | (0.0022) | (0.174) |
| Polynomial in vote share | Yes | Yes | Yes | Yes | Yes |
| R-squared | 0.803 | 0.806 | 0.289 | 0.941 | 0.870 |
| Observations | 3,666 | 3,666 | 3,743 | 1,902 | 3,462 |

The regressions are estimated using the dynamic RDD specification of Cuñat *et al.* (2012) with firm-meeting fixed effects. Standard errors (reported in parentheses) are clustered at the firm level.

# Executive Compensation

- Short-term incentives and long-term investment
  - Question: Do concerns about the short-term stock price affect long-term investment?
  - Measure of short-term incentives: amount of equity-based compensation that vests (becomes exercisable)
  - Challenge: Short-term incentives are endogenous

- Short-term incentives and long-term firm value
  - Question: How do short-term actions affect long-term firm value?
  - Challenge: Isolating long-term effects of myopic actions; difficult to look at long-term stock returns

# Edmans, Fang, and Huang (WP 2020)

Causal effect: vested equity largely driven by grants made years ago; key managerial actions

Results: Vesting equity increases share buybacks, M&A

Larger negative abnormal long-term abnormal returns following buybacks, M&A when more equity vested

| **Period** | (1) *m-2* | (2) *m-1* | (3) *m* | (4) *[m+1, m+12]* | (5) *[m+13, m+24]* | (6) *[m+25, m+36]* | (7) *[m+37, m+48]* |
|---|---|---|---|---|---|---|---|
| **Dependent Variables** | *BHAR over value-weighted market index return* | | | | | | |
| *VESTING*$_m$ | **0.220** | **0.919**$^{***}$ | **0.026** | **-3.328**$^{***}$ | **-3.239**$^{***}$ | **-1.437**$^{*}$ | **-0.258** |
| | (0.216) | (0.236) | (0.221) | (0.633) | (0.734) | (0.784) | (0.603) |
| Year-Month & Firm FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 73,433 | 73,449 | 73,452 | 72,499 | 69,388 | 66,254 | 62,767 |
| Adjusted $R^2$ | 0.512 | 0.512 | 0.512 | 0.512 | 0.512 | 0.512 | 0.512 |

| **Period** | (1) *[m+1, m+12]* | (2) *[m+13, m+24]* | (3) *[m+25, m+36]* | (4) *[m+37, m+48]* |
|---|---|---|---|---|
| **Dependent Variables** | *BHAR over value-weighted market index return* | | | |
| *VESTING*$_m$ | **-1.930**$^{**}$ | **-1.871**$^{*}$ | **-2.160**$^{**}$ | **-1.703**$^{*}$ |
| | (0.958) | (1.020) | (1.011) | (0.911) |
| Year-Month & Firm FE | Yes | Yes | Yes | Yes |
| Observations | 46,021 | 45,551 | 43,678 | 41,643 |
| Adjusted $R^2$ | 0.590 | 0.590 | 0.590 | 0.590 |

# Financial Reporting

# Financial Reporting

- Frequency of reporting and long-term investment
  - Question: Does quarterly financial reporting induce short-termist behavior due to the focus on short-term earnings?
  - Identify effects from changes in reporting regulation in the US, EU, UK

- Analyst earnings forecasts and long-term investment
  - Question: Do quarterly earnings forecasts/EPS targets by analysts induce short-termist behavior?

