Dividend Payments as a Response to Peer Influence

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What Determines Dividend Payments?

- Firms' decisions to change their dividend payments tend to occur at similar times.
- Are correlations in dividend choices across firms consistent with traditional theories of dividend policy or with other theories in which peer firm behavior plays a central role?

Motivation for Studying Peer Influence

"Among the important factors was the normal pay-outs and speeds of adjustment of competitive companies whose securities were close substitutes investment-wise or whose securities already had the investment standing management hoped to attain."

– John Lintner (1956)

Numerous Real-world Examples

In 2010, UnitedHealth's CEO announced a "meaningful" dividend increase from 3 cents per share to 12.5 cents per share. Shortly thereafter, Aetna raised its dividend to 15 cents per share, up from 4 cents per share. Three weeks later, WellPoint's CEO, likely influenced by his peer firms' dividend changes, announced a new, "meaningful" dividend of 25 cents per share.

aetna

WELLPOINT.

Outline of What I Do in This Paper

- Evaluate key inputs in Lintner's model: the target payout ratio and the adjustment period.
- Hypothesis is that firms belonging to an industry in which many peer firms are increasing their dividend payments will either shorten the adjustment period or increase the target payout ratio.
- Use instrumental variable framework to provide causal evidence.
- Explore underlying channels: strategic, behavioral, etc...
- Examine aggregate industry evidence using excess-variance approach to understand overall importance.

Preview of Main Findings

- Firms' dividend policies are responsive to peer influence:
  - Accelerate changes by 1.5 quarters
  - Increase payments 16% more than they otherwise would
- Peer effects matter in increases but not decreases.
- In contrast to dividends, repurchases show no peer effects.
- Examine the economic channels for why peer effects exist and find support for a behavioral and industrial organization channel
- Evaluate announcement returns and find that investors partially anticipate the consequences of peer effects

What is the Definition of Peer Influence?

- Intuitively – real-world examples
- Formally – the propensity of a firm to alter its dividend policy in a way that varies with the prevalence of the same action in some reference group containing the firm.
- Key is that peer influence is distinct from other commonalities such as institutional settings, industry factors, and correlated firm-specific attributes.

Identification Challenge

- **Reflection problem (Manski, 1983)**: a specific form of endogeneity arising in the attempt to infer whether the average behavior in a group influences the behavior of the individuals who compose the group.

- Three hypotheses exist that can explain why firms belonging to the same industry tend to behave similarly:
  - **Peer effects:** the propensity of a firm to behave in a certain way varies with the behavior of the industry
  - **Contextual effects:** the propensity of a firm to behave in a certain way varies with the characteristics of the industry
  - **Correlated effects:** firms in the same industry tend to behave similarly due to similar firm characteristics or institutional environments

Instrumental Variable Specification

$$Div_{jit} = \beta Peer_{(-j)it'} + \theta X_{jit} + f_j + \delta_t + \epsilon_{jit}$$

Div_{jit} represents the dividend decision for firm j in industry i in time t and Δt is one quarter.

$Peer_{(-j)it'}$, is the fraction of peer firms increasing or decreasing dividend payments.

t' instead of t designates that I use the exact dividend declaration date to calculate which peer choices were observable before the individual firm's decision.

X_{jit} is a vector of the observable firm-specific covariates and peer averages of those covariates (i.e., common and contextual effects).

f_j is a firm fixed effect, δ_t is a time fixed effect, and ϵ_{jit} is the unobservable error component.

Instrument is Peer Firm Idiosyncratic Risk

- Hoberg and Prabhala (2009) establish relevance.
- Intuitively, when a firm's idiosyncratic risk decreases, the firm requires less cash and instead opts to distribute more.
- Idiosyncratic risk, distinct from industry risk, is both unpredictable and unique to an individual firm.
- Consequently, other firms' idiosyncratic risk cannot be directly linked to a firm's own dividend decision. Instead, other firms' idiosyncratic risk works via the impact on peers' dividend decisions.

Exclusion Restriction

- Requires that the peer firms' average idiosyncratic risk alter a firm's dividend only via its effect on peers' dividends.
- The instrument's construction isolates a risk that is orthogonal to market risk and industry risk and thereby idiosyncratic to a peer firm.
- I use the procedure outlined in Campbell et al. (2001) to calculate idiosyncratic risk in a manner consistent with such orthogonality.
- Condition on industry risk in the first-stage estimation of peer influence. Given that the exclusion restriction applies after conditioning on observables, this approach mitigates concerns that peer idiosyncratic risk affects dividend decisions through correlation with common industry risk.

