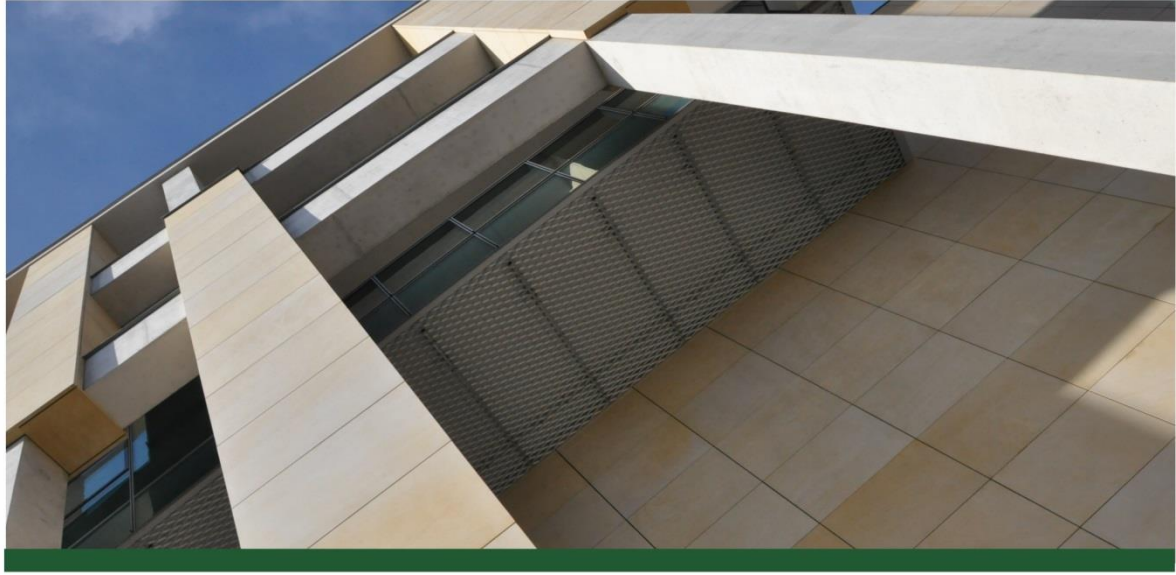

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# Motivated institutional investors and bank debt financing

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Ministerstwo Nauki i Szkolnictwa Wyższego

Regionalna Inicjatywa Doskonałości

# RESEARCH QUESTION AND MOTIVATION

Regionalna Inicjatywa Doskonałości

Our **main aim** was to verify whether shareholdings of motivated institutional investors **affect debt structure** of companies listed on the Warsaw Stock Exchange (WSE) and thus **improve corporate governance**.

We believe that Polish setting is a **perfect laboratory** for testing the relations between ownership structure and debt choices, for **three reasons**:

- **most companies** listed on WSE are **controlled by a single large shareholder** (a family, another company or a state) – an average stake of the largest shareholder is app. 42%
- **institutional investors** in Poland **hold relatively large stakes** (in terms of aggregate institutional ownership app. 30%) and play typically the role of **largest minority shareholders**
- bank loans are the primary source of firms' debt financing (**bank-based economy**)



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# LITERATURE REVIEW AND HYPOTHESES

## Theoretical background:

- Minority shareholders are interested in using debt, due to its disciplinary nature and the monitoring function reducing the potential risk of expropriation by controlling shareholders (Jensen and Meckling 1976; Jensen, 1986)
- Banks, compared to public bondholders, are more efficient monitors: (1) the reduction of free rider problems, (2) access to superior information, (3) effective punitive measures, and (4) efficiency in renegotiation during financial distress (Fama, 1985; Diamond, 1991; Rajan, 1992, Park, 2000)
- Large shareholders (blockholders) motivation to monitor (Shleifer and Vishny 1986; Admati et al. 1994; Maug 1998; Admati and Pfleiderer 2009; Edmans 2009)

## Empirical evidence on institutional ownership in corporate governance context:

- Institutional investors can **effectively monitor insiders** (Brickley et al., 1988, Chen et al., 2007; Cronqvist and Fahlebrach, 2009)
- Institutions engage in corporate governance and monitor insiders using **two different channels: voice (intervention) or exit (trading)** (McCahery, Sautner, & Starks, 2016)

