

Ownership, Investment and Governance: The Costs and Benefits of Dual Class Shares

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Global Corporate Governance Colloquia,
June 5-6, 2015

Objective of our paper...

- To further our understanding of the link between ownership structure, governance and the investment decision
 - ▶ Governance evolves as an endogenous shareholders' choice
 - ▶ Separation of cash flow rights and voting rights alleviates an under-investment problem
- Prior theoretical research concludes that dual-class share structure leads to **lower efficiency** in the market for corporate control
- Impact of separation of voting and dividend rights on a firm's investment decision has not been analyzed
- We analyze a firm facing a potential takeover threat from a rival firm with a manager-controlling shareholder
 - ▶ We develop our theory in a rational contracting environment with control rents.

Use of Voting Shares & Debt

- When a manager owns voting shares and
 - ▶ the firm issues new voting shares to finance a scale-expanding investment
 - ▶ The manager suffers dilution of his/her ownership position
- This increases the risk that the manager can lose control of the firm
 - ▶ Reduces his/her expected private benefits of control and expected wealth.
- **Debt** does not solve the **underinvestment** problem.
 - ▶ This is so because debt carries with it the risk of bankruptcy and the incumbent risks a loss of control from violating a covenant.
- As a consequence, the manager may forgo some positive NPV investments in order to protect his control rights.

Potential Benefits of Non-voting Shares

- Under-investment is costly for the existing shareholders and reduces future dividends.
- Non-voting shares allow a firm to raise investment funds
 - ▶ without diluting the manager's control rights, or
 - ▶ without issuing more debt which can require stricter covenants.
- Hence, non-voting shares help to **alleviate** the under-investment problem.
- Also, issuance of non-voting shares raise the **takeover premium on existing voting shares** conditional on a bid, since the total premium is now divided among a smaller group of shares with voting rights.

Potential Costs of Non-voting Shares

1 Dividend dilution

- ▶ All shares pay the same dividend per share
- ▶ But non-voting shares do not get potential takeover premiums
- ▶ Hence, the market price of voting shares $>$ the market price of non-voting shares
- ▶ Thus, a relatively larger number of non-voting shares must be issued to raise the same amount of investment funds.
- ▶ Hence, the per share dividend for existing shareholders (including the incumbent) is lower relative to issuing a smaller number of voting shares for the same total dollar of dividends.

2 Management entrenchment

- ▶ Private benefits plays a bigger role in the control contest
- ▶ It lowers probability of a takeover as lower “quality” managers can use their private benefits to thwart value enhancing takeover bids.

Main Intuition...

- The issuance of non-voting equity can be optimal
 - ▶ when the benefits of higher investment outweigh the costs of managerial entrenchment and significant dividend dilution
- We obtain conditions under which it is optimal for firms to issue non-voting stock for both outside shareholders and the incumbent
- Our model produces new empirical predictions regarding
 - ▶ the relationship between firm valuation, and the likelihood of dual-class recapitalization, which are functions of
 - ★ incumbent management quality
 - ★ management ownership
 - ★ management private benefits

Prior Literature

- Google Founders' IPO letter: "...In the transition to public ownership, we have set up a corporate structure that will make it harder for outside parties to take over or influence Google. This structure will also make it easier for our management team to follow the long term, innovative approach emphasized earlier. This structure, called a dual class voting structure...."
- Yet, a large part of the theoretical literature finds that dual-class structures have negative effects on shareholders' wealth.
 - ▶ Optimality of one vote-one share \Rightarrow Grossman & Hart (1988), Harris & Raviv (1988, 1989)
 - ▶ Why shareholders allow a dual-class recapitalization \Rightarrow Ruback (1988)
 - ▶ Issuance of dual-class shares in IPO's \Rightarrow Bebchuck and Zingales (2005)

Recent empirical study...

- Empirical research is mixed. It reports both positive and negative abnormal announcement date returns for dual-class re-capitalizations
- Masulis, Wang & Xei (JF 2009) use U.S. dual-class companies to examine how divergence between insider cash-flow and control rights affects the extraction of private benefits.
 - ▶ They find as the divergence in rights becomes larger
 - ★ Average acquisition announcement return falls
 - ★ Average CEO compensation level rises
- Interestingly, they find that
 - ▶ between 1995 and 2003, for the 410 acquisition made by U.S. dual-class firms, the 5-day CAR is +1.369% for the acquiring firm.

Our Firm

- A typical publicly traded firm
- Starts with one class of shares – the “commons.”
 - ▶ N common shares outstanding
 - ▶ Each common share has
 - ★ equal claim to cash flows
 - ★ equal voting rights.
 - ▶ All participants are risk-neutral
 - ▶ Discount rate is zero
 - ▶ All securities have prices equal to their expected payoffs
 - ▶ There are four players in our model
 - ★ The incumbent manager
 - ★ Existing outside shareholders
 - ★ Potential new investors
 - ★ Potential rival manager

The Incumbent...

