

## The Effects of Corporate Governance on Idiosyncratic Risk: Evidence from Financial Institutions in Taiwan

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### Abstract

We employ a dynamic panel data model to examine the effects of corporate governance mechanisms on idiosyncratic risk. Our results show that the firms with better corporate governance mechanisms (including more independent board, better transparency) tend to have a lower idiosyncratic risk using the data of Taiwanese financial institutions from 2006:Q1 to 2012:Q4. However, firms with higher foreign ownership appear to have a higher idiosyncratic risk.

**Keywords:** dynamic panel regression, corporate governance, idiosyncratic Risk

### 1. Introduction

Good corporate governance enhances firms' performance (Agrawal and Knoeber, 1996; Bai et al., 2004; Cheng, 2008; Erkens et al., 2012) and shareholders' wealth (e.g., Ammann et al., 2011; Cremers and Nair, 2005; Drobetz et al., 2004; Gompers et al., 2003). The main rationale behind these findings is that firms with better corporate governance have fewer agency problems (e.g., Henry, 2010). As a result, these firms will have lower agency cost and capital cost (Ashbaugh et al., 2006; Ge et al., 2012). Recently financial risk management in corporate finance becomes increasingly important (Laeven and Levine, 2009). Many studies have investigated the relationship between firm risk and corporate governance. Most of them explore only the relationship between partial corporate governance mechanisms and risk. For example, Wright et al. (1996) find that institutional investors exert positive influence on firms' risk taking. Gadhoun and Ayadi (2003) find that the ownership structure of firms is negatively associated to firms' total risk. Himmelberg et al. (1999) report that when managers possessed high shareholding ratio idiosyncratic risk was reduced. Nguyen (2011) shows that firms with higher ownership concentration will have a higher idiosyncratic risk. Jin and Myers (2006) find that firms possessing less information transparency exhibited high idiosyncratic risk. Moreover, Gasper and Messa (2006) show that highly competitive product markets exhibited increased idiosyncratic risk. Ferreira and Laux (2007) indicate that firms with numerous anti-takeover provisions had low idiosyncratic risk. In this study, we comprehensively examine if good corporate governance can reduce idiosyncratic risk of the firm while increase firms' performance.

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Particularly, we examined the effect of internal corporate governance mechanisms on idiosyncratic risk. We examine the effects of ownership structure, board structure, managerial incentive, and information transparency on idiosyncratic risk. Thus, this paper could provide new evidence on the effect of governance structures on the idiosyncratic risk of financial institutions. It is different from the previous literature that mainly focuses on exploring the effects of parts of the corporate governance mechanism on corporate performance. We choose the financial institutions as our empirical sample. The reason is that as we know the financial institutions plays an important role in economic activities. If they are mismanagement, it will cause financial storm and its knock-on effect would seriously affect the financial order and economic development. Besides, BASEL III was supposed to strengthen bank capital requirements and bank risk management by improving corporate governance. The rest of the paper is organized as follows. Section 2 introduces data and methodology. Section 3 reports the empirical results. Section 4 is the conclusions.

## 2. Data and Methodology

### 2.1 Data

This study uses a seven-year (2006:Q1 to 2012:Q4) span of quarterly data to examine whether good corporate governance reduces the idiosyncratic risk. Our sample consists of financial institutions listed on either Taiwan stock Exchange or the GreTai securities markets. All data come from the *Taiwan Economic Journal* (TEJ) database. We exclude sample firms in the insurance industry because of data unavailable. We end up with 33 firms which include 9 banks, 14 financial holding banks, and 10 securities firms.