# LITERATURE REVIEW AND HYPOTHESES

Regionalna Inicjatywa Doskonałości

## Empirical evidence on institutional ownership in corporate governance context (cont.):

- Institutional investors with **shareholdings that constitute a significant part of their portfolios**, called motivated monitors, have a **particular incentive to monitor** insider activities (Fitch et al., 2015)
- **Motivated monitors** and corporate policies:
  - motivated institutions **affect portfolio companies' financial decisions**, including:
    i) M&A (Fitch et al. 2015),
    ii) payout policy (Nagel et al. 2015),
    iii) cash holdings (Ward et al. 2018),
    iv) investments (Ward et al. 2020; Miller et al. 2022)
  - monitoring by motivated institutions **improves corporate governance** (Liu and Yin, 2023), enhances **corporate performance** and **increases firm value** (Nagel et al. 2015)
- Institutional investors **influence financing decisions** (Boubaker et al. 2019) including **debt structure** (Cline et al. 2019) and consider **agency costs as important drivers of capital structure** (Brown et al. 2019)


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# LITERATURE REVIEW AND HYPOTHESES

## Insiders' debt preferences:

- Managers of public companies - representing the majority shareholders – are generally **reluctant to use bank debt** due to the **low flexibility in the use of funds** raised in this way and **close monitoring** by banks (Lin et al., 2013)
- Even if the **bond market is less developed** and insiders might be somewhat forced to use bank financing, many of companies would be interested in **replacing bank debt with debt securities to weaken bank monitoring**

## Hypotheses:

Main hypothesis:

*Monitoring by motivated institutional investors (playing the role of minority shareholders) substitutes monitoring by banks (as debtholders)*

Testable hypothesis:

*Shareholdings of motivated institutions are negatively associated with the use of bank debt*

# MEASURES

**Main measures of debt :**

***BANK_DEBT$_{it}$*** *- bank debt divided by total debt, where bank debt is the sum of term loans and revolving credit*

***TOTAL_DEBT$_{it}$*** *- sum of all types of debt, including term loans, revolving credits, senior bonds and notes, subordinated bonds and notes, commercial papers, capital leases, and other debt divided by total asssets*

**Additional measures of debt :**

***PUBLIC_DEBT$_{it}$*** *- public debt divided by total debt, where public debt is the sum of senior bonds and notes, subordinated bonds and notes, and commercial paper*

***SHORTTERM_DEBT$_{it}$ -*** *proportion of total debt maturing in less than four years*

***DEBT_RATIO$_{it}$*** *- total debt divided by the sum of the total debt and the market value of equity*

# MEASURES CONT.

**Measures of motivated institutional monitoring :**

***MM_IO$_{it}$*** *- fraction of shares owned by monitoring motivated institutions, where motivated institutions are institutions whose holding value in the firm is in the top 20% of the institution's portfolio*

***MM_PCNT$_{it}$*** *- proportion of monitoring motivated institutions among all institutions holding firm's shares*

***MM_NUM$_{it}$*** *- number of monitoring motivated institutions*

***PORTFWEIGHT$_{it}$*** *- firm-level weighted average weight of the value of the equity investment in a firm in the institutional shareholder's portfolio*

***TMATT$_{it}$*** *- firm-level weighted average of a firm's institutional ownership, with the weights being the institutional investors' monitoring motivation as proposed by Ward et al. (2018)*

# EMPIRICAL MODEL AND OTHER VARIABLES

$$BANK\_DEBT_{i,t} = \alpha + \beta_1 \times MOTIVATED\_IO_{i,t-1} + \sum_{j=2}^{n} \beta_j \times CONTROLS_{j,i,t-1} + \alpha_t + \varepsilon_{i,t}$$

