Investment and Corporate Governance: Evidence from Japan in the 1990s

Arikawa, Yasuhiro (Yamagata University and RIETI)
Miyajima, Hideaki (Waseda University and RIETI)
Saito, Nao (Waseda University)

Comparative Corporate Governance: Changing Profiles of National Diversity
Corporate Governance in Perspective: Diversity or Convergence
January 8-10, 2003, Tokyo

1. Introduction

Relation between leverage and investment

- MM theory
- Agency theory

Increase in cross-sectional variance in leverage among Japanese firms in the 1990s(Figure 1)

Figure 1 Debt-Asset Ratio

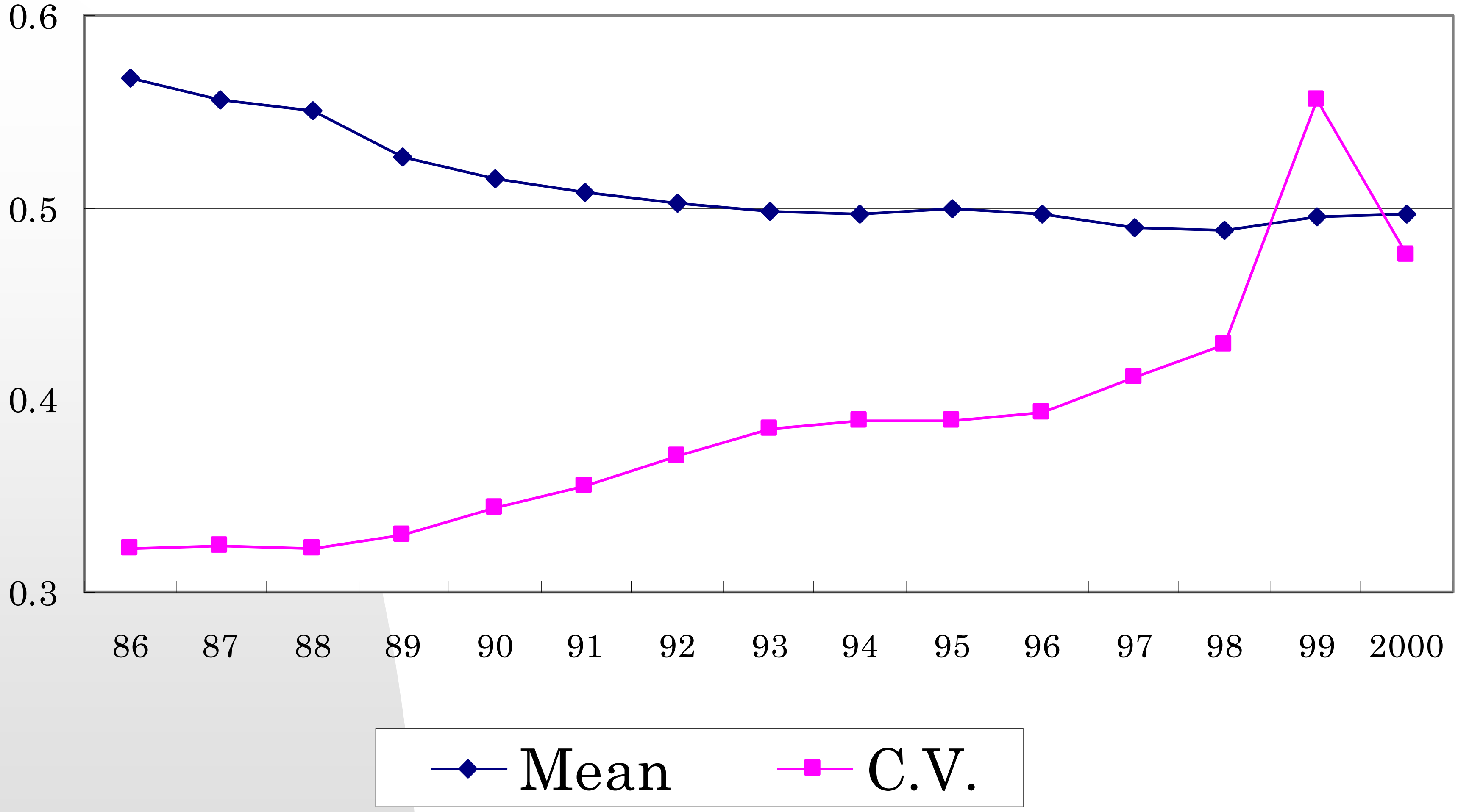
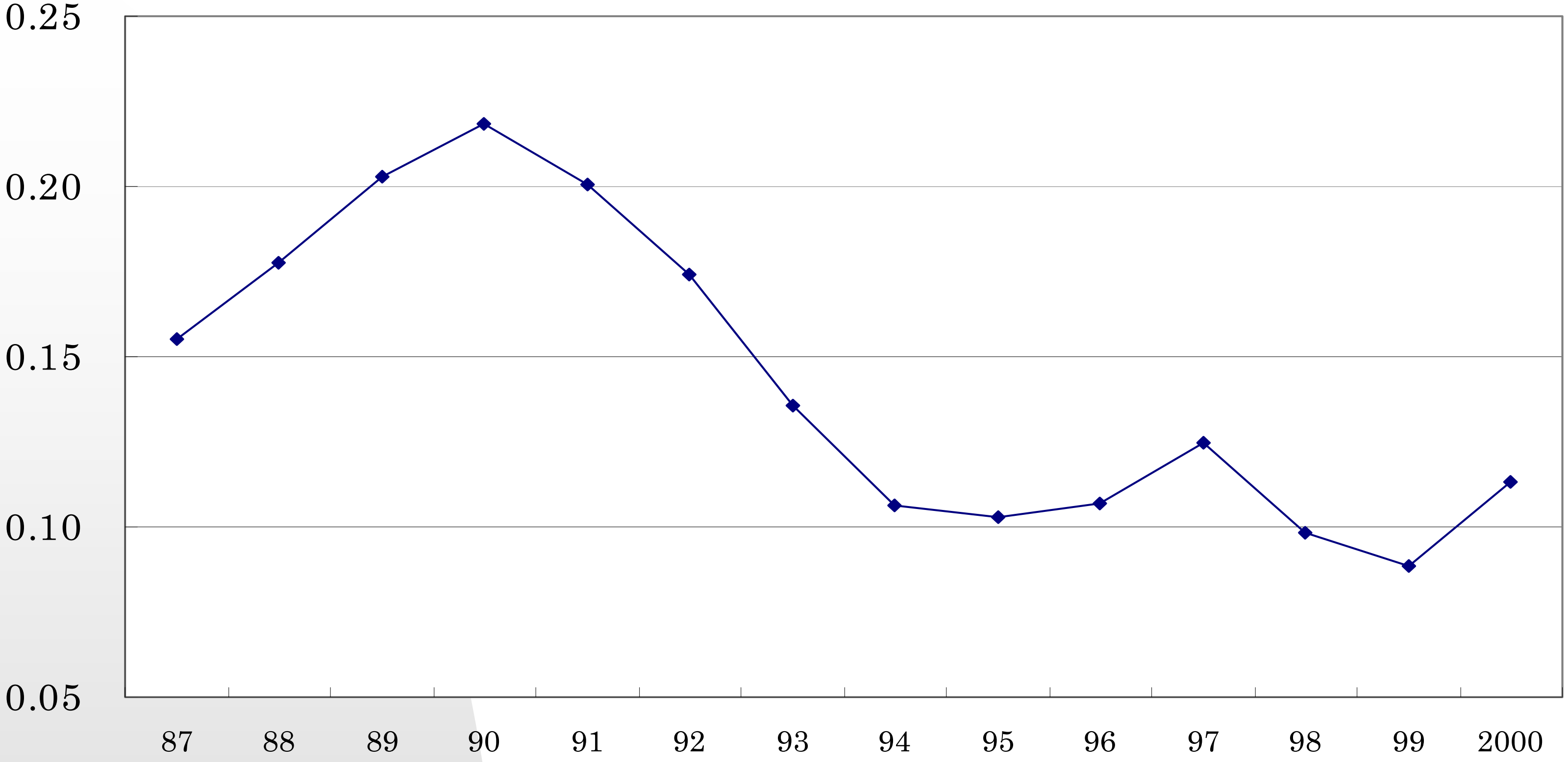


Figure 2 Investment Ratio



Task of this paper

1) Does high leverage cause under-investment or restrict over-investment?