### 2.2 Methodology

Following the work of Flannery and Hankins (2013), we use a dynamic panel data model to examine the effects of corporate governance on idiosyncratic risk. Equation (1) includes a lagged dependent variable as explanatory variable in the regression to control for the prior period's idiosyncratic risk. Also, we use GMM approach by Arellano and Bond (1985) to get the consistent estimator and to correct the dynamic panel bias.

$$Y_{i,\tau+1} = \beta_{0i} + \beta_1 Y_{i,\tau} + \sum_{k=2}^K \beta_k X_{ki,\tau} + \varepsilon_{i,\tau+1}, \quad i = 1, \dots, N, \tau = 1, \dots, T \quad (1)$$

where  $Y_{i,\tau}$  represents the idiosyncratic risk of firm  $i$  in quarter  $\tau$ ;  $X_{ki,\tau}$  denotes the  $K_{th}$  explanatory variable of firm  $i$  in quarter  $\tau$ ; and  $\varepsilon_{i,\tau}$  denotes a random error item.  $\beta_0, \beta_1, \dots, \beta_k$  represent the parameters to be estimated. To calculate the idiosyncratic risk (dependent variables), we use market model and three-factor model (Fama and French, 1993) with taking GARCH effect into consideration, respectively. Our market model and three-factor model with GARCH effect for idiosyncratic risk estimation can be expressed as follows:

$$r_{i,t} = \alpha_i + \beta_i r_{m,t} + e_{i,t}, \quad e_{i,t} | \Phi_{t-1} \sim N(0, h_{i,t}^2) \quad (2)$$

$$r_{i,t} = \alpha_i + \beta_i r_{m,t} + \gamma_i r_{mv,t} + \kappa_i r_{b/v,t} + e_{i,t}, \quad e_{i,t} | \Phi_{t-1} \sim N(0, h_{i,t}^2) \quad (3)$$

$$h_{i,t}^2 = \phi_0 + \phi_1 e_{i,t-1}^2 + \phi_2 h_{i,t-1}^2$$

where  $r_{i,t}$  denotes the excess return for firm  $i$  on day  $t$ ;  $r_{m,t}$  depicts the excess return of the market portfolio on day  $t$ ;  $r_{mv,t}$  represent risk premium factor of size;  $r_{b/v,t}$  represents the risk premium factor of book-to-market value ratio;  $h_{i,t-1}^2$  denotes the idiosyncratic risk for firm  $i$  on day  $t$ , and  $e_{i,t}$  represents the residuals for firm  $i$  on day  $t$ .  $\alpha_i, \beta_i, \gamma_i, \kappa_i$  represent parameters to be estimated;  $\phi_0, \phi_1, \phi_2$  are parameters that are not negative numbers, and  $\phi_0 + \phi_1 < 1$ ;  $\Phi_t$  represents the information set on day  $t$ .

To select the independent and control variables, we follow the work of Lin et al. (2010). For corporate governance mechanisms, we examine the ownership structure, board structure, managerial incentive, and information transparency on the effect of idiosyncratic risk. This study uses institutional ownership (*IOR*) (Claessens and Fan, 2002; Chung, Firth, and Kim, 2002) and outside block holders (*BOR*) (Committee on the Financial Aspects of Corporate Governance, 1992) to proxy for ownership structure.

Institutional ownership is calculated as the ratio of shareholdings of institutional investors, including foreign legal personality ownership (*FOREIGN*), investment trust and consulting ownership (*ITCS*), and the dealer shareholding (*DEALERS*). Outside block holders is the ratio owns by the top 10% of the largest outside shareholders. This study uses managerial ownership (*MOR*) as the proxy variable of the managerial incentive mechanism. We expect these variables to be negatively related with idiosyncratic risk. To proxy board independence, we follow Cheng (2008) in using board composition (*INDR*), which is measured by the number of independent directors on the board scaled by board size. The higher *INDR*, the more independent the board and the better the corporate governance. Thus we expect *INDR* to be negatively related with idiosyncratic risk. This study used timeliness of information (*TIMELINESS*) (Ashbaugh et al., 2006) and disclosure rating as proxy variables of information transparency. We predict that when the information transparency is high, the quality of corporate governance is strong and therefore idiosyncratic risk is low. *TIMELINESS* is calculated as negative one times the squared residual from the following cross-sectional estimation of Ashbaugh et al.'s (2006) model:

$$RET_{i,\tau} = \beta_0 + \beta_1 NIBE_{i,\tau} + \beta_2 LOSS_{i,\tau} + \beta_3 NIBE_{i,\tau} \times LOSS_{i,\tau} + \beta_4 \Delta NIBE_{i,\tau} + \varepsilon_{i,\tau} \quad (4)$$

