RIETI-CARF Conference

What Financing Mechanisms and Organizations of Business Entities Best Facilitate Innovation?

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Keynote Speech

"Risk Money and Corporate Growth - the Role of Financial Intermediation"

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1. ¨Macro-finance¨ Perspectives

Financial System and Economic Growth

- **Two opposing views**
  - **Joseph Schumpeter (1911)**
    - Development of a country's financial sector plays a vital role in economic growth.
  - **Joan Robinson（1952)**
    - Where enterprise leads，finance follows.
    - Financial development is anything but a sideshow to economic development.
- **Arguments against causality**
  - **Saving**
    - Both financial development and growth could be driven by the propensity of households in the economy to save.
    - Endogenous savings（in certain models of growth）affects the long-run growth rate of the economy; hence it is no surprise that growth and initial financial development are correlated.
  - **Predictor**
    - The stock market capitalizes the present value of growth opportunities，while financial institutions lend more if they think sectors will grow.
    - Financial development may simply be a leading indicator rather than a causal factor.

Economic role of financial markets and institutions

- **Reallocate capital to the highest value use (earn higher rate of return on capital)**
  - Identify productive investment opportunities
  - Reduce investment in unproductive assets
  - Mobilize savings
  - Improve risk taking
- **Reduce the firms' cost of raising money from outsiders**
  - Help a firm overcome problems of
    - **moral hazard: outsiders have less control over the borrower's actions**
    - **adverse selection: outsiders know less about what the borrower will do with the funds**
    - **transactions costs**
  - Financial development liberates firms from the drudgery of generating funds internally.

External Financing and Investment

Sample Industrial sectors	All Companies External dependence	All Companies Capital expenditures	Mature companies External dependence	Mature companies Capital expenditures	Young companies External dependence	Young companies Capital expenditures
Tobacco	-0.45	0.23	-0.38	0.24	-	-
Footwear	-0.08	0.25	-0.57	0.23	0.65	0.26
Apparel	0.03	0.31	-0.02	0.27	0.27	0.37
Iron and Steel	0.09	0.18	0.09	0.16	0.26	0.19
Motor Vehicle	0.39	0.32	0.11	0.33	0.76	0.32
Textile	0.40	0.25	0.14	0.24	0.66	0.26
Electric Machinery	0.77	0.38	0.23	0.29	1.22	0.46
Office and Computing	1.06	0.60	0.26	0.38	1.16	0.64
Drugs	1.49	0.44	0.03	0.32	2.06	0.47

(R. Rajan and L. Zingales (1998))

- External dependence = the fraction of capital expenditures not financed with cash flow from operations
- Cash flow from operations = funds from operations + decreases in inventories
  + decreases in receivables + and increases in payables※
- Capital expenditures = the ratio of capital expenditures to net property plant and equipment

※ This definition includes changes in the nonfinancial components of net working capital as part of funds from operations.

Financing for New Firms

- New firms depend more on external finance than established firms. Financial development has almost twice the economic effect on the growth of the number of new firms as it has on the growth of the average size of firms.

- This is an additional indirect channel through which finance influences growth, i.e., by disproportionately improving the prospects of young firms.

Comparison of Sources of External Financing

Country	External Financing as a Fraction of Total Financing: Global Vantage	External Financing as a Fraction of Total Financing: OECD[a] Data
United States	0.20	0.23
Japan	0.50	0.56
Germany		0.33
France		0.35
Italy		0.33
United Kingdom	0.36	0.49
Canada	0.30	0.42

(R. Rajan and L. Zingales (1995))

- The ratio of net external financing to the sum of cashflow from operations and net external financing.
- Excludes financial companies.
- Global Vantage database includes information only for publicly traded companies while OECD data is for all corporations.