2) How do main bank, institutional investors, and foreign investors influence the relation between leverage and investment?

2. Theoretical Background

The role of leverage on investment:

- Creation of under-investment
  a) Debt overhang
  b) Asset substitution
  c) Bankruptcy costs

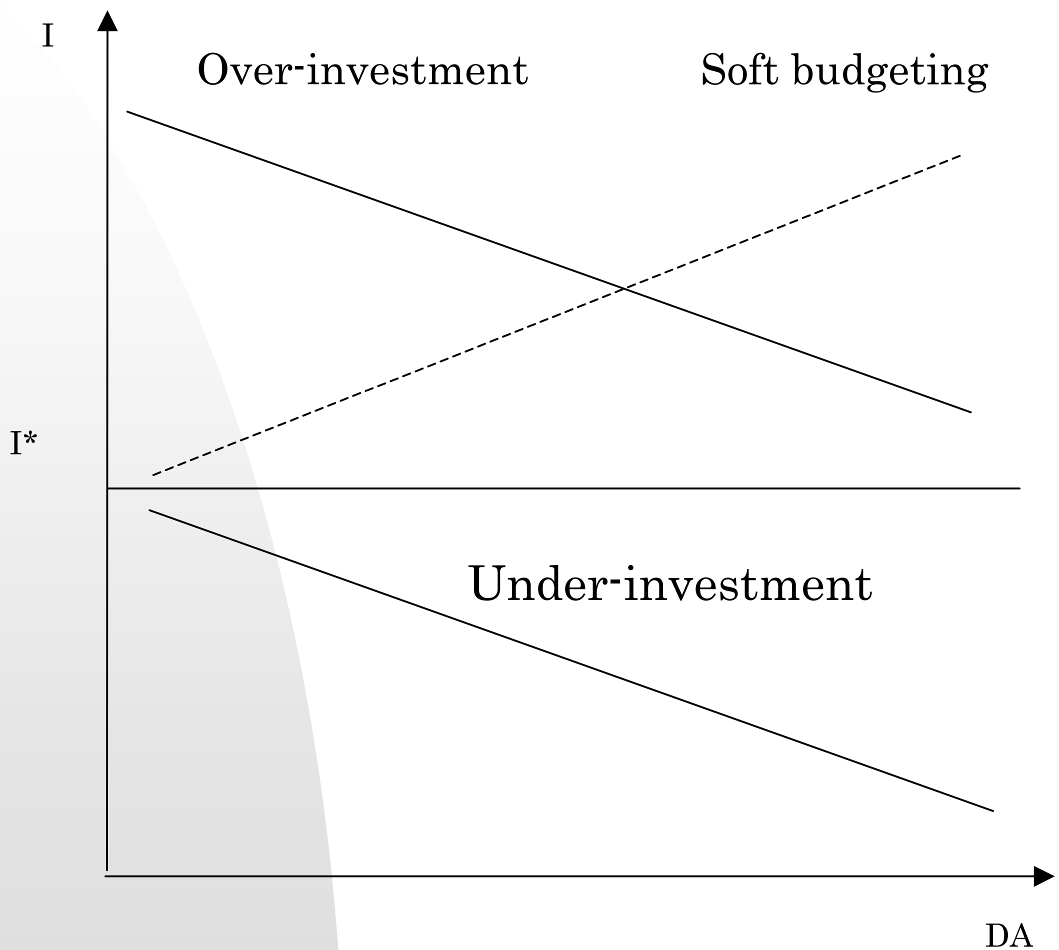
- Restriction of over-investment
  free cash flow problem

Interpretation of the negative relation between leverage and investment

If we observe this relation among

- Firms with high growth opportunities
  ⇒ under-investment
- Firms with low growth opportunities
  ⇒restriction of over-investment

Figure 3　Discipline of Debt vs. Constraint of Debt



The Role of Main bank and Institutional Investors

- Main bank:
  - Mitigating agency problems between manager and investors
  - Soft budget problem

- Institutional Investor:
  - Mitigating agency problems between manager and investors

