

**The Impact of Ownership Concentration on Bank Performance and Risk-taking: Evidence  
from East Asia**

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# **The Impact of Ownership Concentration on Bank Performance and Risk-taking: Evidence from East Asia**

## **Abstract**

Motivated by agency theory, we explore the impact of ownership concentration on bank performance and risk-taking. Our results, based on banks in East Asia, reveal that more concentrated ownership is associated with poorer bank performance and lower risk-taking. In particular, a rise in ownership concentration by one standard deviation reduces bank profitability by nearly 17% and lowers the degree of risk-taking by about 10%. Our results also show that banks with more concentrated ownership experience higher operating costs. Further analysis shows that our results are not likely driven by unobservable bank characteristics, nor by reverse causality. Our results are important as they show that ownership concentration is a significant determinant of bank performance, operating costs, and risk-taking.

*JEL Classification:* G21, G34

*Keywords:* *ownership*, corporate governance, bank performance, risk taking, East Asia, financial institutions, agency theory

## **I. Introduction**

The finance literature is replete with studies that examine the effect of ownership structure on non-financial firm performance and other corporate outcomes. Substantially less attention has been dedicated, however, to the impact of ownership on bank performance. Even rarer still are studies that explore this issue outside the U.S. and Europe. Asian firms possess several distinctive characteristics that distinguish them from U.S. and European firms. For instance, ownership is much more concentrated in Asia. Asian firms rely more on bank loans than on capital market financing. These unique features prevent researchers from readily extending the research findings based on western firms to Asian firms. We fill this gap in the literature by investigating the impact of ownership structure in East Asian banks.

Using hand-collected ownership data from five countries in East Asia, we seek to understand how ownership concentration affects bank performance and risk-taking. In theory, it is not clear how ownership concentration influences bank performance. One argument is that concentrated ownership helps alleviate the agency conflict between shareholders and managers (Fama and Jensen, 1983; Jensen, 1988), thereby improving bank performance. By contrast, concentrated ownership allows controlling shareholders to expropriate minority shareholders (Shleifer and Vishny, 1986; Faccio and Stolin, 2006), creating an agency conflict that results in poor bank performance.

As far as risk-taking, theory suggests two possible effects of ownership concentration. First, shareholders in a limited liability are motivated to take more risk (Galai and Masulis, 1976; Esty, 1988). From this perspective, concentrated ownership should increase risk-taking. On the

contrary, Burkart et al. (1997) argue that concentrated ownership can bring about excessive managerial oversight, thereby stifling managers' incentives to pursue risky projects.

Our empirical results, based on banks from five Asian countries across five years, indicate that more concentrated ownership hurts bank performance as well as increases the operating costs. In terms of risk-taking, we find that banks where ownership is more concentrated engage in significantly less risk-taking. The results remain robust even after controlling for bank-specific and country-specific characteristics, such as bank size, loan loss provision, bank deposits, bank capital, country GDP. The  $R^2$  statistics show that our regressions explain as much as 68% of the variation in bank performance and 58% of the variation in bank risk-taking. Moreover, the change in  $R^2$  that can be attributed to adding ownership concentration to the model is statistically significant, suggesting that ownership concentration improves the explanatory power of the model significantly. The effect of ownership concentration is not only statistically significant, but also economically meaningful. An increase in ownership concentration by one standard deviation is associated with a reduction in ROA by as much as 16.88%. Similarly, an incremental shock by one standard deviation in ownership concentration results in a decline in risk-taking by nearly 10%.

Furthermore, we recognize possible endogeneity and show that our results are not likely influenced by unobservable bank characteristics. Specifically, we exploit the insight from Altonji et al. (2005) to demonstrate that selection from unobservables would have to be much stronger than selection on observables to explain away the ownership effect. Moreover, to address possible reverse causality, we relate ownership concentration in the earliest year of the sample to subsequent bank performance. Ownership in the earliest year could not have resulted from bank

performance in the subsequent years. The evidence suggests that ownership concentration more likely brings about poor performance than vice versa. Finally, some prior studies document a non-linear effect of ownership concentration. As a consequence, we also explore the possibility of a non-linear relationship in our sample. The results, nevertheless, do not show any support for a non-linear relationship.

