Ownership, Investment and Governance: The Costs and Benefits of Dual Class Shares (Banerjee and Masulis)

Discussant: Alon Raviv
Bar-Ilan University

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Contribution and ideas

- The authors suggest that dual-class shares can be a solution to agency conflicts rather than a result of agency conflicts.
- The paper analyzes the tradeoff between private benefits of control and the deadweights costs of dual shares.
- The authors derive conditions when the benefits from using non-voting shares outweigh its costs.

Strategic debt serivce

- The interaction between the two types of stockholders is somehow similar to the relationship between stockholders and bondholders in the case of **strategic debt service**.

    1 **Mella-Barral and Perraudin, JF- 1997,** analyze the efficiency implications of strategic debt service, showing that it can eliminate both direct bankruptcy costs and agency costs of debt.

    2 **Anderson and Sundaresan, RFS-1996,** expand the strategy space open to equityholders by introducing take-it-or- leave-it offers on debt service to the firm's creditors.

    3 **Bergman and Callen, JFE- 1991,** show that renegotiation of coupon payments may eliminate bankruptcy costs and can increase social welfare.

Pricing of capital structure with no frictions

- Asset value under the risk free measure follows a Geometric Brownian Motion:

$$dV_{C,t} = r \cdot V_{C,t} \cdot dt + \sigma \cdot V_{C,t} \cdot dW$$

  - r - the risk free rate.
  - σ - instantaneous volatility of assets.
  - dW - a standard Wiener process.

- The debt's payoff at maturity:

$$B_T = \min[V_T, F] = F - \max[F - V_T, 0]$$

  - F - the borrower's face value of debt.

- The present value of the corporation's debt:

$$B_t = e^{-r(T-t)} \cdot F_C - Put(V_t, F, \sigma, T - t, r)$$
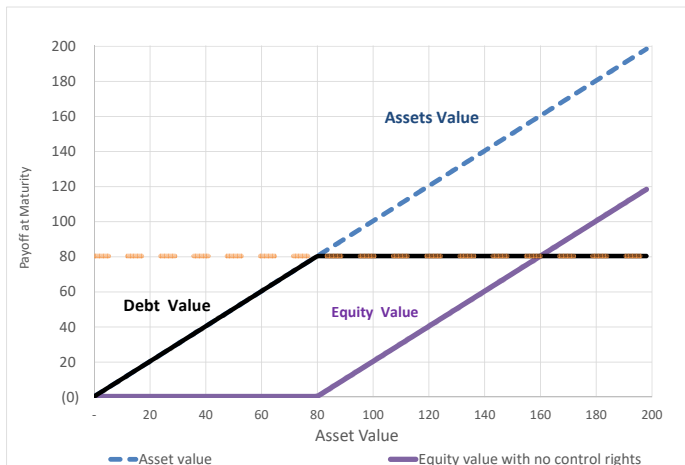
- The stockholder's payoff at debt maturity:

$$S_T = \max[V_T - F0]$$

- The present value of the corporation's equity:
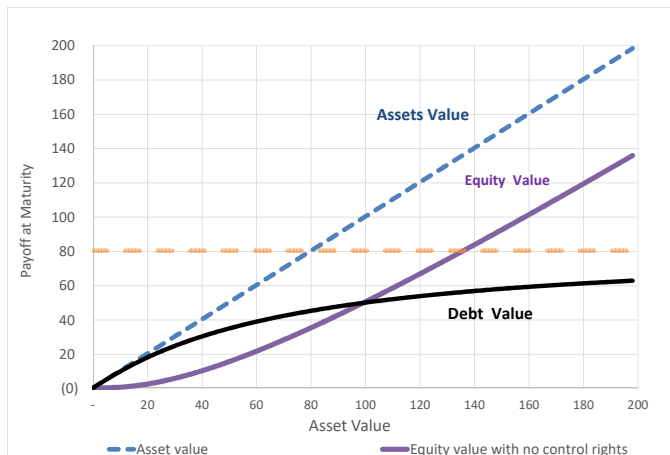
$$S_{C,t} = Call(V_t, F, \sigma, T - t, r).$$

Simple Capital structure with no frictions

- The base case parameters: the face value of debt equals 80. Time to maturity is 5y and the risk free rate equals 1%.

Simple Capital structure with no frictions - where debt maturity equals 5y

- In this example, volatility equals 20%.

Pricing Capital structure with private benefits of control

- The introduction of private benefits of control leads to deadweight loss in a proportion of α of the firm assets.

$$L_t = \alpha V_t$$

  - L_t - Loss due to private benefits of control.