# Kraft, Vashishtha, and Venkatachalam (TAR 2018)

Causal effect: transition of US firms from annual to semi-annual to quarterly reporting (1950–1970)

Results: Increased reporting frequency is associated with less investment

Also: Stronger effects in industries where investments take long to generate earnings

| | *CAPEX* | *CHPPE* |
|---|---|---|
| | (1) | (2) |
| *TREAT* | 0.014* | 0.012* |
| | (1.934) | (1.747) |
| *AFTER* | 0.006* | 0.006 |
| | (1.873) | (1.512) |
| *TREAT*AFTER* | -0.016*** | -0.012** |
| | (-2.895) | (-2.028) |
| *TREAT+TREAT*AFTER* | -0.002 | -0.000 |
| | (-0.258) | (-0.049) |
| Firm random effects | YES | YES |
| State*Year fixed effects | YES | YES |
| Observations | 5,791 | 6,902 |
| R-squared | 0.275 | 0.300 |

TREAT is an indicator for treatment firms, which are firms that experience an increase in reporting frequency. AFTER is an indicator for firm-year observations after the treatment year.

Controls not reported

# Ernstberger et al. (TAR 2017)

Causal effect: Reporting frequency in EU increased with mandate to issue quarterly Interim Management Statements (IMSs). Compare newly mandated with matched firms already mandated to report quarterly

Results: Increase in real activities manipulations (RAM) (e.g., discretionary spending) for firms mandated to switch from semiannual to quarterly IMS reporting, relative to matched control firms.

| | Baseline Results $RAM_t$ | |
|---|---|---|
| | **Coeff.** | **Sign.** |
| Variables of Interest | | |
| $POST_t$ | −1.259 | (1.01) |
| $SEMI \times POST_t$ | 3.077 | (4.16)*** |
| Costs Associated with Real Activities Manipulation | | |
| $SHARE_{t-1}$ | 0.156 | (0.18) |
| $ZSCORE_{t-1}$ | 0.025 | (0.32) |
| $INST_{t-1}$ | −0.028 | (4.59)*** |
| Costs Associated with Accrual-Based Earnings Management | | |
| $BIGFOUR_t$ | −2.918 | (1.55) |
| $TENURE_t$ | −1.327 | (3.31)*** |
| $ENF_t$ | −0.203 | (0.06) |
| $NOA_{t-1}$ | 0.975 | (1.89)* |
| $CYCLE_{t-1}$ | −2.900 | (4.57)*** |
| Further Control Variables | | |
| $ROA_t$ | 0.124 | (2.98)*** |
| $ASSETS_t$ | 0.935 | (0.72) |
| $MTB_t$ | −0.140 | (0.85) |
| $EARN_t$ | −0.422 | (5.72)*** |
| $COVERAGE_t$ | −0.009 | (0.23) |
| $MKT\_LIQU_t$ | 0.001 | (1.75) |
| $MKT\_RETURN_t$ | −0.002 | (0.12) |
| $RAM_{t-1}$ | 0.243 | (6.14)*** |
| $IMR_t$ | | |
| Firm and year fixed effects | Included | |
| Adj. $R^2$ | 85.1% | |
| Number of Obs. | 5,304 | |

SEMI indicates whether an observation is related to the treatment group of firms newly mandated to issue IMSs. POST: fiscal year after the mandate to issue IMSs in the EU

# Nallareddy, Poze, and Rajgopal (WP 2017)

Causal effect: Start of mandatory quarterly reporting by the UK Financial Conduct Authority in 2007 and the end of the requirement in 2014

Results: Mandatory quarterly reporting has no impact on investment

Also: Companies that voluntarily moved back from to semi-annual reporting show no increases investment

| | (1) Capex | (2) Capex | (3) Capex | (4) NetPPE | (5) NetPPE | (6) NetPPE | (7) R&D | (8) R&D | (9) R&D |
|---|---|---|---|---|---|---|---|---|---|
| Treat | -0.00 | -0.01 | -0.02* | 0.00 | -0.03 | -0.05* | 0.00 | 0.00 | -0.00 |
| | (0.72) | (0.23) | (0.06) | (0.73) | (0.26) | (0.10) | (0.72) | (0.89) | (0.80) |
| **Post*Treat** | **-0.00** | **-0.01*** ** | **0.01** | **-0.01** | **-0.03*** ** | **0.02** | **-0.00** | **0.00** | **0.01** |
| | **(0.73)** | **(0.00)** | **(0.15)** | **(0.50)** | **(0.00)** | **(0.47)** | **(0.39)** | **(0.45)** | **(0.43)** |
| #Obs | 3,215 | 3,215 | 3,215 | 3,237 | 3,237 | 3,237 | 1,075 | 1,075 | 1,075 |
| Adj $R^2$ | 0.53 | 0.66 | 0.67 | 0.69 | 0.85 | 0.85 | 0.87 | 0.92 | 0.92 |
| Firm FE | NO | YES | YES | NO | YES | YES | NO | YES | YES |
| Year FE | NO | NO | YES | NO | NO | YES | NO | NO | YES |