- **For the United States, United Kingdom, and Canada, external financing is smaller than internal financing, with firms in the United States raising the least from external sources.**
- **Firms in Japan consistently raise more money externally than internally. This evidence is supported by data going back to 1972.**
- **Firms in Germany, France, and Italy raise substantially less from external sources than either firms in the United Kingdom or Canada.**
- **Again, there is no clear distinction between the Anglo-American economies and the others.**

External Financing by Debt vs Equity

	Composition of External Financing			
	Net Debt Issuance		Net Equity Issuance	
Country	Global Vantage	OECD Data	Global Vantage	OECD Data
United States	1.02	1.34	−0.02	−0.34
Japan	0.80	0.85	0.20	0.15
Germany		0.87		0.13
France		0.39		0.61
Italy		0.65		0.35
United Kingdom	0.55	0.72	0.45	0.28
Canada	0.62	0.72	0.38	0.28

(R. Rajan and L. Zingales (1995))

- Net debt financing is the sum of net short term debt issuances and long term debt issuances less long term debt reduction.
- Equity issuance includes the issue of both common and preferred stock and conversions of debt to equity. Net equity financing is the sum of equity issuance less equity reduction

- **For U.S. firms external finance has consisted entirely of debt. It exceeds 100%, because of the intense activity in the market for corporate control (leveraged buyouts) over this period.**
- **Japan and Germany are the second in using debt issuance rather than equity issuance, with roughly 85% debt and 15% equity.**
- **The highest figure (45%) of equity reliance for the United Kingdom is a result of a conscious emphasis on equity issuances rather than debt as a source of external financing.**

2. Micro-finance Perspectives

Framework of Traditional Corporate Finance

Asset Intensive Firm

- **economies of scale and economies of scope**
  - The first entrant in each industry can exploit the economies of scale and scope and gain a formidable advantage visà-vis new entrants.
- **highly vertically integrated**
  - The realm of transactions governed by power (authority) rather than by prices (market *versus* organization, Coase (1937)) tend to force companies to take direct control of their suppliers and distribution systems.
- **tight control over its employees**
  - Importance of capital as well as vertical integration (scarcity of market opportunities for skilled workers) tend to reduce the bargaining power of employees as a stakeholder of a firm.
- **owned by dispersed public investors**
  - The size and the asset intensity require more investment and more risk taking than are within the capacity of the management.
  - The control conferred by the ownership of crucial assets make ownership from outside feasible.

Firm as a nexus of explicit contracts

- **All these factors (stemming from asset-intensive firms) led the "nexus of contract" view of a firm to drive the highly elaborate refinements of the main-stream corporate finance.**

- **Implications for capital structure (issues related to financing choices)**
  - **additivity of financial claims**
    - If the firm is a simple nexus of explicit contracts, the firm does not exist as a separate entity but just as a shorthand notation for this set of contracts.
    - Hence, the value of the firm is the sum of the value of all financial claims outstanding.
  - **irrelevance of financing choices (Modigliani and Miller (1958))**
    - The total payoff of the firm is well defined (thanks to the clear-cut boundary of a firm) and not affected by financing choices, and given the total payoff the total value of the firm is determined independent of capital structure.
  - **costs of financial distress (cost associated with liquidating a firm)**
    - If the value of a firm is simply the sum of its parts, then the prospect of a piecemeal liquidation cannot affect its overall value. (Modigliani-Miller)
    - If the firm is a nexus of contracts, it is costly to renegotiate the contracts that belong to the nexus. The nexus saves transaction costs, and thus its dissolution forces costly renegotiations. (Fama (1990))
    - The deadweight loss in renegotiation may not be of a significant magnitude in this perspective.

Implications for Corporate Governance

- **Corporate Governance (= the ways in which suppliers of finance to corporation assures themselves of getting a return on their investment (Shleifer and Vishney (1997)))**
  - **'market economy' paradigm**
    - The market allocates all resources efficiently without the intervention of any authority.
  - **Coase (1937)**
    - Using the market has its costs, and firms alleviate these costs by substituting the price mechanism with the exercise of authority.
  - **Corporate governance is the study of how this authority is allocated and exercised.**

- **Shareholders supremacy**
  - If we accept that contracts specify all the future payoff-relevant contingencies for everybody but the shareholders (i.e., residual claim = equity), then the allocation of decision rights would not be a matter of contention. All the other members of the nexus would be indifferent to the choice made by equity holders because they are contractually protected against any negative consequence.
  - Because any change in total value can be measured by changes in the value of the residual contract, the impact of decisions on stock prices can be used as a way to evaluate the social consequences of decisions, such as corporate investments, mergers, and so on.
  - Thus, in the simple nexus of contract world, the maximization of a firm's value corresponded to the maximization of shareholders' value. Consequently, the traditional precepts of corporate governance were all aimed at empowering shareholders by reducing the cost of collective action.