The results of our study contribute to several areas of the literature. First, we add to the literature in corporate governance by showing that ownership concentration does have a palpable effect on bank performance and risk-taking. Second, our results contribute to the banking literature, showing that, although banks differ from non-financial firms in several ways, including being heavily regulated, their ownership structure is a significant determinant of their performance and risk-taking. Third, the literature in emerging markets also benefits from our study. Emerging markets possess several distinctive characteristics, including high ownership concentration, more reliance on bank loans, and more severe corruption. In spite of these different characteristics, ownership structure remains important in determining bank performance and risk-taking.

The remainder of this paper is organized as follows. Section II discusses the theoretical context of our analysis. Section III develops the hypotheses. Section IV presents and discusses the empirical results. Finally, Section V offers the concluding remarks.

## **II. Theoretical Background**

Agency theory suggests that a divergence of ownership and management spawns agency costs, where managers act for their own private benefits, rather than to maximize shareholder

wealth. The agency conflict between managers and shareholders is more severe in firms where ownership is more dispersed, as coordination problems hinders effective monitoring of managerial actions by atomistic shareholders (Fama and Jensen, 1983; Jensen, 1988). By contrast, the agency conflict is expected to be mitigated in firms with concentrated ownership, as controlling shareholders are motivated to monitor managers, and even replace them in case of poor performance (Frank et al., 2001). These arguments suggest the benefits of concentrated ownership. On the contrary, ownership concentration engenders another kind of agency costs, i.e. the agency conflict between controlling shareholders and minority shareholders (Shleifer and Vishny, 1986; Faccio and Stolin, 2006). Concentrated ownership allows controlling managers to force managers to adopt policies that favor them at the expense of minority shareholders.

It is not clear whether these standard agency theory issues apply equally to banks as they do to non-financial firms. On the one hand, banks are distinct from other firms as they are heavily regulated, highly levered, and more opaque than non-financial firms (Macey and O'Hara, 2003; John and Qian, 2003; Levine, 2003). On the other hand, Caprio et al (2007) argue that "the same core corporate control mechanisms that influence the governance of non-financial firms also influence bank operations".

### **III. Hypothesis Development**

#### *a. Ownership concentration and bank performance*

With dispersed ownership, it is more difficult to monitor management. Concentrated ownership provides more effective monitoring, which should lead to better performance. Nevertheless, concentrated ownership may have a negative effect on performance as it

exacerbates the agency conflict between controlling shareholders and minority shareholders. In Asia, ownership is much more concentrated than it is in the U.S. and Europe. Investor protection is also relatively poorer in Asia. These factors suggest that the agency costs may be more severe, arising from controlling shareholders' expropriation from minority shareholders. Therefore, the benefits of better managerial oversight may be outweighed by the agency costs. We thus hypothesize that ownership concentration is associated with poorer bank performance.

*b. Ownership concentration and bank risk-taking*

There are two opposing hypotheses regarding the impact of concentrated ownership on risk-taking. First, as in any limited liability firm, diversified owners have incentives to increase bank risk after collecting funds from bondholders and depositors (Galai and Masulis, 1976; Esty, 1998). However, managers with bank-specific human capital skills and private benefits of control will tend to advocate for less risk-taking than stockholders without those skills and benefits (Jensen and Meckling, 1976; Demsetz and Lehn, 1985; Kane, 1985). Concentrated ownership can overcome managers' tendency for risk avoidance. From this perspective, banks with a more concentrated ownership structure tend to take more risk. Second and by contrast, as the monitoring efforts exerted by large shareholders increases, managerial initiatives to pursue new risky investment opportunities decreases (Burkart et al, 1997). This argument implies less risk-taking by managers when concentration of ownership is high.

Investor protection laws and banking regulations also play an important part. In addition to empowering equity holders, effective shareholder protection laws reduce the need for the emergence of a large shareholder to mitigate agency problems (Shleifer and Wolfenzon, 2002; John et al., 2000; Castro et al., 2004). Accordingly large shareholders should play a less

prominent role in shaping corporate behavior in economies with effective shareholder protection laws. Given that shareholder protection in Asia is poorer than it is in the U.S. or Europe, the role of large shareholders in increasing risk-taking should be more pronounced in Asia. We hypothesize that ownership concentration is associated with a higher degree of risk-taking in Asia.