Controls not reported

*Treat* equals 1 for firms that mandatorily switched to quarterly reporting and 0 otherwise (i.e., control firms reported quarterly before/after). *Post* equals 1 for the sample years 2008-2010 and 0 for the years 2005-2007.

# Financial Reporting

- Frequency of reporting and long-term investment
  - Question: Does quarterly financial reporting induce short-termist behavior due to the focus on short-term earnings?
  - Identify effects from changes in reporting regulation in the US, EU, UK

- Analyst earnings forecasts and long-term investment
  - Question: Do quarterly earnings forecasts/EPS targets by analysts induce short-termist behavior?

# Graham, Harvey, and Rajgopal (JAE 2005)

Causal effect: Survey among 400+ executives

Results: 80% willing to decrease discretionary spending on R&D, advertising, maintenance to meet an earnings target

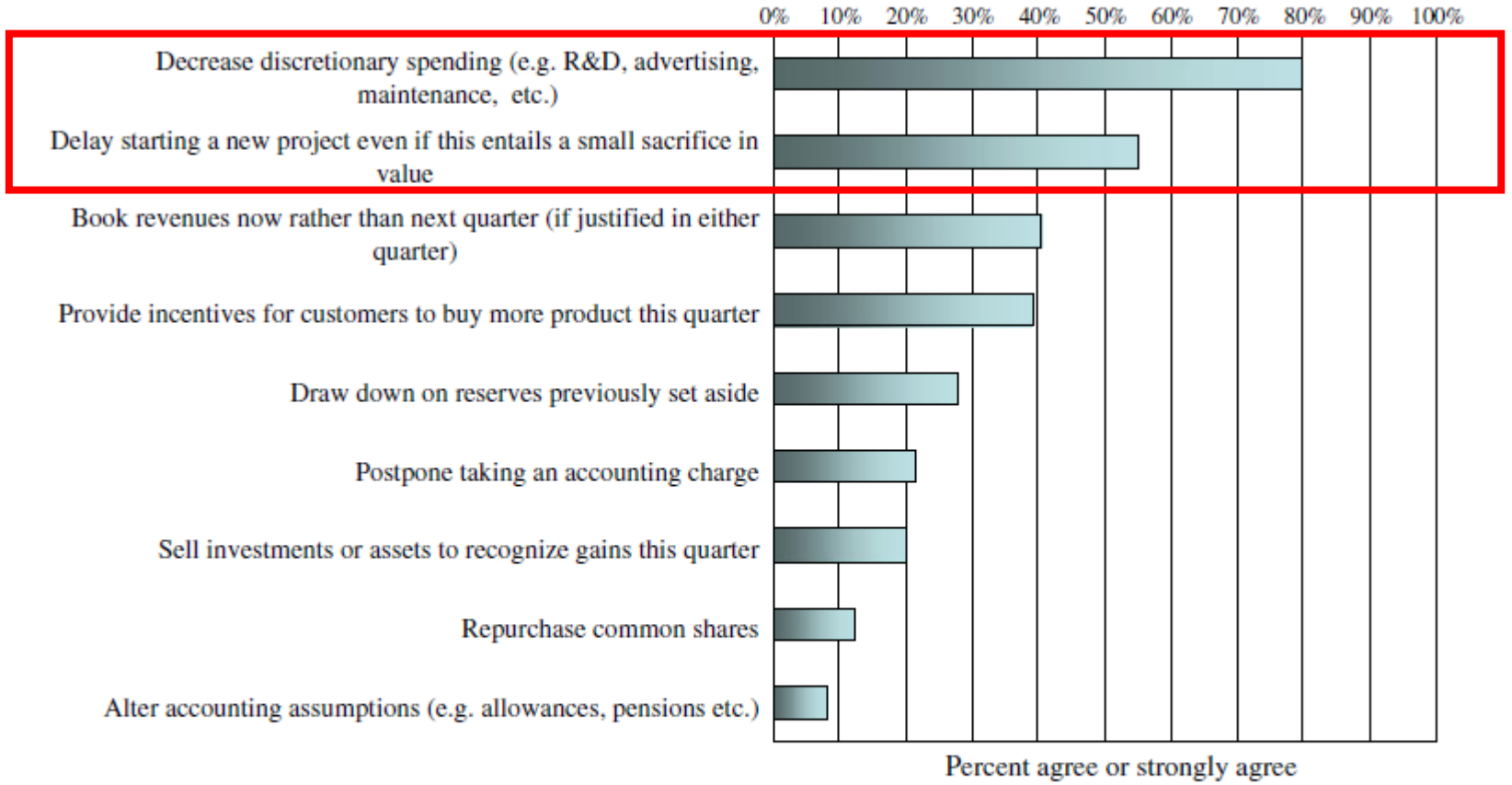



Fig. 5. Responses to the question: "Near the end of the quarter, it looks like your company might come in below the desired earnings target. Within what is permitted by GAAP, which of the following choices might your company make?" based on a survey of 401 financial executives.

# Almeida, Fos, and Kronlund (JFE 2016)

Causal effect: Reg. discontinuity to identify the real effects of EPS-target-induced share repurchases

Results: Probability of share repurchases (increase EPS) is higher for firms that would have just missed the EPS forecast w/o the repurchase, compared with firms that "just beat" the forecast