Effect of Peer Influence

	Peer increases	
Dependent variable= Dividend increase	(1)	(2)
Peer influence	18%	29%
	(3.22)***	(2.21)**
First-stage *F*-statistic	167.2	40.5
t-statistic on instrument	(12.93)***	(6.37)***
	Peer decreases	
Dependent variable = Dividend decrease	(1)	(2)
Peer influence	-4%	-31%
	(0.31)	(1.12)
First-stage *F*-statistic	36.9	12.4
t-statistic on instrument	(6.07)***	(3.52)***
Firm-specific covariates	Y	Y
Peer firm averages	N	Y
Firm and time FE	Y	Y
Number of observations	101,161	

Effect of Peer Influence in Context

- Peer influence greater for increases than decreases. Asymmetry is consistent with survey evidence (Brav et al., 2005).
- Peer influence does not displace other known dividend determinants: repurchases, profitability, market-to-book, leverage, tangibility, investment, cash holdings, firm risk, and firm size.
- Peer influence has a coefficient of 17%, market-to-book has a coefficient of 5%, and leverage has a coefficient of -5%. This suggests meaningful economic magnitude.

Two Inputs into Lintner's Partial Adjustment Model

- Peer influence accelerates time to change by 1.5 quarters and increases payments by 16% more.

Dependent variable= Time to Change (Quarter)	(1)	(2)
Peer influence	-1.48	-0.98
	(2.06)**	(1.82)*
First-stage *F*-statistic	39.0	61.5
t-statistic on instrument	(6.25)***	(7.84)***
Annual changers included	N	Y
Number of observations	8,571	12,162
Dependent variable = Dividend Payout Change		
Peer influence	16%	33%
	(2.75)***	(2.31)**
First-stage *F*-statistic	167.2	40.5
t-statistic on instrument	(12.93)***	(6.37)***
Firm-specific covariates	Y	Y
Firm and time FE	Y	Y
Number of observations	101,161	

Robustness

- Placebo test using peer groups composed of randomly selected firms. Find no effects.
- Placebo test using changes in earnings. Dividends usually follow a permanent shift in earnings (Lintner) but peer effects can occur at any time absent permanent shifts in earnings. Find dividend peer effects do not lead to changes in earnings.
- Other robustness checks: taxes, catering (Baker and Wurgler, 2004), TNIC definition of industry (Hoberg and Phillips, 2016), through repurchases rather than dividends, and alternative time horizons for peer influence. In all cases, inferences hold up.

Economic Channels Underlying Peer Influence

- Industrial organization channel for peer influence.
  - Strategic CEOs are predatory and exploit their peer firms' financial vulnerability.
  - Financially vulnerable firms are 4.3 p.p. more likely to increase dividend payments after their peers do.
- Behavioral channel for peer influence.
  - Overconfident CEOs (Malemendier and Tate, 2005) are 6 p.p. more likely to increase dividend payments when peer influence is high.
- No statistically significant change in dividend payments for firms motivated by reputation-building concerns or learning.

Do Investors Recognize Importance of Peer Influence?

- Investors react positively to announcements of dividend increases (Michaely et al., 1995). Positive reaction is rational response to surprise revelation of private information.
- Given that peer influence helps predict when a firm will increase its dividend, it follows that investors who enhance their dividend expectations model with peer influence will be less surprised by the announcement of a dividend increase.
- To evaluate whether investors account for peer influence, I integrate my peer effects model for predicting a dividend increase with a model of dividend announcement effects.

Do Investors Recognize Importance of Peer Influence?

Step 1. Estimate CARs for dividend increases

Step 2. Estimate the main dividend increase regression with and without peer influence, peer firm average, and peer firms' CARs. Calculate the difference between the two residuals. Can that residual predict abnormal returns? If negative and significant, that's evidence of investor anticipation.

	Estimated Average CAR
Announcement-induced abnormal returns	[-1, +1]
All dividend increases	0.70%
	(19.70)***
Cross-sectional estimates of surprise upon announcement	
Error term from baseline model	0.39%
	(4.85)***
Change in error term when peer factors are included	-0.15%
	(2.99)***
Number of observations	12,122

Conclusion

- Peer influence is a first-order determinant of dividend policy.
  - Accelerate changes by 1.5 quarters
  - Increase payments 16% more than they otherwise would
- Peer effects matter in increases but not decreases
- Implications for future research
  - Given firms rarely decrease dividends, what are the long-term distortions to efficient capital allocation or leverage given that peer-induced dividend changes alter cash distributions?
  - Given the changing nature of the CFOs role toward more intangible social skills, are social forces like peer influence becoming more pervasive in finance? And are there other important social forces influencing corporate policy (e.g., conformity to rules, trust, etc.)?