**Control variables :**

- PROFIT
- TANG
- Q
- LEV
- SIZE
- ZSCORE
- BANK_DEBT_IND
- BLOCK_IO

**Alternative explanations:**

- IND_HHI
- DUALCLASS

**Information environment :**

- ADR_OPACITY_LOW
- QUAL_TRANSP_HIGH

**Severity of agency problems :**

- FCF_PROBLEM
- FAMILY_CONTROL

**Monitoring effectiveness characteristics :**

- MM_IO_INDEP / MM_IO_GREY
- MM_IO_LT / MM_IO_NON_LT
- MM_IO_LMLTB / MM_IO_SMLTB

# SAMPLE

- Study based on **460** nonfinancial companies listed on the main market of WSE for at least one year during the period **2010–2019**
- Data source: ***Capital IQ - S&P Global; Amadeus - Bureau Van Dijk; Notoria Serwis, Polish Financial Market Supervisor (KNF); hand – collected ownership data***
- Final sample is limited to **3,365** firm-year observations

Sample firms' characteristics

| VARIABLES | No | Mean | Std | 25th | Median | 75th |
|---|---|---|---|---|---|---|
| **Debt Characteristics** | | | | | | |
| *BANK_DEBT* | 3,365 | 0.683 | 0.349 | 0.440 | 0.840 | 0.980 |
| *PUBLIC_DEBT* | 3,365 | 0.111 | 0.243 | 0.000 | 0.000 | 0.000 |
| *TOTAL_DEBT* | 3,365 | 0.230 | 0.199 | 0.090 | 0.200 | 0.310 |
| **Motivated Institutional Monitoring Variables** | | | | | | |
| *MM_IO* | 3,365 | 0.080 | 0.147 | 0.000 | 0.000 | 0.100 |
| *MM_PCNT* | 3,365 | 0.108 | 0.183 | 0.000 | 0.000 | 0.170 |
| *MM_NUM* | 3,365 | 1.585 | 3.768 | 0.000 | 0.000 | 1.000 |
| *PORTFWEIGHT* | 3,365 | 0.073 | 0.195 | 0.000 | 0.000 | 0.020 |
| *TMATT* | 3,365 | 2.657 | 2.487 | 0.300 | 2.200 | 4.170 |


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# SAMPLE CONT.

- We identified **379** institutional investors holding stocks in our sample companies with the availability of data on their portfolios necessary to calculate our measures of motivated institutional monitoring
- The **representativeness** of identified institutions is **relatively high**. The average stake held by all institutional investors in a WSE company in 2010 is app. 23% and is consistent with international studies reporting institutional ownership statistics for Poland (e.g., Ferreira et al., 2017)
- Institutional investors **distribute their holding value unevenly** across five quantile groups

Institutional stock holdings by quantile portfolios

| VARIABLES | Average (median) number of stocks per institution | Average (median) holding value (Mio USD) | Average (median) quantile portfolio value to total portfolio value |
|---|---|---|---|
| *QUANTILE_1* | 25 | 281.763 | 0.742 |
| *QUANTILE_2* | 24 | 52.301 | 0.111 |
| *QUANTILE_3* | 24 | 22.912 | 0.037 |
| *QUANTILE_4* | 24 | 9.989 | 0.012 |
| *QUANTILE_5* | 25 | 6.732 | 0.009 |

# PRIMARY FINDINGS

Regionalna Inicjatywa Doskonałości

Motivated institutional monitoring and bank debt – Tobit

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Intercept | 0.106** | 0.106** | 0.058 | 0.123** | 0.118** |
| | (2.02) | (2.02) | (1.08) | (2.34) | (2.25) |
| **Motivated Institutional Monitoring** | | | | | |
| $MM\_IO_{t-1}$ | −0.117** | X | X | X | X |
| | (−2.17) | X | X | X | X |
| $MM\_PCNT_{t-1}$ | X | −0.010*** | X | X | X |
| | X | (−2.67) | X | X | X |
| $MM\_NUM_{t-1}$ | X | X | −0.010*** | X | X |
| | X | X | (−4.76) | X | X |
| $PORTFWEIGHT_{t-1}$ | X | X | X | −0.068** | X |
| | X | X | X | (−1.98) | X |
| $TMATT_{t-1}$ | X | X | X | X | −0.010*** |
| | X | X | X | X | (−2.62) |
| **Control Variables** | YES | YES | YES | YES | YES |
| **Year Fixed Effects** | YES | YES | YES | YES | YES |
| Obs. | 3,365 | 3,365 | 3,365 | 3,365 | 3,365 |