### **III. Sample Selection and Data Description**

#### *a. Sample Construction*

From annual reports, Datastream, and the Stock Exchange of Thailand, we collect data on income statements, balance sheets, and major shareholders. The sample period is from 2004 to 2008. We hand-collect the ownership data from proxy statements. The sample consists of exchange-listed banks in 5 countries including Thailand, Hong Kong, Singapore, Indonesia, and Malaysia. We start with 62 banks from 5 countries, resulting in a total number of bank-year observations of 310. However, due to incomplete shareholder and financial information, we are forced to exclude 26 banks. The final data set consists of 36 banks from 5 countries for a total of 180 bank-year observations for which we have both the ownership and accounting data.<sup>2</sup> These are large banks that tend to disclose more information. For instance, the sample banks include Bangkok Bank (the largest commercial bank in Thailand) and United Overseas Bank (a large commercial bank in Singapore).

#### *b. Data Description*

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<sup>2</sup> The final sample consists of 7 banks from Thailand, 3 banks from Singapore, 8 banks from Hong Kong, 12 banks from Indonesia, and 6 banks from Malaysia for a total of 36 banks.

The focus of this study is on the impact of ownership concentration. We define ownership concentration as the ownership percentage of shares held by the top five shareholders. Below, we describe our measures for bank performance, risk-taking, as well as the control variables included in the analysis.

### *b.1 Bank Performance*

As far as bank performance, we employ two performance measures.

(1) *Return on Assets*: The ratio of operating profit over total assets (ROA).

$$\text{ROA} = \frac{\text{Operating profit}}{\text{Total asset}} \quad (1)$$

Since controlling shareholders may engage in expropriation that is reflected both on the balance sheet and the income statement, such as perk consumptions, excessive compensation, and inefficient investments. Therefore, the return on asset (ROA) would be an appropriate performance measure that incorporates the effect of expropriation both in terms of the balance sheet and the income statement.

(2) *Operating Costs*: The ratio of operating costs to total asset.

$$\text{Costs} = \frac{\text{Operating costs}}{\text{Total asset}} \quad (2)$$

In order to get a better understanding about performance, we also examine the operating costs.

### *b.2 Bank Risk-taking*

To assess the extent of risk-taking, we use the following variable.

(3)  $LN(Z)$ : The log of Insolvency Risk,  $Z$ , for bank  $j$  at time  $t$

$$Z_{jt} = \frac{\hat{\mu}_{jt} + \left(\frac{E_{jt}}{A_{jt}}\right)}{\hat{\sigma}_{jt}} \quad (3)$$

This indicator determines the risk of failure to be essentially dependent on the interaction of the income generating capacity, the potential size of return shocks, and the level of capital reserves available to absorb sudden shocks.  $\hat{\mu}_{jt}$  and  $\hat{\sigma}_{jt}$  are sample estimates (based on the monthly values of  $R_{jt}$ ) of the mean and standard deviation of bank's  $i$  returns on assets at time  $t$ , and  $\frac{E_{jt}}{A_{jt}}$  is the  $t$ th time average of the market capital-to-asset ratio. Since the  $Z$  score is highly skewed, it is generally used in terms of the natural logarithm of the  $Z$  score, which is normally distributed.

This variable suggests the degree of exposure to operating losses, which reduce the capital reserves against unexpected harmful shocks. Entities with low capital and a weak financial margin compared to the volatility of their returns will score low on this indicator. In other words, as this indicator captures the solvency and profitability record of financial institutions, it is a measure of firm stability (or distance to default). The lower the Insolvency risk indicator,  $LN(Z)$ , the higher the probability of default.

### *b.3 Control Variables*

Bank performance and risk-taking are influenced by several factors other than ownership concentration. Based on prior literature, we include the following control variables in our analysis.