*EPS-motivated* repurchases lead to less employment, less investment (see table)

| *Dependent variable:* | *Employment* (1) | *Capex* (2) | *R&D* (3) |
|---|---|---|---|
| *Panel A: Reduced form* | | | |
| Negative pre-repurchase EPS surprise | -0.4824*** | -0.0022*** | -0.0006*** |
| | (-8.32) | (-9.67) | (-6.46) |
| *N* | 37,230 | 36,344 | 37,772 |
| *Panel B: Reduced form (linear control)* | | | |
| Negative pre-repurchase EPS surprise | -0.5085*** | -0.0010*** | -0.0003** |
| | (-5.52) | (-3.30) | (-2.14) |
| *N* | 37,230 | 36,344 | 37,772 |
| *Panel C: IV* | | | |
| Repurchases/Assets (instrumented) | -222.2*** | -0.981*** | -0.265*** |
| | (-6.90) | (-7.49) | (-5.59) |
| *N* | 37,230 | 36,344 | 37,772 |
| *Panel D: IV (linear control)* | | | |
| Repurchases/Assets (instrumented) | -155.8*** | -0.301*** | -0.087** |
| | (-4.84) | (-3.15) | (-2.09) |
| *N* | 37,230 | 36,344 | 37,772 |

Differences in outcome variables across firms with negative pre-repurchase EPS surprises and those that just meet their EPS forecast without repurchasing stock

# Almeida et al. (2020)

- Study the long-term effects of the incentive to engage in EPS-driven repurchases

- Leads to lower long-term productivity, but only if there are additional frictions that prevent firms from downsizing efficiently
  - Most plants in states with weak labor (unions)
    - Reduction in investment in unproductive plants; minimizes impact of downsizing on productivity.
  - Most plants in states with strong labor (unions)
    - Cut investment inefficiently, across the board, even in productive plants