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# CROSS-SECTIONAL ANALYSIS

Regionalna Inicjatywa Doskonałości

Information environment and the effect of motivated institutional ownership on bank debt

| | (1) | (2) |
|---|---|---|
| Intercept | 0.091* | 0.108** |
| | (1.73) | (2.01) |
| **Motivated Institutional Ownership and Information Environment** | | |
| $MM\_IO_{t-1}$ | −0.006 | −0.025 |
| | (−0.09) | (−0.36) |
| $ADR\_OPACITY\_LOW_{t-1}$ | 0.002 | X |
| | (0.11) | X |
| $MM\_IO_{t-1}$ x $ADR\_OPACITY\_LOW_{t-1}$ | −0.166** | X |
| | (−2.16) | X |
| $QUAL\_TRANSP\_HIGH_{t-1}$ | X | 0.021 |
| | X | (1.25) |
| $MM\_IO_{t-1}$ x $QUAL\_TRANSP\_HIGH_{t-1}$ | X | −0.145** |
| | X | (−1.99) |
| **Control Variables** | YES | YES |
| **Year Fixed Effects** | YES | YES |
| Obs. | 3,365 | 3,365 |



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# CROSS-SECTIONAL ANALYSIS CONT.

Regionalna Inicjatywa Doskonałości

Severity of agency problems and the effect of motivated institutional ownership on bank debt

| | (1) | (2) |
|---|---|---|
| Intercept | 0.105** | 0.083 |
| | (1.98) | (1.14) |
| **Motivated Institutional Ownership and Agency Problems** | | |
| $MM\_IO_{t-1}$ | −0.002 | −0.068 |
| | (−0.03) | (−1.17) |
| $FCF\_PROBLEM_{t-1}$ | 0.027* | X |
| | (1.70) | X |
| $MM\_IO_{t-1}$ x $FCF\_PROBLEM_{t-1}$ | −0.178** | X |
| | (−2.30) | X |
| $FAMILY\_CONTROL_{t-1}$ | X | 0.003 |
| | X | (0.17) |
| $MM\_IO_{t-1}$ x $FAMILY\_CONTROL_{t-1}$ | X | −0.425** |
| | X | (−2.35) |
| **Control Variables** | YES | YES |
| **Year Fixed Effects** | YES | YES |
| Obs. | 3,365 | 2,886 |



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# CROSS-SECTIONAL ANALYSIS CONT.

Regionalna Inicjatywa Doskonałości

Motivated institutional ownership and bank debt: the effect of institutional investor heterogeneity

| | (1) | (2) | (3) |
|---|---|---|---|
| Intercept | 0.106** | 0.100* | 0.108** |
| | (2.01) | (1.89) | (2.05) |
| **Motivated Institutional Ownership Heterogeneity** | | | |
| $MM\_IO\_INDEP_{t-1}$ | −0.123** | X | X |
| | (−2.28) | X | X |
| $MM\_IO\_GREY_{t-1}$ | 0.820* | X | X |
| | (1.87) | X | X |
| $MM\_IO\_LT_{t-1}$ | X | −0.174** | X |
| | X | (−2.40) | X |
| $MM\_IO\_NON\_LT_{t-1}$ | X | −0.109 | X |
| | X | (−1.25) | X |
| $MM\_IO\_LMLTB_{t-1}$ | X | X | −0.127** |
| | X | X | (−2.32) |
| $MM\_IO\_SMLTB_{t-1}$ | X | X | 0.367 |
| | X | X | (0.65) |
| **Control Variables** | YES | YES | YES |
| **Year Fixed Effects** | YES | YES | YES |
| Obs. | 3,365 | 3,365 | 3,365 |



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# ALTERNATIVE TYPES OF FUNDING