(4) *SIZE*: The log of total assets

$$SIZE = \ln(\text{Total assets}) \quad (4)$$

Due to economies of scale, larger banks should have higher income. Moreover, McAllister and McManus (1993) state that larger banks have greater opportunities to diversify risk, leading to lower costs of financing. In addition, they may be “too-big-to-fail”.

(5) *CAPITAL*: Book value of equity to total assets

$$CAPITAL = \frac{\text{BV of Equity}}{\text{Total assets}} \quad (5)$$

We measure capital adequacy using the ratio of book value of equity to total assets. Well capitalized banks are expected to have high-quality management and/or more efficient operations. In addition, well capitalized banks are less likely to become bankrupt. The Basel Accord requires banks to hold a minimum level of capital as a percentage of risk-weighted assets. The higher the capital level, the riskier assets they hold (Iannotta, 2006).

(6) *LOANS*: Loans to total earning assets

$$LOANS = \frac{\text{Loan}}{\text{Total Earning Assets}} \quad (6)$$

(7) *DEPOSITS*: Retail deposits to total assets

$$\text{DEPOSITS} = \frac{\text{Retail deposits}}{\text{Total Assets}} \quad (7)$$

(8) *LOANLOSS*: Loan loss provision to total loans

$$\text{LOANLOSS} = \frac{\text{Loan loss provision}}{\text{Total Loan}} \quad (8)$$

This variable is a proxy of asset quality.

(9) GDP: The GDP growth rate is used to control for macroeconomic conditions.

In order to control for country-specific and time-specific effects, year dummies and country dummies are included as well.

#### **IV. Empirical Results**

##### *a. Descriptive Statistics*

The summary statistics for selected bank characteristics are provided in Table 1. The average ownership concentration is 57.87% (61.44% median) with a standard deviation of 19.81%. East Asian banks are profitable with the average ROA of 1.32%. The ratio of operating costs to total assets averages 0.06. The average ratio of loans to total earnings assets is 0.76, whereas the average ratio of retail deposits to total assets is 0.62. Moreover, we find that the ratio of the book value of equity to total assets averages 0.09. The Asian countries included in our sample experience high economic growth as indicated by the average GDP growth rate of 5.73% per year.

##### *b. Regression Results*

We execute a multivariate regression analysis on bank performance and risk-taking. The results are shown in Table 2. In Model 1, we employ ROA as our measure of bank performance. The coefficient of ownership concentration is negative and highly significant. Thus, it appears that more concentrated ownership is associated with a reduction in bank profitability. The result is consistent with the notion that more concentrated ownership allows controlling shareholders to expropriate minority shareholders. This expropriation effect appears to dominate the monitoring effect that accompanies concentrated ownership. The expropriation effect is probably exacerbated in Asia, due to relatively poor investor protection laws. That is why bank performance declines with higher ownership concentration.

To ascertain the economic significance of our result, we calculate the standardized coefficient for ownership concentration, which turns out to be 0.223. The standardized coefficient reveals the impact of ownership concentration on ROA, given a one standard deviation shock in ownership concentration. The standard deviation of ROA in our sample is 1.00. Thus, an increase in ownership concentration by one standard deviation reduces ROA by 0.223 times 1.00, which equals 0.223. The average ROA in the sample is 1.32. Therefore, 0.223 represents 16.89% of 1.32. Therefore, when ownership concentration rises by one standard deviation, performance drops by nearly 17%, an economically meaningful decline.<sup>3</sup>

We now switch our attention to the operating costs. Model 2 has operating costs as the dependent variable. Ownership concentration exhibits a positive and significant coefficient in Model 2, suggesting higher operating costs for banks with more concentrated ownership.

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<sup>3</sup> We run a regression with only the control variables. Then, we compare the adjusted  $R^2$  of this regression with the  $R^2$  of the full model with ownership concentration. Including ownership concentration improves the adjusted  $R^2$  by 5.65%. We test the F-statistics that arises from the change in  $R^2$  and find that it is statistically significant. Thus, ownership concentration adds significant explanatory power to the model.

Therefore, the poor performance in banks with high ownership concentration can be attributed, at least in part, to the higher operating costs. We perform a similar calculation to determine the economic significance of the effect of ownership concentration on the operating costs. Our calculation reveals that a rise ownership concentration by one standard deviation increases the operating costs by 2.74%.