3. Models and Variables

$$I_t = F\,(Q_{t-1},\ CF_t,\ DA_{t-1},\ DA_{t-1} \times G)$$
$$I_t = F\,(Q_{t-1},\ CF_t,\ DA_{t-1},\ DA_{t-1} \times Gov,\ Gov)$$

I Investment

Q Tobin's Q

CF Cash Flow

DA Leverage

G Variables Which Represent Firm Characteristics

Gov Governance Variables:

- $FRGN$ Percentage Held by Foreign Investors
  MBD Main Bank Dummy

Sample Period and Sample

- Sample period: 1993 to 2000
    - pre-financial crisis (1993-1996)
    - post-financial crisis (1997-2000)

- Sample:

1300 firms listed on TSE

4. Estimation Result

Base Regression（Table4）

(1) Firm years from 1993 to 2000

Sample	*Q*	*CF*	*DA*
Manufacturing	＋	＋	－
Non-monufaturing	＋	＋	

(2) Firm years from 1993 to 1996.

Sample	*Q*	*CF*	*DA*
Manufacturing	＋		－
Non-monufaturing	＋		＋
Const.and real estate		＋	＋

(3) Firm years from 1997 to 2000.

Sample	*Q*	*CF*	*DA*
Manufacturing	＋	＋	－
Non-monufaturing	＋		－
Const. and real estate			－

- Result:

① Negative relation between leverage and investment in manufacturing, much stronger after financial crisis in 1997.

② Positive relation between leverage and investment in non-manufacturing.

HQ Firms and LQ firms（Table 5）

Estimation Period :　1993 to 2000.

Sample	*Q*	*CF*	*DA*	*DA*HQ*	*DA*LQ*
Manufacturing	+	+	−		
Non-manufacturing		+	−	+	+
Const. and Real estate		+	−		+

Manufacturing Sectors :

Period	*Q*	*CF*	*DA*	*DA*HQ*	*DA*LQ*
1993-96	+	+	−		
1996-2000		+		−	−

①Non-manufacturing sector: positive relation between leverage and investment

②Manufacturing sector: No difference between HQ and LQ firms

The Effect of Governance Structure（Table 6）

(1) HQ Firms

Period	*Q*	*CF*	*DA*	*DA*FRGN*	*DA*MBD*
1993-2000	+	+			
1997-2000		+	−	+	+

Result

① Foreign investors and main bank mitigate the negative relation between leverage and investment since 1997.

② Both Foreign investors and main bank could reduce agency problems in the firms with high growth opportunities.

The Effect of Governance Structure（Continued）

(2) LQ Firms (Table 7)

Period	Q	CF	DA	$DA*FRGN$	$DA*MBD$
1993-2000		+	−	+	−
1997-2000			−	+	−

Result :

① Foreign investors might substitute for the role of leverage.

② Main bank intensifies the negative relationship between leverage and investment, and it was getting strong since the financial crisis in 1997.

The Effect difference by the performance of Main bank（Table 9）

GMB dummy: PBR of main bank is more than median

BMB dummy: PBR of main bank is less than median (see Table 8)

Period	*Q*	*CF*	*DA*	*DA*GMB*	*DA*BMB*
1997-2000		＋	－	＋	＋
1997-2000		＋	－		－

Result :

① HQ firms: MB's performance does not matter.

② LQ firms: MB's bad performance intensifies the negative relation between leverage and investments

Key Results(1)

- Investments of firms in manufacturing sector is negatively related to leverage.

- Investments of firms in non-manufacturing sector is positively related to leverage after the collapse of the bubble economy (1993 to 1996).

Key Results(2)

In manufacturing sector, leverage causes

- Under-investment for firms with high growth opportunities
- Restriction of over-investment for firms with low growth opportunities.

Key Results(3)

- Firms with high growth opportunities：
  Foreign investors and main bank mitigate the negative effect of leverage.

- Firms with low growth opportunities：
  Foreign investors mitigate the negative effect, whereas main bank intensifies the negative effect of leverage.

Key Results(4)

- Firms with high growth opportunities：
  Bank performance does not matter.

- Firms with low growth opportunities:
  Bank with poor performance intensifies the negative relation between leverage and investment.