Frankfurt School

# Ownership

# Ownership

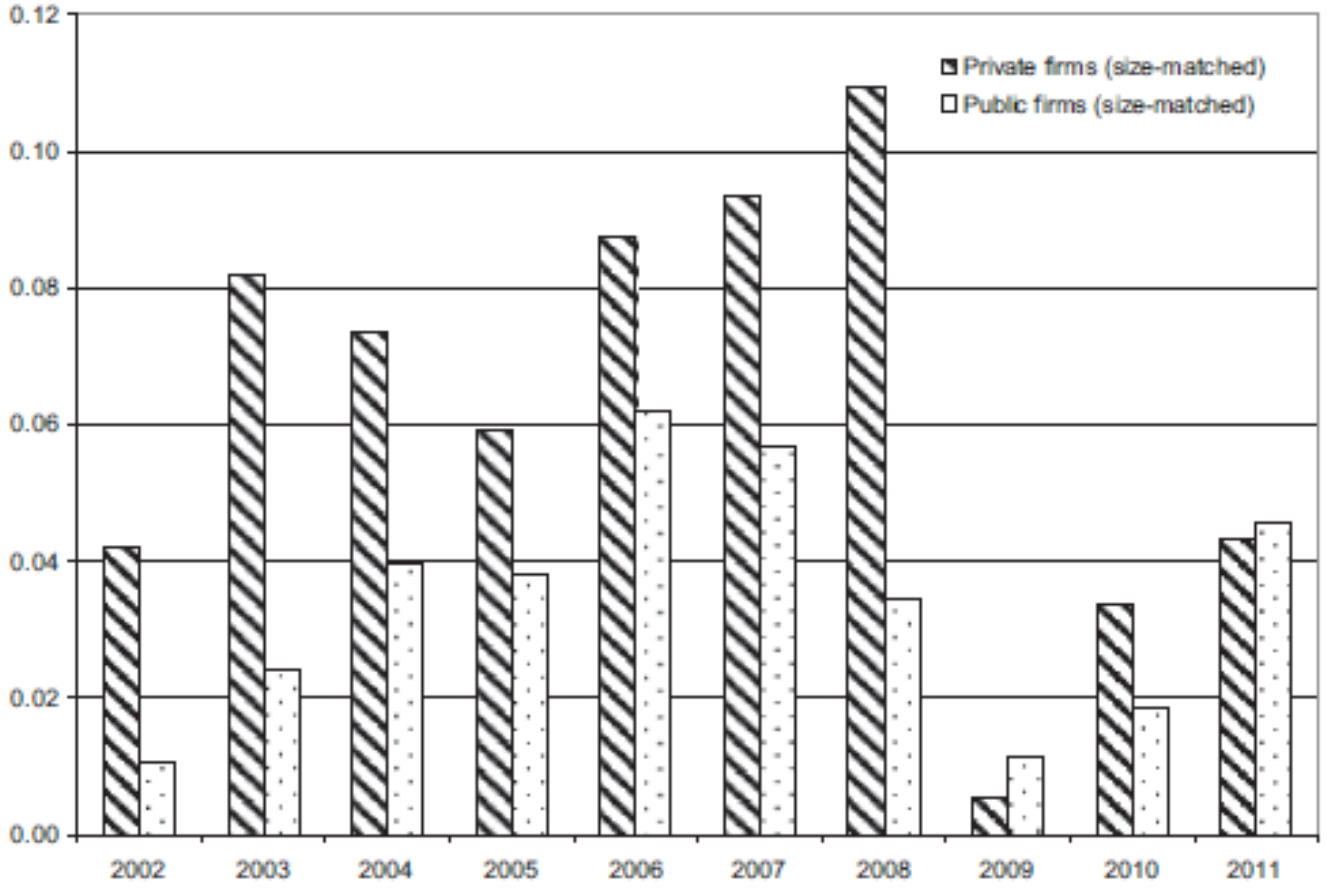
- Private versus public
- Long-term versus short-term
- Activist versus non-activist