In Model 3, we examine the effect of ownership concentration on the extent of risk taking. The dependent variable is the logarithm of the Z score. The coefficient of ownership concentration in Model 3 is positive and significant. Banks where ownership is more concentrated engage in less risk-taking. Although not consistent with our expectations, this result is in agreement with Burkart et al. (1997), who argue that concentrated ownership brings about more intense monitoring of managers, thereby discouraging them from pursuing new risky projects. Prior research in this area based on western banks documents a positive association between ownership concentration and risk-taking. Our result here indicates that the conclusion based on western banks cannot be readily applied to Asian banks. We compute the standardized coefficient of ownership concentration and find that a rise in ownership concentration by one standard deviation diminishes the degree of risk-taking by 9.99%, an economically significant drop.

### *c. Addressing Possible Endogeneity*

It is conceivable that ownership concentration and bank performance might be endogenously determined. There are two types of endogeneity. First, ownership concentration and bank performance may be related to a third unobservable bank characteristic. If this is the case, then the association between ownership concentration and performance might be spurious.

We address this potential problem by exploiting the insight from Altonji, Elder, and Taber (2005). Their study suggests that selection on observables can be used to estimate the potential bias generated by unobservables, i.e. how much stronger selection on unobservables, relative to selection on observables, would have to be to explain away the full estimated effect.<sup>4</sup>

This potential bias can be estimated this way, consider two regressions: one with a restricted set of control variables, and one with a full set of controls. Denote the estimated coefficient for the variable of interest from the first regression  $\beta^R$  (where R stands for Restricted) and the estimated coefficient from the second regression  $\beta^F$  (where F stands for Full). Then, the ratio can be computed as  $\beta^F / (\beta^R - \beta^F)$ .<sup>5</sup> The intuition behind the formula is straightforward. First, consider why the ratio is decreasing in  $(\beta^R - \beta^F)$ . The smaller the difference between  $\beta^R$  and  $\beta^F$ , the less the estimate is affected by selection on observables, and the stronger selection on unobservables needs to be (relative to observables) to explain away the entire effect. Then, consider the intuition behind  $\beta^F$  in the numerator. The larger  $\beta^F$ , the greater is the effect needs to be explained away by selection on unobservables, and therefore the higher the ratio.

We apply this method to our sample and estimate two regressions: one with no controls and another with a full set of control variables from Table 2. The ratio calculated from the two coefficients of ownership concentration from the two regressions turns out to be 2.25. Consequently, to attribute the entire OLS estimate to selection effects, selection on unobservables would have to be at least 2.25 times stronger than selection on observables. It appears unlikely that the estimated effect of ownership concentration on bank performance is

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<sup>4</sup> Altonji et al. (2005) consider the situation where the explanatory variable is a binary variable. Bellows and Miguel (2009) develop an analogous test for the case where the variable of interest is continuous. Full details of the test are provided in the working version of their study, Bellows and Miguel (2008).

<sup>5</sup> See Bellows and Miguel (2008) for the formal derivation. As well, see Altonji et al. (2005) for details of the underlying assumptions.

fully driven by unobservables. This provides a certain degree of comfort that our results are not spurious due to possibly omitted variables.

Then, there is another type of endogeneity, i.e. possible reverse causality. We have assumed so far that causality runs from ownership to bank performance. It could be argued, however, that the direction of causality might be reverse. The reverse causality, nevertheless, is less plausible. It is unclear why banks with poor performance would have more concentrated ownership. There does not seem to be any theory in the literature that suggests such a possibility.

In any event, we perform an additional analysis to minimize concerns for reverse causality. In particular, for each bank, we substitute ownership concentration in the earliest year for ownership concentration in any given year. Ownership concentration in the earliest year could not have resulted from bank performance in any of the subsequent years. Therefore, if we find that ownership concentration in the earliest year can explain bank performance in the subsequent years, then the direction of causality is much more likely to run from ownership concentration to bank performance than vice versa. Table 3 shows the regression results, where we employ ownership concentration in the earliest year of the sample. The coefficient of ownership concentration is negative and significant, confirming the OLS result. Likewise, the coefficients of ownership concentration are significantly positive in the regressions for operating costs and risk-taking, corroborating the OLS results. Although our tests do not completely rule out endogeneity, they do improve the odds that reverse causality is unlikely.