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Motivated institutional ownership and alternative types of funding

| | PUBLIC_DEBT | SHORTTERM _DEBT | DEBT_RATIO |
|---|---|---|---|
| | (1) | (2) | (3) |
| Intercept | −0.657*** | 1.053*** | 0.056 |
| | (−5.75) | (19.09) | (1.34) |
| **Motivated Institutional Ownership** | | | |
| $MM\_IO_{t-1}$ | 0.317** | −0.023** | −0.013** |
| | (2.50) | (−2.52) | (−2.39) |
| **Control Variables** | YES | YES | YES |
| **Year Fixed Effects** | YES | YES | YES |
| Obs. | 3,365 | 3,365 | 3,365 |
| Adjusted R2 | - | - | 0.356 |



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# ENDOGENEITY

Motivated institutional ownership and bank debt: Quasi - indexers vs Non - indexers

| | **(1)** |
|---|---|
| Intercept | 0.092* |
| | (1.73) |
| **Motivated Institutional Ownership** | |
| *MM _IO$_{t-1}$_QUASI-INDEXER* | −0.317*** |
| | (−2.59) |
| *MM _IO$_{t-1}$_NON- INDEXER* | −0.098* |
| | (−1.66) |
| **Control Variables** | YES |
| **Year Fixed Effects** | YES |
| Obs. | 3,365 |

Derrien et al. (2013):

*splitting investor ownership into two components, one that is* ***plausibly exogenous (indexer ownership)*** *and another that is* ***possibly endogenous (non-indexer ownership),*** *provides a useful identification strategy*



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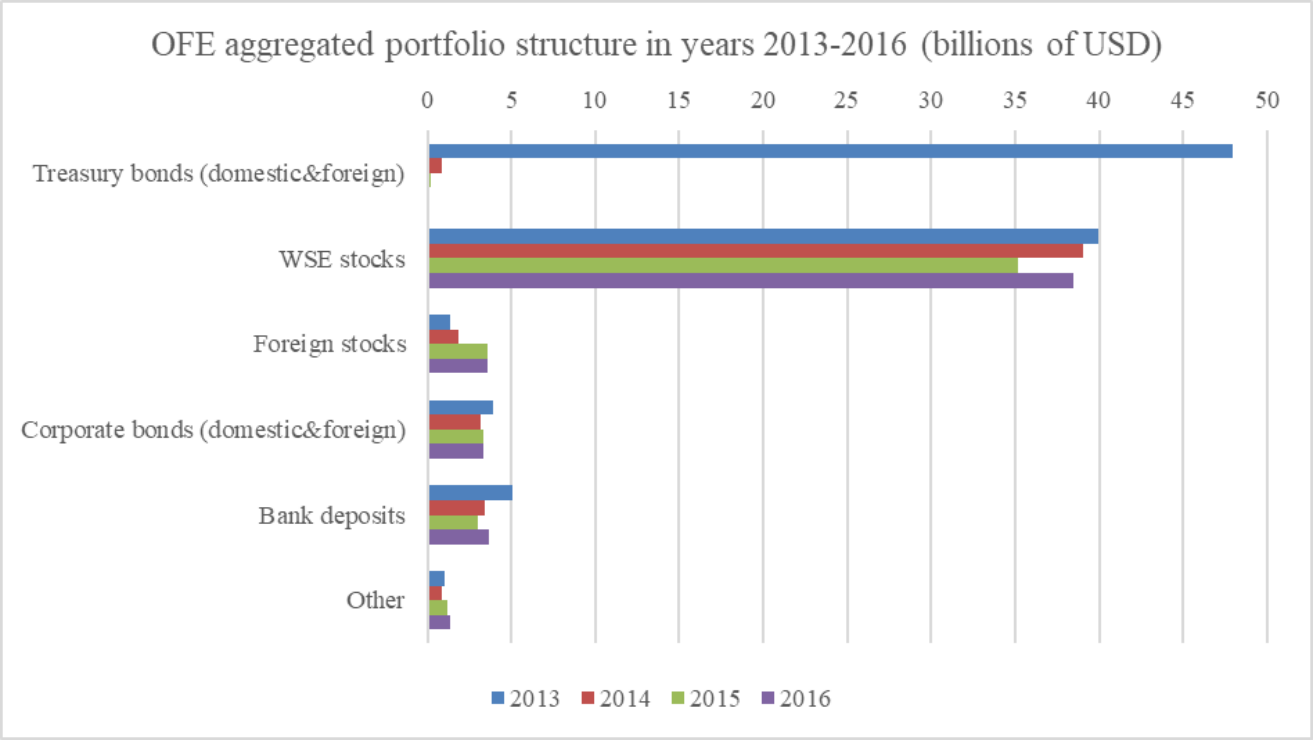
# ENDOGENEITY CONT.

