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# How Are Loans by Their Main Bank Priced? Bank Effects, Information and Non-price Terms of Contract

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February 16, 2006

RIETI Policy Symposium

*Japan's Financial System:*

*Revisiting the Relationship between Corporations and  
Financial Institutions*

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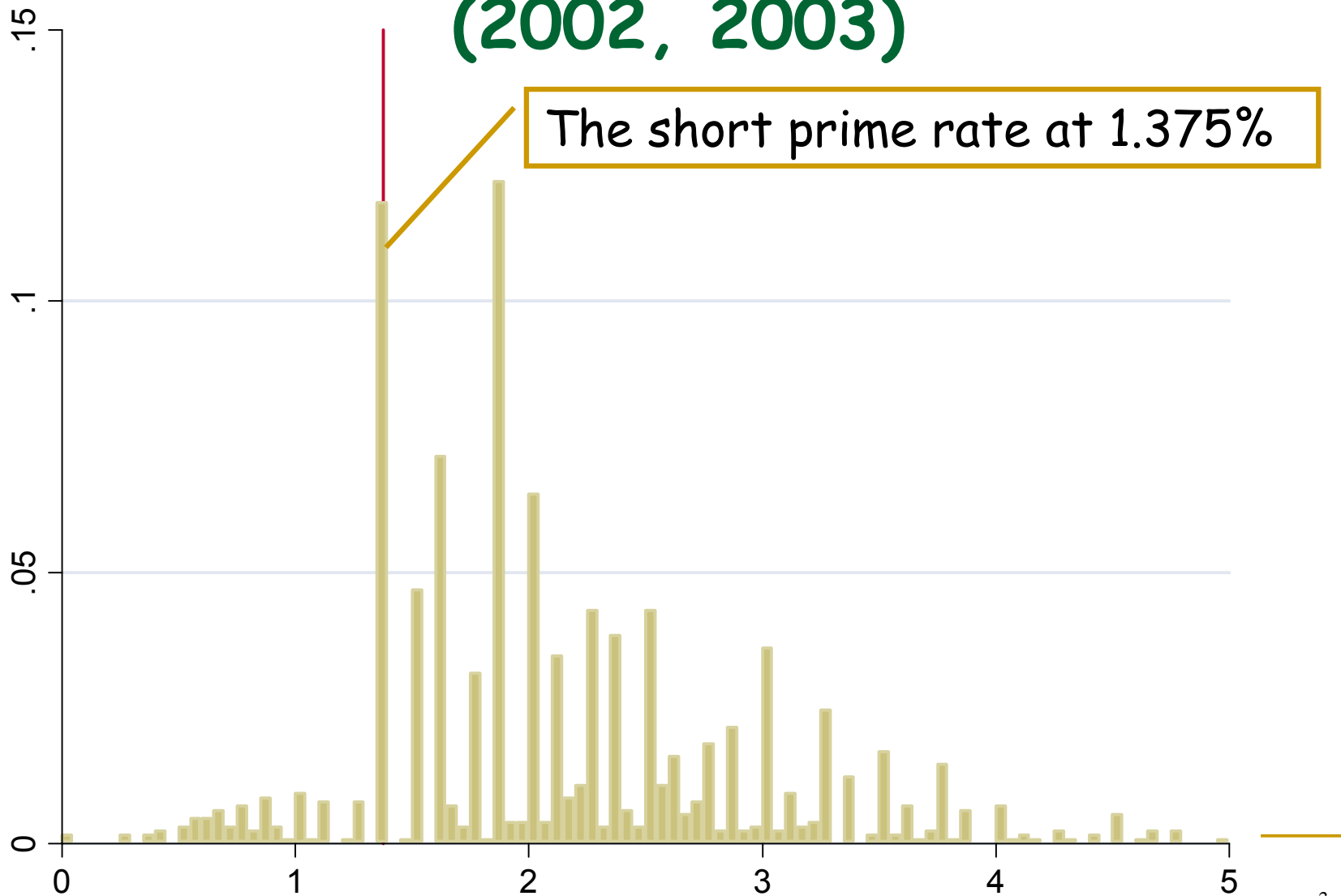
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# What Need to Be Answered?

What factors does a main bank reflect on the pricing of its loans to small and medium enterprises?

Especially, we are interested in whether a bank discount an interest rate on a loan to a firm that is either **willing to pledge a collateral** to the bank or willing to **obtain a public guarantee**.

# The Distribution of the Short Rate (2002, 2003)



# Possible Determinants of the Main Bank's Lending Rate

## *The Borrower Risk*

### *The Lender - Borrower Asymmetric Information*

- ✓ The borrower's disclosure to the lender
- ✓ The length of lender-borrower relationship
- ✓ The borrower's financial health (leverage)

### *Non-price contract terms*

- ✓ Physical and personal collateralization and a public guarantee

### *Bank financial health*

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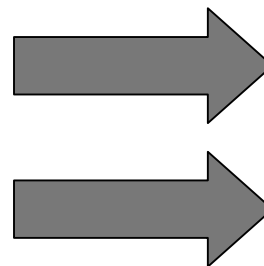
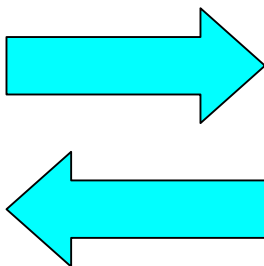
# How Does a Bank Determine Terms of Contract?