- The stockholders' payoff due to private benefits:

$$B_{CR,T} = \min[(1-\alpha)V_T, F_{CR}] = F_{CR} - \max[F_{CR} - (1-\alpha)V_T, 0]$$

- The present value of the private benefits is:

$$B_{CR,t} = e^{-r(T-t)} \cdot F_{CR} - (1-\alpha)Put(V_t, F_{CR}/(1-\alpha), \sigma, T-t, r)$$

Pricing capital structure with private benefits of control (Cont'd)

- The equity payoff is now subordinated to both the original debt and to the payoff due to private benefits and it is affected by the deadweights at the size of α:

$$S_{CR,T} = \max\left[(1-\alpha)V_T - (F_{CR} + F_F), 0\right]$$

- The present value of the equity is:
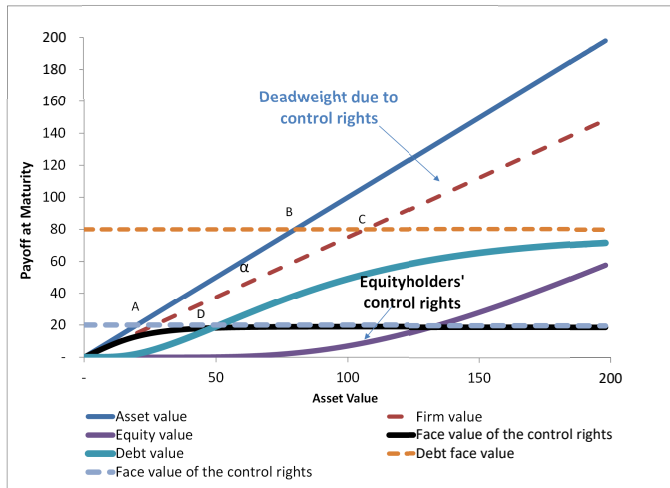
$$S_{CR,t} = (1-\alpha)\,Call(V_t, (F + F_{cr})/(1-\alpha), \sigma, T - t, r).$$

- The total present value of the stockholders is the sum of the equity position and the private benefits.

$$S_{total,t} = S_{CR,t} + B_{CR,t}.$$

Capital structure with private benefits of control

- For the base case, the face value of control rights equals 20 and the portion of the deadweights is 25%.
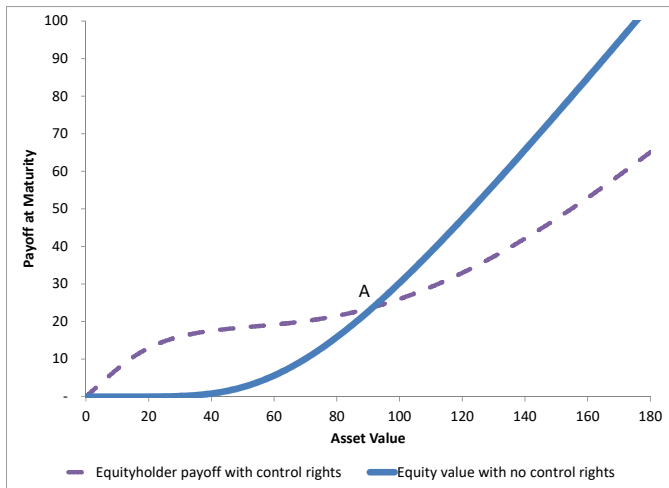
The stockholders' decision

- In a non cooperative game, a stockholder that tries to maximize the value of her holding has to choose between two alternatives:
  1. Holding the control rights with a deadweight costs that increase with asset value
  2. Giving up the control rights and avoiding the deadweight costs.
- The optimal decision is affected by both the **value of the firm assets** (or leverage) and **asset risk** (volatility).

The equityholders' position under the different capital structure
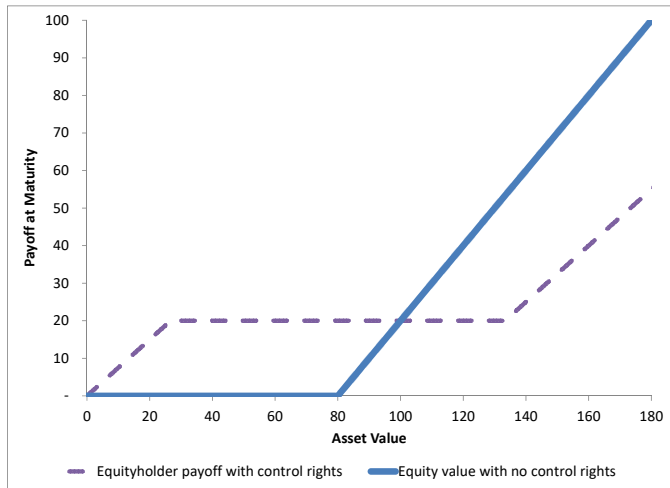
The equity value - the effect of asset value