Furthermore, we explore the possibility of a non-linear relationship. We include a quadratic term of ownership in the regression to capture any possible non-linearity. However, the quadratic term does not produce a significant coefficient. In addition, we slice ownership

concentration into a number ranges based on prior literature and create a dummy variable corresponding to each range. The regression results are not significant, nonetheless.

## **V. Concluding Remarks**

We investigate the influence of ownership concentration on bank performance and risk-taking in East Asia. The empirical evidence reveals that more concentrated ownership is associated with poorer bank performance, higher operating costs, and less risk-taking. The poorer performance suggests that, as ownership becomes more concentrated, controlling shareholders are better able to exploit minority shareholders, exacerbating the agency conflict and resulting in poorer bank performance (Shleifer and Vishny, 1986; Faccio and Stolin, 2006). As far as risk-taking, the empirical evidence is consistent with the notion that more concentrated ownership imposes more intense monitoring on managers, stifling their incentives to adopt new risk projects (Burkart et al., 1997). We also find that the impact of ownership concentration is not only statistically significant, but also economically meaningful.

To alleviate concerns for endogeneity, we employ the insight in Altonji et al. (2005) to show that our results are not likely driven by unobservable variables. We also demonstrate that the direction of causality more likely runs from ownership to bank performance than vice versa. Our results are important because they show that ownership concentration is a significant determinant of bank performance, operating costs, and risk-taking. Our study thus contributes to the finance literature in several areas, including corporate governance, banking, agency theory, and emerging markets.

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Table 1: Descriptive Statistics

Ownership concentration is the percentage of shares held by the top five shareholders. ROA is operating profit divided by total assets. Operating costs are the ratio of operating costs divided by total assets. Bank size is the logarithm of total assets. Loans are the ratio of loans to total earnings assets. Deposits are the ratio of retail deposits to total assets. Capital is the ratio of book value of equity divided by total assets. Loan loss is the ratio of loan loss provision to total loans. Finally, GDP growth is the annual GDP growth.

	Mean	Median	S.D.	25 <sup>th</sup>	75 <sup>th</sup>
Ownership Concentration	57.87%	61.44%	19.81%	45.25%	72.88%
ROA	1.32	1.32	1.00	0.90	1.79
Operating Costs	0.06	0.05	0.03	0.04	0.08
Bank Size	16.26	16.67	1.81	15.59	17.37
Loans	0.76	0.79	0.13	0.67	0.87
Deposits	0.62	0.64	0.15	0.54	0.75
Capital	0.09	0.09	0.02	0.08	0.10
Loan Loss	0.74	0.51	0.09	0.18	1.09
GDP Growth	5.73%	5.6%	1.33%	4.9%	6.7%

Table 2: Regression Analysis of Bank Performance and Risk-taking

Ownership concentration is the percentage of shares held by the top five shareholders. ROA is operating profit divided by total assets. Operating costs are the ratio of operating costs divided by total assets. Bank size is the logarithm of total assets. Loans are the ratio of loans to total earnings assets. Deposits are the ratio of retail deposits to total assets. Capital is the ratio of book value of equity divided by total assets. Loan loss is the ratio of loan loss provision to total loans. Finally, GDP growth is the annual GDP growth. \*, \*\*, \*\*\* denote statistical significance at the 10%, 5%, and 1% respectively.