# Asker, Farre-Mensa, and Ljungqvist (RFS 2015)

Causal effect: Compare similar public and private firms (matching)

Results: Compared with private firms, public firms invest less (investment rate of 4.1% versus 7.5%), year-on-year investment changes are smaller (figure)

Also: public firms are less responsive to changes in investment opportunities




Average annual change in gross fixed assets (scaled by total assets)

# Ownership

- Private versus public
- Long-term versus short-term
- Activist versus non-activist

# Long-term versus Short-term Investors

Presence of short-term investors is associated with (causes?) …

- … less investment
  - Bushee (TAR 1998); Derrien et al. (JFQA 2013); Cremers et al. (MS 2020):
- … more fraud, more empire building
  - Harford et al. (JCF 2018)
- … worse M&A decisions
  - Gaspar et al. (JFE 2005), Chen et al. (JFE 2007)

# Cremers, Pareek, and Sautner (MS 2020)

Causal effect: Russel 2000 index inclusion

Results: Higher ownership by short-term investors leads to less investment

Also: Higher short-term ownership leads to increases in short-term earnings, and temporary boosts in the stock price that reverse over time

| Dependent variable | R&D/Assets | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| *Post Inclusion × Large Increase Transient IO* | −0.013** | −0.014** | −0.013** | −0.012** | — |
| | (−2.29) | (−2.40) | (−2.33) | (−2.18) | — |
| *Year 0 × Large Increase Transient IO* | — | — | — | — | −0.010* |
| | — | — | — | — | (−1.93) |
| *Year +1 × Large Increase Transient IO* | — | — | — | — | −0.013** |
| | — | — | — | — | (−2.17) |
| *Year +2 × Large Increase Transient IO* | — | — | — | — | −0.017** |
| | — | — | — | — | (−2.45) |
| *Year +3 × Large Increase Transient IO* | — | — | — | — | −0.014* |
| | — | — | — | — | (−1.80) |
| *Year +4 × Large Increase Transient IO* | — | — | — | — | −0.015** |
| | — | — | — | — | (−2.00) |
| Industry-by-year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Firm fixed effects | Yes | Yes | Yes | Yes | Yes |
| No. of observations | 5,524 | 5,469 | 5,469 | 5,468 | 5,469 |
| Adjusted $R^2$ | 0.833 | 0.834 | 0.834 | 0.835 | 0.834 |

Controls not reported

# Ownership

- Private versus public
- Long-term versus short-term
- Activist versus non-activist

# Activist Investors

Presence of an activist investors causes …

- … higher stock prices
  - Brav et al. (JF 2008)
- … more investment/higher productivity
  - Brav et al. (RFS 2015)
- … higher long-term firm values
  - Bebchuk et al. (CLR 2015)

# Summary of Evidence

Short-termism?

Some evidence

Mixed evidence

No evidence

- Executive compensation
  - Short-term incentives and long-term investment
  - Short-term incentives and long-term firm value
- Financial reporting
  - Frequency of reporting and long-term investment
  - Analyst earnings forecasts and long-term investment
- Ownership
  - Private versus public
  - Long-term versus short-term
  - Activist versus non-activist

# Bottom Line

- Nuanced perspective is needed
  - Short-termism is a first-order issue, but only in *certain parts* of the system
  - Evidence does *not* suggest that the system is broken

- What is the cause of the problem?
  - Shareholder orientation is not the cause, rather a lack thereof
  - Should not confuse the symptoms with the disease (underlying problem)?
    - E.g., Payouts are not the disease
  - Reform needs to address selective features of the system
    - Fix the underlying problems, not the symptoms

# Caveats

- Publication bias?
- Personal bias?
- Sample bias?


Frankfurt School

# THANKS FOR YOUR ATTENTION