- **Very unequivocal policy implications**
  - Justifies shareholders' wealth maximization.
  - Eliminates the possibility of any inefficiency.
  - Capital structure choices are by and large irrelevant.
  - Any government intervention is bound to make things worse.

The Agency Problem

- **Although de jure equity is the only residual contract, de facto a firm's decisions influence the payoff of many other members of the nexus, sometimes even to a greater extent than that of equity holders.**

- **This, together with the separation between ownership and control, made the agency problem between top managers and shareholders the problem.**
  - Agency costs = costs due to conflicts of interests

- **Both capital structure and corporate governance became singly focused on this dimension. The objective became to maximize the protection of outside investors, and the means was by reducing or removing all the obstacles to shareholders' control.**
  - Transparency
  - accountability of directors
  - contestability of corporate control
  - managerial compensation aligned with shareholder wealth maximization

Moral hazard and asset substitution

- **Limited liability (investors are not personally responsible for corporate liability)**
- **Equity is a call option on the firm, having a strike price equal to the face value of the outstanding debt.**
- **Agency cost of debt-financing**
  - If an investment yields large returns, equityholders capture most of the gain. If, however, the investment fails, because of limited liability, debtholders bear the consequences.
  - As a result, equityholders benefit from "going for broke," i.e., investing in very risky projects, even if they are value-decreasing, since the loss in value of the equity from the poor investment can be more than offset by the gain in equity value captured at the expense of debtholders (asset substitution).
  - One would expect bond contracts to include features that attempt to prevent asset substitution, such as interest coverage requirements, prohibitions against investments in new, unrelated lines of business, etc.
- **Implication for capital structure**
  - Industries in which the opportunities for asset substitution are more limited (i.e., with few growth opportunities) will have higher debt levels, ceteris paribus.
    - Regulated public utilities, banks, and firms in mature industries
  - Firms with Large cash inflows without good investment prospects create the resources to consume perquisites, build empires, overpay subordinates, etc. Increasing debt reduces the amount of "free cash" and increases the manager's fractional ownership of the residual claim.
    - Jensen claims that examples are steel, chemicals, brewing, tobacco, television and radio broadcasting, and wood and paper products.

The Growth Options

- **High cost of equity finance (Myers (1977) and Myers and Majluf (1984))**
  - **The structure of the existing assets and liabilities impedes the efficient exploitation of growth opportunities, when these need to be financed with external equity.**
  - **Informational asymmetries between insiders and outsiders on the value of the assets are responsible for the friction.**
    - If a new project requires equity financing and the manager has private information that makes him believe the market is undervaluing the assets in place, he will prefer passing up the valuable growth option rather than diluting the value of the existing shareholders.
      - Underpricing so severe that new shareholders capture more than the NPV of the new project, resulting in a net loss to existing shareholders. In this case the project will be rejected even if its NPV is positive.
    - This underinvestment can be avoided if the firm can finance the new project by internal funds and/or debt, which involve no underpricing or the underpricing is not as severe (i.e., risky debt).

Incomplete Contracts and Property Rights

- **Verifiability and Incomplete Contracts (Grossman and Hart (1986), Hart and Moore (1990))**
  - **Contracts are necessarily incomplete; there is a need to allocate the right to decide in the events not specified by the initial contract (residual right).**
  - **This decision right is called the ownership of an asset.**

- **Property Rights**
  - **It affects the distribution of the ex post surplus created by an enterprise and, thus, the incentives to generate this surplus.**
    - For example, by changing the allocation of ownership, a merger changes these incentives in a way that no contract could.
    - What makes a difference is how ownership is allocated. Consistent with this view, the firm is defined as a collection of assets that are jointly owned.
  - **Another appealing feature of their definition of the firm is that it corresponds very closely with the legal definition.**

  - **A potential shortcoming is the identification of control with ownership, which Hart and Moore (1990) further specialize in the right to withdraw the asset.**
    - As Kay (1996) puts it very effectively: "if we asked a visitor from another planet to guess who were the owners of a firm [on the basis of this definition] by observing behaviour rather than by reading text books in law or economics, there can be little doubt that he would point to the company's senior managers." Not surprisingly this line of research has found it extremely difficult to deal with the separation between ownership and control.

