MANAGERIAL ECONOMICS

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15. FINANCING, MANAGING AND INFORMATIONAL ASYMMETRIES

Adam Smith gone wrong ?

The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own.
Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it.
Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.
It is upon this account that joint stock companies for foreign trade have seldom been able to maintain the competition against private adventurers.

Agency and capital market

Classic Modigliani and Miller proposition: firm's financial structure is irrelevant to enterprise value of the firm.

Assumptions: in the absence of taxes, bankruptcy costs, agency costs, asymmetric information, and in an efficient market.

What happens if we drop those assumptions ?

Financial structure is deeply affected by info asymmetries

Financial structure has a (huge) impact on main actors.

What happens if we drop those assumptions ?

External investors (principal) can either be shareholders or creditors.

They lend money to managers (agent) with no perfect info relative e.g. to managers' behaviors, risk attitude...

A toy example

A manager/owner: manages and entirely owns the firm.

He can either go debt or equities.

First case: he goes equities

As soon as equities are on the mkt, he is no longer the only claimant to profit.

Ownership gets thus separated from control.

If he only owns a, say, 10% of the shares, his own decisions will only impact his income by a 10%

His effort will thus be somehow "limited", not optimal.

On the other hand, opportunistic behavior somehow gets an incentive: he spend firm's money in luxury hotels, super cars, bespoke suits...

That is because he bears the costs (in terms of lower profits) only up to a a 10% but enjoys all the benefits.

...and the smaller his share, the stronger opportunism hits!

Second case: he goes debt

As debtors are remunerated on a fixed basis (interests) and interests are not bound to profit...

...he remains the sole claimant to profit...

...thus no agency problems around and he would eventually bear any inefficient use of resources.

Second case: he goes debt

But: if the quota of the manager own resources invested in the firm is small and debt is big, he will have strong incentives for way too risky projects (potentially huge profits, potentially huge losses).

That is: he would totally appropriate possible gains but only partially bear the costs of failure.

For a good outcome: he would beef up the whole cake net of interests

For a bad outcome: firms goes bankrupt and creditors bear all the costs (role for limited liability)

S&L case.

Three main ideas I

First, managers, lenders, and shareholders may all have different interests and financial arrangements may affect how different those interests are and what decisions management will make.

Three main ideas II

Second, managers may be better informed than investors about the firm's prospects, so the financial decisions they make may affect investors' beliefs and therefore the price of the firm's shares.

Three main ideas III

Third, financial securities are not just claims to part of a firm's net receipts; they also give the security holder certain rights.

Jensen and Meckling

J&M single out a trade-off relative to firms decisions on its financial structure between:

- $\Rightarrow$ agency costs (deriving from managers potential opportunism)
- $\Rightarrow$ agency costs (deriving from debtors tendency to undertake too risky projects)

In addition:

- $\Rightarrow$ they show that (and how) financial decisions have an impact on firms' organization and investment decisions.

Agency Costs

- ⇒ Monitoring Costs: Expenses incurred by the principal to oversee the agent's actions (e.g., audits, performance reviews).
- ⇒ Bonding Costs: Costs incurred by the agent to reassure the principal they will act in the principal's best interest (e.g., contractual commitments, insurance).
- ⇒ Residual Loss: The loss incurred when agents' decisions do not fully align with the principal's goals, even after monitoring and bonding.

Ownership and Incentives

$\Rightarrow$ Jensen and Meckling highlight that ownership structure influences agency costs.

$\Rightarrow$ When managers have an ownership stake in the firm (e.g., through shares), their interests align more closely with those of shareholders, reducing agency problems.

$\Rightarrow$ However, as external ownership increases, conflicts may arise because external shareholders cannot directly control managerial behavior.

Capital Structure

The model also explores how the mix of debt and equity financing affects agency costs. For example:

- $\Rightarrow$ Debt creates a commitment to repay, which can reduce the free cash flow available to managers for personal agendas.
- $\Rightarrow$ High levels of debt, however, may increase the risk of financial distress.

Applications

The Jensen-Meckling model has profound implications in:

- $\Rightarrow$ Corporate Governance: Designing systems to mitigate agency problems.
- $\Rightarrow$ Incentive Structures: Creating compensation plans that align managers' goals with shareholders'.
- $\Rightarrow$ Optimal Capital Structure: Balancing debt and equity to minimize agency costs.

This model laid the foundation for much of modern corporate finance theory and continues to influence how firms approach governance and decision-making.

J&M Analitically

The Jensen and Meckling model introduces a mathematical framework to quantify agency costs and explore how they relate to ownership structure, capital structure, and firm behavior.

Let's go on and discuss a simplified explanation of its mathematical underpinnings!

Agency Costs and Ownership Structure

The model assumes that a firm?s total value is affected by agency costs that arise from conflicts of interest between owners and managers. Let:

$\Rightarrow$ V: Total value of the firm.

$\Rightarrow$ A: Agency costs, which reduce the firm's value.