- The incumbent is the one who
 - ▶ Searches for new investment opportunities and conducts an initial evaluation of potential investments.
 - ▶ Chooses investment projects to undertake
- The incumbent maximizes the firm's market value as well as his own private benefits of control
 - ▶ The incumbent's public quality, a_I , and investment decision, x determines a firm's value
 - ▶ The incumbent's ability to extract private benefits, b_I , and investment, x determines his private benefits
 - ★ Private benefits reduce the firm's market value dollar for dollar
- The objective function, $w_I(\cdot)$, a_I and b_I are public knowledge
- The incumbent owns
 - ▶ a large minority block – βN shares, where $\beta < 1/2$
 - ▶ is the largest shareholder, but is wealth constrained

Shareholders, Rival....

- A rival's abilities are unknown, the probability distribution of these abilities is publicly known
- Existing shareholders are the investors who own the firm.
- New investors buy securities that the firm issues to finance its new investments.
- Shareholders are able to influence broad corporate objectives through simple majority votes
 - ▶ Security types the firm can issue to raise fresh capital (choice of equity class)
 - ▶ Changes in control of the firm
- Each individual outside shareholder wants to maximize the value of his/her holdings.
- The rival offers to buy the firm, if he values the firm higher than the incumbent (public value plus value of the private benefits).

Investment Opportunity

- Our firm faces an new investment opportunity.
- The new project generates
 - ▶ public value for the shareholders ($NPV > 0$) and
 - ▶ private benefit that accrues to the firm's manager.
- No internal financing or debt financing is available; hence, the firm needs to issue new shares to fund the new project.
- Incumbent decides on a firm's new investment level, x
- The realized value of the project is “Investment + NPV_i + Noise” or $x + a_i P(x) + \varepsilon_x$
 - ▶ $P(x)$ is concave and differentiable with a unique maximum at \bar{x}
 - ▶ Manager-in-control
 - ★ Incumbent (I) or Potential rival manager (R)
 - ★ Productivity of managers vary: $a_i \in [0, 1]$ measures manager in control's ability to generate cash flows.

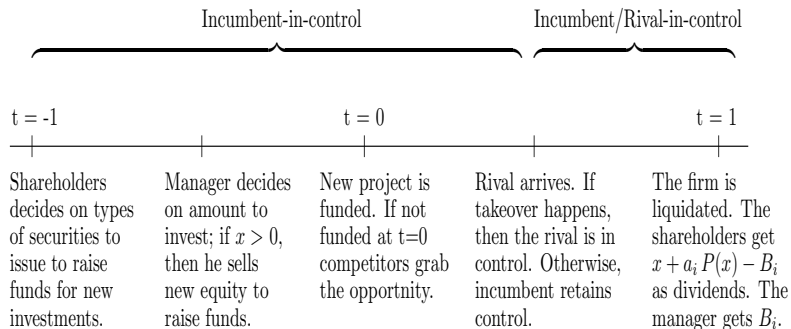
Private Benefits of Control

- The manager-in-control appropriates some private benefit of control.
- The realized value of the private benefit (B_i) is fraction (b_i) of the NPV of the project ($a_i P(x)$)
 - ▶ A higher level of investment produces higher private benefits for the manager-in-control.
 - ▶ $b_i \in [0, 1]$ measures the manager-in-control's ability to convert one unit of NPV into his private benefit
- Thus, the expected public value of the firm

$$\begin{aligned}
 FV_i &= \text{Level of new investment} + \text{NPV of investment under} \\
 &\quad \text{manager-in-control} - \text{Private benefits of manager-in-control} \\
 &= x + a_i P(x) - b_i a_i P(x) = x + (1 - b_i) a_i P(x)
 \end{aligned}$$

- Private benefits reduce the shareholders' value, dollar for dollar.

Temporal Evolution of the Model



Control Contest: If voting shares are issued..

- A change in control occurs when the rival can offer a higher per-share value to outside shareholders than the incumbent.
- If n^1 voting shares are issued to finance the investment, then the incumbent retains control if
 - ▶ The **public value per share** *plus* **private benefit per outside share** offered by the incumbent is **greater** than the **public value per share** *plus* **private benefit per outside share** offered by any potential rival

Control Contest: If non-voting shares are issued..

- A change in control occurs when the rival can offer a higher per-share value to the outside shareholders than the incumbent.
- If n^0 nonvoting shares are issued to finance the investment, then the incumbent retains control if
 - ▶ The **public value per share** *plus* **private benefit per outside voting share** offered by the incumbent is **greater** than the **public value per share** *plus* **private benefit per outside voting share** offered by any potential rival

Control Contest: Endogenous takeover bounds..