Implications for Capital Structure

- **Strong Theory of Debt** (Aghion and Bolton (1992), Bolton and Scharfstein (1990), Hart and Moore (1994))
  - When the initial contract cannot achieve coincidence of objectives between the entrepreneur and the agent, the contingent control allocation induced by standard debt financing achieves efficiency.
  - Identify both ownership and control with the right to withdraw the asset

- **Theory of Equity** (Rajan and Zingales (1998))
  - They identify the separate role of control in the regulation of access to the asset itself. This can be a valuable instrument if the asset requires specific investments by the employees. One can then distinguish between the role played by ownership, which confers the right to withdraw a resource after specific investments have been made, from that of control, which regulates the access to the asset before specific investments are made.

The New Firm and New Corporate Finance

The New Firm

- **New firms are**
  - **Not asset-intensive**
    - Since physical assets, which used to be the major source of rents, have become less unique and are not commanding large rents anymore.
    - Improvements in capital markets made it easier to finance expensive assets.
    - Drop in communication costs reduced the importance of expensive distribution channels, which favors the access to the market of newly formed companies.
  - **Human-capital-intensive**
    - Firms with few physical assets and a lot of human capital
      - consultant firms
      - technology firms whose main assets are the key employees
  - **Non vertically integrated**
    - Large conglomerates have been broken up, and their units have been spun off as stand-alone companies.
    - Vertically integrated manufacturers have relinquished direct control of their suppliers and moved toward looser forms of collaboration.
    - The rising of competitors against which to benchmark performance exposed the real costs of cross-subsidies, putting pressure on firms to break up.
  - **Less Organizational pyramid**
    - The exercise of authority by the headquarters is severely limited by the ability of employees to quit, taking with them their human capital or part of the firm.

Growth Option by New Firms or Existing Firms?

- Entrepreneurship is the process by which new firms are created, and they are generally created to exploit new growth opportunities.
- But not every new endeavor necessitates a new firm. In fact, existing firms exploit many new opportunities because they generally have access to a much better pool of resources.
- Thus, new firms are created to exploit growth options that existing firms cannot or do not want to exploit. But what are these options?

Issues to Solve (Zingales 2000)

- **The defining characteristic of a firm is that it substitutes authority for the price mechanism in determining how decisions are made (Coase (1937)). The fundamental question a theory of the firm should address, then, is how an organization succeeds in acquiring power that differs from "ordinary market contracting between any two people" (Alchian and Demsetz (1972, 777)).**
  - For traditional firms the **residual rights of control over the assets** attributes to the owner a power that he does not have in ordinary market contracting.

- **Must explain how power is acquired and allocated in human capital-intensive firms.**
  - How a third party can have control over human capital in a world where labor has been liberated not only from slavery but also from the modern form of indenture represented by the uniqueness of the assets that labor specialized to.
  - In other words, **what is the power of a shareholder and their role in human capital-intensive firms?**

- **Must explain how this power is maintained and enhanced and how it is lost.**
  - An answer to this question can explain **what the factors are that underlie a firm's ability to grow or its failure to do so, even in the face of valuable growth opportunities**.
  - It will also be a critical step toward an **understanding of the costs of financial distress**.