The firm's value net of agency costs is:

$$V_{net} = V - A \tag{1}$$

Ownership and Agency Costs

If α represents the fraction of ownership held by the manager, agency costs, A decrease as α increases because the manager has more incentive to act in the firm's interest:

$$A = f(\alpha) \text{ where } \frac{dA}{d\alpha} < 0 \tag{2}$$

Manager's Utility Function

The manager (agent) derives utility from:

- $\Rightarrow$ Personal consumption of perquisites P (e.g., perks, misuse of firm resources, Lambos, luxury hotels).
- $\Rightarrow$ Financial returns from their ownership stake α.

Let:

- $\Rightarrow$ W_m be Manager's wealth (a combination of personal consumption and firm ownership).
- $\Rightarrow$ R be Return generated by the firm

The manager's utility is:

$$U_m = \alpha R - P + g(P) \tag{3}$$

where $g(P)$ represents the personal satisfaction (non-monetary benefit) from consuming perquisites.

Trade-off Between Perquisites and Firm Value

As P increases:

$\Rightarrow$ Firm value V decreases

$\Rightarrow$ Managerial utility U_m may initially increase but eventually diminishes due to diminishing marginal returns from $g(P)$.

Firm Value and Capital Structure

The model incorporates debt D and equity E financing. Debt can act as a disciplining mechanism for managers because it limits free cash flow.

Firm Value with Debt: the value of the firm is:

$$V = V_0 - \text{Agency Costs} - \text{Bankruptcy Costs} \tag{4}$$

Where V_0 is the value of the firm without agency and bankruptcy costs.

Optimization

The manager's problem is to maximize their utility while considering the firm's ownership structure and financing constraints:

$$max_{\alpha,P} \quad U_m = \alpha R - P + g(P) \tag{5}$$

subject to:

$$V_{net} = V - \alpha \tag{6}$$

and:

$$D + E = V \tag{7}$$

By solving this optimization problem, the model derives:

- $\Rightarrow$ The optimal ownership share α^*
- $\Rightarrow$ The optimal level of debt D^*
- $\Rightarrow$ The corresponding agency costs A^*

Key Insights from the Model I

- $\Rightarrow$ Increasing managerial ownership α reduces agency costs but may limit diversification for managers.
- $\Rightarrow$ Debt financing reduces agency costs by limiting free cash flow but introduces bankruptcy risks.
- $\Rightarrow$ Firms balance ownership and capital structure to minimize total costs and maximize firm value.

This mathematical framework provides the foundation for analyzing the trade-offs in corporate governance and capital structure decisions.

Key Insights from the Model II

Reconceptualizing the Firm

$\Rightarrow$ The firm is viewed as a nexus of contracts among various stakeholders (e.g., owners, managers, creditors).

$\Rightarrow$ The firm's boundaries, organizational structure, and governance mechanisms are determined by the need to minimize agency costs.

Optimal Ownership Structure

Reconceptualizing the Firm

$\Rightarrow$ Increasing managerial ownership (e.g., through stock options or equity compensation) aligns managers' incentives with shareholders, reducing agency costs.

$\Rightarrow$ However, excessive managerial ownership can lead to entrenchment (managers resist changes that could benefit the firm but harm their personal interests).

Key Insights from the Model III

Capital Structure and Debt Discipline

- ⇒ The model demonstrates how debt can act as a disciplining mechanism:
  - ⇒ It reduces free cash flow available for managers to misuse.
  - ⇒ The obligation to service debt imposes financial discipline.
- ⇒ However, high debt levels can lead to financial distress, introducing bankruptcy costs.
- ⇒ Firms must balance agency costs of equity (managerial opportunism) against the costs of debt (financial distress) to determine the optimal capital structure.

Key Insights from the Model III

Corporate Governance Mechanisms

$\Rightarrow$ The model underscores the importance of governance mechanisms to align interests and reduce agency costs:

$\Rightarrow$ Monitoring Mechanisms: Board oversight, audits, and external regulations.

$\Rightarrow$ Incentive Structures: Performance-based pay, stock options, and profit-sharing.

$\Rightarrow$ Market for Corporate Control: Threat of takeovers as a discipline for poorly performing managers.

Key Insights from the Model III

Specific applications

$\Rightarrow$ Small vs. Large Firms: Agency costs are generally lower in smaller firms where owners and managers often overlap but rise in larger, publicly traded firms.

$\Rightarrow$ Industry-Specific Capital Structures: Industries with predictable cash flows (e.g., utilities) can afford higher debt levels, while volatile industries (e.g., technology) rely more on equity.

Key Insights from the Model III

Behavioral considerations

⇒ Jensen and Meckling's work assumes rational actors, but subsequent studies have incorporated behavioral insights:

- ⇒ Overconfidence: Managers may overestimate their ability to generate returns, increasing risk-taking.
- ⇒ Short-termism: Misaligned incentives can lead to decisions that prioritize short-term profits over long-term value.