Variable	(1) ROA	(2) Operating Costs	(3) Ln(Z), Risk
Ownership Concentration	-1.129*** (0.000)	0.008* (0.056)	1.681** (0.031)
GDP Growth	0.020 (0.642)	0.000 (0.330)	0.031 (0.640)
Bank Size	0.423*** (0.000)	-0.003*** (0.000)	0.170* (0.031)
Loan	-29.629 (0.485)	2.963*** (0.000)	-42.035 (0.547)
Deposits	0.641* (0.063)	0.004 (0.415)	-0.064 (0.897)
Capital	11.638*** (0.000)	-0.028 (0.426)	12.600** (0.037)
Loan Loss	-60.213*** (0.000)	1.022 (0.000)	- -
Intercept	-6.186*** (0.000)	0.050*** (0.001)	-0.014 (0.993)
Year Dummies Included	Yes	Yes	Yes
Country Dummies Included	Yes	Yes	Yes
Adjusted R <sup>2</sup>	67.95%	90.87%	58.46%

Table 3: Regression Analysis of Bank Performance and Risk-taking Using Ownership Concentration in the Earliest Year in the Sample

Ownership concentration is the percentage of shares held by the top five shareholders. ROA is operating profit divided by total assets. Operating costs are the ratio of operating costs divided by total assets. Bank size is the logarithm of total assets. Loans are the ratio of loans to total earnings assets. Deposits are the ratio of retail deposits to total assets. Capital is the ratio of book value of equity divided by total assets. Loan loss is the ratio of loan loss provision to total loans. Finally, GDP growth is the annual GDP growth. \*, \*\*, \*\*\* denote statistical significance at the 10%, 5%, and 1% respectively.

Variable	(1) ROA	(2) Operating Costs	(3) Ln(Z), Risk
Ownership Concentration	-0.750***	0.010***	1.138***
(Earliest Year)	(-3.07)	(2.79)	(2.63)
GDP Growth	0.028	0.001	-0.006
	(0.63)	(0.91)	(-0.09)
Bank Size	0.435***	-0.003***	-0.010
	(10.95)	(-5.28)	(-0.13)
Loan	-16.492	2.828***	217.368***
	(-0.38)	(4.36)	(2.77)
Deposits	0.770**	0.003	0.347
	(2.19)	(0.56)	(0.62)
Capital	11.246***	-0.020	10.846**
	(4.77)	(-0.57)	(2.41)
Loan Loss	-58.681***	1.002***	6.384
	(-9.51)	(10.86)	(0.61)
Intercept	-6.769	0.051***	1.055
	(-7.18)	(3.58)	(0.63)
Year Dummies Included	Yes	Yes	Yes
Country Dummies Included	Yes	Yes	Yes
Adjusted R <sup>2</sup>	63.41%	90.28%	37.81%

FIO (FIM) shows positive (negative) impact on banks' risk taking behavior. In Turkey, increasing 1% in FIO (FIM) might incline (decline) RTB by 3.3 (14.2) percent. In Malaysia, adding 1% in FIO (FIM) causes 5.4 (4.2) percent inclination (reduction) in RTB. Family owned banks Islamic countries Financial performance Risk taking behavior Agency theory. This is a preview of subscription content, log in to check access. Hammami Y, Boubaker A (2015) Ownership structure and bank risk-taking: empirical evidence from the middle east and north africa. *Int Bus Res* 8(5)Google Scholar. 7. Shehzad CT, Haan JD, Scholtens B (2010) The impact of bank ownership concentration on impaired loans and capital adequacy. *J Bank Financ* 34(2):399-408CrossRefGoogle Scholar. 18. Our results, based on banks in East Asia, reveal that more concentrated ownership is associated with poorer bank performance and lower risk-taking. In particular, a rise in ownership concentration by one standard deviation reduces bank profitability by nearly 17% and lowers the degree of risk-taking by about 10%. Our results also show that banks with more concentrated ownership experience higher operating costs. Further analysis shows that our results are not likely driven by unobservable bank characteristics, nor by reverse causality. Our results are important as they show that ownership conc... Developing East Asia and the Pacific region has been hit with a triple shock: the COVID-19 pandemic, the economic impact of shutdowns, and the ensuing global recession. What do countries in East Asia and the Pacific need to do in order to move from containment to recovery? Learn more: [worldbank.org/eapupdate](http://worldbank.org/eapupdate). World Bank Group. The crisis has shown that taking a dynamic view could help East Asia and Pacific (EAP) governments make choices today that soften trade-offs tomorrow in seven key areas: Building capacity for smart containment. Initiating fiscal reforms.