where  $RET_{i,\tau}$  is the market-adjusted return;  $NIBE_{i,\tau}$  is net income before extraordinary items scaled by beginning of period market value of equity;  $LOSS_{i,\tau}$  is one if NIBE is negative and zero otherwise;  $\Delta NIBE_{i,\tau}$  is the change in net income before extraordinary items scaled by the beginning period equity value. The second proxy variable of information transparency is disclosure assessment (*INF*). To measure the degree of information disclosure, this study use the assessment results of the information disclosure and transparence ranking system provided by the Taiwan Securities and Futures Institute. Furthermore, we use 8 control variables in our model, including firm size ( $LNSIZE_{i,\tau}$ ), market-to-book ratio ( $MTB_{i,\tau}$ ), financial leverage ( $LEV_{i,\tau}$ ), stock turnover ( $TURN_{i,\tau}$ ), capital expenditure ( $CE_{i,\tau}$ ), return on assets ( $ROA_{i,\tau}$ ), non-performing loans ( $NPL_{i,\tau}$ ), and capital adequacy ratio ( $BIS_{i,\tau}$ ).

### 3. Empirical Results

Table 1 presents the descriptive statistics about the variables in our analysis. Each variable is computed on a quarterly basis for each firm. The average (median) idiosyncratic risk computed from market model and three-factor model are 1.6953 (1.6855) and 1.7121 (1.7045), respectively. The percentage of shares held by outside block holders is on average 0.0408. The first quartile and third quartile of *BOR* are 0, implying that outside block holder ratio is generally low. The averages for the institutional investors (*IOR*, *FOREIGN*, *ITCS*, and *DEALERS*) obtained from each firms are 0.1701, 0.1612, 0.0065, and 0.0038 respectively. The result indicates that the percentage of shares held by foreign ownership (*FOREIGN*) is relatively higher than other types of institutional investors (*ITCS*, and *DEALERS*). The proportion of independent directors on the board is 0.1244 on average.

It indicates that financial firms in Taiwan are still operating below 20 percent of independent directors on the board requested by the Securities and Futures Bureau since 2002. The proportion of managerial ownership is also low, 0.25% on average, implying that managers do not hold many shares of the firms. Table 1 reports return on assets is 0.53% on average, indicating that the average performance of the financial institutions in Taiwan from 2006 to 2012 was relatively low.

**Table 1 Descriptive Statistics**

|                       | Average | St. Dev. | Q1      | Median  | Q3      |
|-----------------------|---------|----------|---------|---------|---------|
| $IV_{i,\tau}$         | 1.6953  | 0.2465   | 1.5525  | 1.6855  | 1.8896  |
| $FIV_{ij,\tau}$       | 1.7121  | 0.2634   | 1.5888  | 1.7045  | 1.9108  |
| $BOR_{i,\tau}$        | 0.0408  | 0.0833   | 0.0000  | 0.0000  | 0.0000  |
| $IOR_{i,\tau}$        | 0.1701  | 0.1488   | 0.0332  | 0.1189  | 0.2793  |
| $FOREIGN_{i,\tau}$    | 0.1612  | 0.1521   | 0.0411  | 0.1055  | 0.2753  |
| $ITCS_{i,\tau}$       | 0.0065  | 0.0071   | 0.0005  | 0.0042  | 0.0098  |
| $DEALERS_{i,\tau}$    | 0.0038  | 0.0099   | 0.0000  | 0.0009  | 0.0031  |
| $INDR_{i,\tau}$       | 0.1244  | 0.1001   | 0.0000  | 0.1266  | 0.2000  |
| $MOR_{i,\tau}$        | 0.0025  | 0.0040   | 0.0004  | 0.0015  | 0.0048  |
| $TIMELINESS_{i,\tau}$ | -0.1421 | 0.0555   | -0.1233 | -0.1167 | -0.1132 |
| $INF_{i,\tau}$        | 3.9788  | 0.8221   | 4.0000  | 4.0000  | 4.0000  |
| $LEV_{i,\tau}$        | 0.8121  | 0.1634   | 0.6905  | 0.9091  | 0.9532  |
| $CE_{i,\tau}$         | 0.0252  | 0.0233   | 0.0122  | 0.0171  | 0.0320  |
| $MTB_{i,\tau}$        | 0.0201  | 0.0048   | 0.0082  | 0.0108  | 0.0129  |
| $ROA_{i,\tau}$        | 0.0053  | 0.0133   | 0.0012  | 0.0031  | 0.0080  |
| $LNSIZE_{i,\tau}$     | 24.2555 | 1.3434   | 23.2134 | 24.1279 | 25.4434 |
| $TURN_{i,\tau}$       | 0.0045  | 0.0049   | 0.0011  | 0.0025  | 0.0050  |