A bank can tighten terms of lending contract with a risky firm not only by raising the lending rate but also by **requesting a loan to be secured either by a private collateral or by a public guarantee.**

# Is a Borrower of a Secured Loan *Safe* or *Risky*?

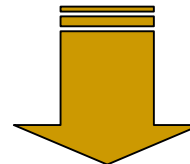
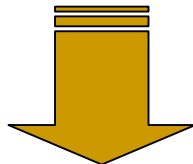
A firm **pledges** to secure a loan at its will

A bank **requests** a risky firm to secure a loan



A bank **lowers** the lending rate in return

A bank **raises** the rate on a loan to a risky firm



A bank is **pricing a guarantee** on a loan

A bank is **pricing a risky firm**

# How Do We Distinguish a Bank's Pricing of a Guarantee from Its Pricing of a Risky Firm?

We use the following facts when estimating a bank's pricing of a voluntarily pledged collateral and a voluntarily obtained public guarantee.

- ✓ A firm that **owns plenty of collateralizable assets** (land, structures, etc) has an incentive to offer a collateral in order to obtain a cheap loan in return.
- ✓ A firm **eligible to apply to a public guarantee** (a small firm defined by the SMA) volunteers to obtain a guarantee in order to enjoy a cheap loan in return.

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# Constructing the Data: Matching a Firm with its Main Bank

A borrower and its main bank is matched through the firm's report of its main bank.

- The quantitative and qualitative information on a firm, the information on the firm's relationship with its lender bank, and the information on the lender bank are all available, which allows us to conduct the comprehensive examination of the main bank's pricing of SME lending.



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# Data

The matched bank-firm data are constructed

## The Firm Data

### *Qualitative Data*

2002 and 2003 rounds of the “Survey on Corporate Financial Environments”, the 2001 TSR Data on the Firm Information

### *Financial Data*

The TSR Financial Data (FY 2001 and FY 2002)

## The Bank Data

Financial statements and relevant data of domestically licensed banks, shinkin banks and Norinchukin Bank (FY 2001 and FY 2002)

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# Sample Selection

Firms selected into our sample are those that

- ✓ Employ **less than 500 persons**.

Important to note that **some such firms are not eligible for public credit guarantees**.

- ✓ Report that their main bank is either a private bank licensed under the Banking Act, a shinkin bank or Norinchukin Bank.

Firms whose main bank is either a governmental financial institution or a cooperative are dropped.

# Determinants of the Lending Rate Other Than Collateralization and a Public Guarantee

## *Bank side factors*

- ✓ The book based capital to (total) asset ratio
- ✓ Whether the bank is allowed to operate internationally or not.
- ✓ The ratio of non-performing loans to total asset
- ✓ The ratio of loan loss provisions to total asset
- ✓ The ratio of liquid asset to total asset\*
- ✓ The logarithm of total asset
- ✓ Bank type (large, regional, regional II. shinkin, Norinchukin)

\*liquid assets include cash, deposits, call loans, and securities

# Determinants of the Lending Rate Other Than Collateralization and a Public Guarantee, Contd.

*The length of the main bank relationship*

*Variables relevant to information on the firm*

- ✓ Frequency of reporting to the main bank (DOC)
- ✓ Whether the firm reports to its main bank on the bank's request (DOC\_BANK)
- ✓  $\text{DOC} \times \text{DOC\_BANK}$
- ✓ Firm age
- ✓ The number of executives
- ✓ Whether the firm is owner managed
- ✓ The firm's capital to asset ratio

# Determinants of the Lending Rate Other Than Collateralization and a Public Guarantee, Contd.

## *The firm's credit score*

- Rated by an independent research firm (TSR)

## *Firm characteristics*

- ✓ Whether the firm's representative is a homeowner or not
- ✓ Age of the firm's representative
- ✓ Whether the firm's representative has a college degree
- ✓ The firm's registered region, the firm's registered industry

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# What Do We Find?

A main bank does **not discount** the interest rate on a loan to a firm that offers a collateral at its will.

A firm that applies to a public guarantee at its will has to pay **34 basis points higher** than a firm that doesn't

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# How Do We Interpret Empirical Findings?

**A loan secured by a collateral is not properly priced.**

- ✓ A collateral does not play a role as a signaling device.

**It is risky firms that are willing to apply to public credit guarantees.**

- ✓ The moral hazard problem arises under the public credit guaranteeing system.

# Other Major Findings

- ◆ Main banks have their long time borrowers **bear the cost of non-performing loans** by taking advantage of their stronger bargaining position.
- ◆ A long relationship (36 years on average!!) **eliminates the financial disadvantage of a firm that lacks adequate public disclosure.**
- ◆ Under the main bank relationship, **an additional year of relationship does not matter** to the terms of contract.