Pension funds (OFEs) reform of 2013 as a quasi-natural experiment

Changes **transforming OFEs from balance funds to equity funds and forcing them to invest mostly in shares**, encouraged pension funds to allocate **more monitoring efforts to their portfolio firms**, especially these with high relative importance in their portfolios







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# ENDOGENEITY CONT.

Regionalna Inicjatywa Doskonałości

Motivated institutional ownership and bank debt: DiD using pension funds reform in 2013

| | Full Sample | | PSM Sample | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Intercept | 0.080 | 0.081 | 0.740*** | 0.746*** |
| | (1.50) | (1.50) | (3.50) | (3.53) |
| **Treatment Effects** | | | | |
| *POST_REFORM x TREAT* | −0.088** | −0.086** | −0.123** | −0.110* |
| | (-2.09) | (-2.02) | (-1.97) | (-1.85) |
| *TREAT* | −0.010 | −0.012 | 0.048 | 0.042 |
| | (-0.30) | (-0.36) | (1.13) | (0.93) |
| **Motivated Institutional Ownership** | | | | |
| $MM\_IO_{t-1}$ | −0.083 | −0.091 | 0.000 | −0.062 |
| | (-1.50) | (-1.61) | (0.00) | (-0.39) |
| **Control Variables** | YES | YES | YES | YES |
| **Institutional Investors Monitoring Control Variables** | NO | YES | NO | YES |
| **Year Fixed Effects** | YES | YES | YES | YES |
| Obs. | 3,365 | 3,365 | 402 | 402 |

TREAT = 1 if the pension funds (OFE) being motivated institutions hold more firm's shares outstanding than non-pension funds motivated institutions at the end of 2013 and 0 otherwise

POST_REFORM = 1 for the post pension funds reform period (2014-2019) and zero otherwise



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# FIRM VALUE IMPLICATIONS

The effect of motivated institutional ownership and bank debt on firm value (Tobins Q): DiD using pension funds reform in 2013

| | (1) | (2) |
|---|---|---|
| Intercept | 1.248*** | 1.355*** |
| | (8.88) | (9.24) |
| **Treatment Effects** | | |
| *POST_REFORM x TREAT x BANK_DEBT* | −0.797** | −0.785** |
| | (−2.26) | (−2.17) |
| *TREAT x BANK_DEBT* | 0.852** | 0.827** |
| | (2.51) | (2.40) |
| *POST_REFORM x BANK_DEBT* | 0.063 | 0.077 |
| | (0.57) | (0.71) |
| *BANK_DEBT* | −0.088 | −0.101 |
| | (−1.19) | (−1.36) |
| *POST_REFORM x TREAT* | 0.550** | 0.545** |
| | (2.30) | (2.25) |
| *TREAT* | −0.157 | −0.201 |
| | (−0.73) | (−0.91) |
| **Motivated Institutional Ownership** | | |
| $MM\_IO_{t-1}$ | 0.668*** | 0.651*** |
| | (3.37) | (3.24) |
| **Control Variables** | YES | YES |
| **Institutional Investors Monitoring Control Variables** | NO | YES |
| **Year Fixed Effects** | YES | YES |
| Obs. | 3,331 | 3,331 |
| Adjusted R2 | 0.259 | 0.268 |



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# SUMMARY

**Main conclusions**:

- there is a negative relationship between the shareholdings of motivated institutional investors and the firm's reliance on bank debt
- the observed effect holds mostly for transparent companies, for companies suffering from substantial agency problems and for institutions with high monitoring effectiveness
- firms with motivated institutional investors tend to have higher proportions of public debt, lower proportions of short-term debt and lower overall debt ratio
- companies substituting bank monitoring with institutional monitoring experience firm value increase
- the results support monitoring substitution hypothesis


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Thank you for your attention!



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