- We can solve for the minimum ability of any potential rival to extract private benefits (b_R), such that the incumbent retains control.
- For any given values of the public qualities of the incumbent and rival (a_I and a_R respectively) and private benefit parameter of incumbent (b_I),
 - ▶ if any potential rival's ability to extract private benefit, b_R is less than \underline{b}_R^j , then the **incumbent retains control**;
 - ▶ otherwise, potential rival gains control.

Decision Problem

- The incumbent manager's decision problem

$$\max_x \left[N \beta V_D^j(x) + \phi^j b_I P(x) \right].$$

- The existing shareholder's decision problem

$$\max_{j=0,1} V_1^j(\hat{x}^j).$$

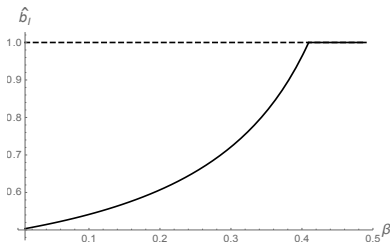
- Both the manager and the outside shareholders are assumed to be interested in maximizing their expected wealth.

Incumbent's Holdings and Full Investment

- When investments are financed by issuing voting shares and the incumbent does not own any equity in the firm (i.e., $\beta = 0$), then the incumbent invests in all available positive NPV projects.
 - ▶ Zero ownership \Rightarrow no dilution of incumbent's control rights if new voting shares are issued
 - ★ Hence, there is no incentive to under-invest.

Underinvestment...

When the incumbent manager is forced to use voting shares to fund all new investments and he has a strictly positive β so that new investment dilutes his voting power, then the incumbent manager forgoes some positive NPV projects if his ability to extract private benefits $b_I \geq \hat{b}_I$, where



As incumbent's ownership increases, likelihood of underinvestment decreases. For more than 39% ownership, incumbent will never underinvest.

Why an incumbent may underinvest?

- Managers with a relatively high ability to extract private benefits, $b_I \geq \frac{1}{2}$, may under-invest if forced to issue voting shares to fund the new projects.
- MAXIMIZE Manager's Expected Wealth = MAXIMIZE Expected Dividend + Expected Private Benefit
- Expected Private Benefit = Probability of Retaining Control \times Private Benefit of Control
- If b_I is large \Rightarrow the private benefit of control is large AND probability of retaining control decreases in the level of investment
- Level of Managerial Ownership
 - ▶ Zero ownership ($\beta = 0$) \Rightarrow No dilution in ownership \Rightarrow full investment
 - ▶ Incumbent's ownership rises ($\beta > 0$), which
 - ★ impact of ownership dilution increase leads to more underinvestment
 - ★ loss of dividends per share leads to less underinvestment

When do outsider shareholders like nonvoting shares?

- For a level of private benefit extraction by the incumbent and the optimal investment is not too large compared to the size of the existing firm, outside shareholders prefer the investment to be financed with nonvoting shares, if the loss due to underinvestment $>$ the expected entrenchment costs (loss of takeover gains).
- Cost of allowing the manager to issue lower priced non-voting shares
 - ▶ Lower per share dividend, since $n^0(x) \geq n^1(x) \Rightarrow$ dividend dilution
 - ▶ Low likelihood of control change, since the probability of retaining control after issuing zero-voting shares to fund the new investment is weakly $>$ the probability of retaining control after issuing voting shares to fund the new investment.
- Benefits to allowing the manager to issue non-voting shares
 - ▶ Higher investment in positive NPV projects
 - ▶ Higher takeover premiums, conditional on a takeover (for voting shares)
- Shareholders will voluntarily allow the incumbent to issue non-voting shares even if the under-investment is small because
 - ▶ The takeover premium conditional on a takeover is potentially large.

Control Inefficiencies are Real!

- The minimum public quality of the incumbent manager required for him to retain control of the firm is lower in firms financed with dual-class shares.

Conclusions

- If a firm, with positive NPV projects, requires equity financing to undertake new investments, then **separation of the vote and dividend claims** at times is **optimal**. Raising equity capital has two effects:
 - ① Firm value increases since positive NPV projects are funded
 - ② Proportion of voting shares owned by the manager decreases, increasing the likelihood that he loses control.
- A manager, who values control, finds it optimal to forgo some positive NPV projects.
 - ▶ Non-voting shares can alleviate this control related under-investment problem.
- Outside shareholders, at times, may find non-voting share issuance attractive, because
 - ▶ The benefits of more profitable investments and a higher expected takeover premium outweighs the costs of managerial entrenchment.
- Finally, our results generalize to **low voting shares** instead of zero-voting shares.