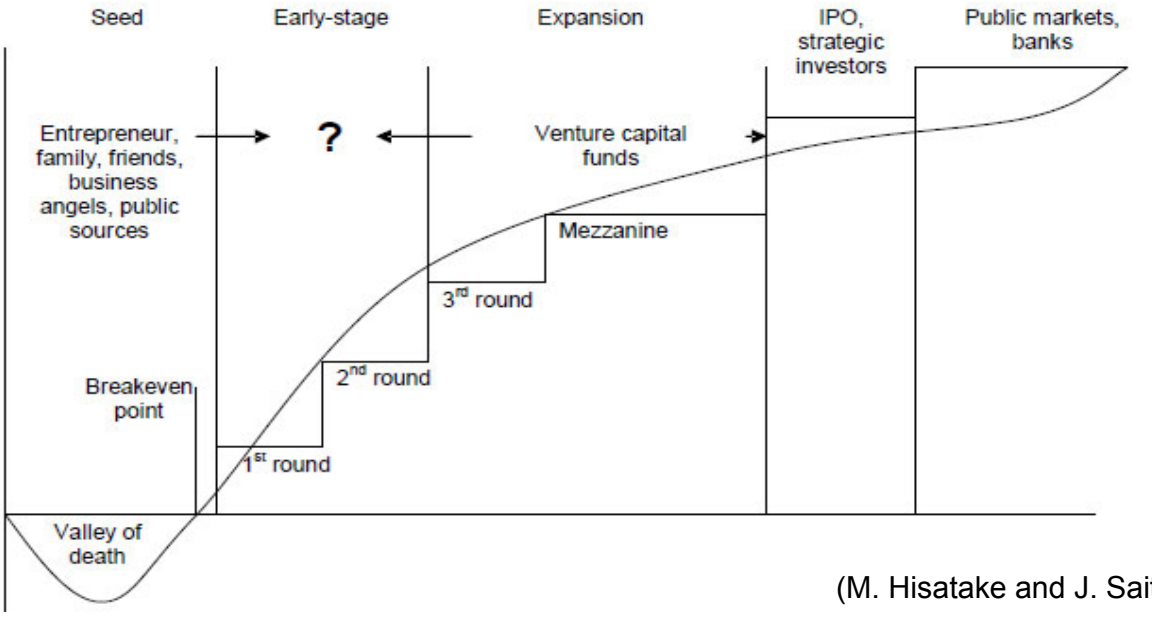
- **Must explain how this authority-based system operates in a way different from ordinary market contracting.**
  - **An answer to this question enable us to understand theoretically the effects of mergers and spin-offs.**
  - **It would bring new life to the debate on the costs and benefits of corporate diversification.**
  - **It would enable us to derive some policy rules on how a firm ought to be governed.**
    - For human-capital-intensive firms with contracts being highly incomplete, the primary goal of a corporate governance system should be **to protect the integrity of the firm**.
- **Must explain how the surplus generated by the firm is allocated among its members.**
  - A reasonable approach to valuation (for new firms) would be to discount the total value added generated by the firm.
  - To move from here to the equity value, however, we need a theory of how the surplus is divided among different claimholders, be they financial claimholders (equity holders and debt holders) or nonfinancial ones, such as employees, key customers, and suppliers.
  - Understanding the internal allocation of surplus, thus, is a necessary step toward a **theory of valuation of the new firm**.

- **Stockholder wealth maximization?**
  - There are other residual claimants besides equity holders who may need to be protected.
  - It then becomes unclear whether control should reside in the hands of shareholders, because the pursuit of shareholders' value maximization may lead to inefficient actions, such as the breach of valuable implicit contracts (Shleifer and Summers (1988)).
  - This makes it impossible to identify the value created by a firm with the payoff accruing to equity holders.
  - As a result, stock price changes are not reliable indicators of welfare changes even when the market is perfectly efficient.

Strong Focus of this Conference

Stage of equity financing

Figure 1. Stages of equity financing



(M. Hisatake and J. Saito)

- **Growth stage of the firm affects the appropriate mode of finance.**
- **It is true innovative entities seek IPO or being acquired by large companies.**
- **But, the most important innovation are usually made before IPO.**

Too much emphasis on large companies

- Too much emphasis has been placed on large, publicly traded corporations with dispersed investors who are unable to coordinate.
- They are the ones where internal funds are generally abundant and external financing (especially with equity) is a rare event.
- Thus, most of the empirical effort has been dedicated where we expect finance to matter the least. This explains the great influence the Modigliani and Miller (1958) theorem played, not just as a theoretical starting point but also as a positive description of the world.
- The emphasis on large companies has led us to ignore the rest of the universe: the young and small firms, who do not have access to public markets.

Making of Financial Market

- Financial scheme, based on legal and accounting scheme, is the precondition of financing projects and opportunities to invest. Without the effective financial scheme, neither finance nor enterprise comes.
- Financial scheme is affected considerably by institutional environment of each economy.
- In the complete contract world, enforceability or effectiveness is assured by the legal system.
- But, in the incomplete contract world, contract, organization, law, and institutions, are affecting each other, usually complementarily.
- Importance of making of financial market.
  - Certain limitation of control rights already exists such as share with restricted voting rights, and special class stock. But timing of their introduction differs among nations.
  - Another example is a transfer of control right: level and nature of activities of MBO varies nation by nation.
  - Arrangement for partnership is one of the most important agenda for this conference.

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