Note: Q1 and Q3 represent the first and third quartile, respectively.  $IV_{i,\tau}$  denotes the idiosyncratic risk of firm  $i$  at quarter  $\tau$ .  $BOR_{i,\tau}$ ,  $IOR_{i,\tau}$ ,  $MOR_{i,\tau}$  are the outside block holder ownership, institutional ownership, managerial ownership of firm  $i$  at quarter  $\tau$ , respectively.  $INDR_{i,\tau}$  is the proportion of independent directors on the board of firm  $i$  at quarter  $\tau$ .  $TIMELINESS_{i,\tau}$  is the information timeliness of firm  $i$  at quarter  $\tau$ .  $LNSIZE_{i,\tau}$ ,  $MTB_{i,\tau}$ ,  $LEV_{i,\tau}$ ,  $TURN_{i,\tau}$ ,  $CE_{i,\tau}$  and  $ROA_{i,\tau}$  are all the control variables.

Tables 2 and 3 report our empirical results, where Table 2 uses market model to calculate idiosyncratic risk and Table 3 uses three-factor model to calculate idiosyncratic risk. The empirical results on Table 2 and Table 3 are similar. First, Table 2 shows that coefficient of idiosyncratic risk ( $IV$ ) is significantly positive, indicating idiosyncratic risk is time varying, consistent with our expectation. For corporate governance variables, the results indicate that the coefficient of institutional ownership ( $IOR$ ) is significantly positive, showing that firms with more institutional ownership have larger idiosyncratic risk. The result is consistent with the findings of Switzer and Wang (2013) who find US Commercial banks with higher institutional ownership tend to have higher credit risk. Furthermore, for information transparency, we find that both the coefficients of  $TIMELINESS$  and  $INF$  are significantly negative. The result indicates that firms with high information transparency will have lower idiosyncratic risk. Finally, we find the coefficient of  $INDR$  is significantly negative at 5% significance level, indicating that firms with more independent board tend to will have lower idiosyncratic risk. Our results indicate that stocks with higher turnover ( $TURN$ ) have larger idiosyncratic risk, supporting Hong and Stein's (2001) findings that high stock turnover means that investors have different opinions about the real value stocks, which leads stock returns to be more risky. The results also show that firm size is negatively correlated with idiosyncratic risk, indicating larger firm will have lower idiosyncratic risk. In sum, the results of Tables 2 and 3 demonstrate that the firms with better corporate governance will tend to reduce their idiosyncratic risk.

#### 4. Conclusions

This study comprehensively examines if good internal corporate governance can reduce idiosyncratic risk of the firm. Particularly, we examine the effects of ownership structure, board structure, managerial incentive, and information transparency on idiosyncratic risk. We use the data of Taiwanese financial institutions from 2006:Q1 to 2012:Q4 to examine the effects of corporate governance mechanisms on idiosyncratic risk. Using a dynamic panel data model, the results show that the firms with better corporate governance mechanisms tend to have a lower idiosyncratic risk. Specifically, we find that firms with more independent board and better transparency have lower idiosyncratic risk. However, firms with higher foreign ownership appear to have a higher idiosyncratic risk.

**Table 2 Results of Panel Data Models: Market Model**

| Explanatory variables (expected sign) | Dependent variable  |     |                     |     |
|---------------------------------------|---------------------|-----|---------------------|-----|
|                                       | $IV_{i, \tau+1}$    |     |                     |     |
|                                       | Model 1             |     | Model 2             |     |
| Intercept                             | 3.2832<br>(0.9217)  |     | 3.5423<br>(0.9387)  |     |
| $IV_{i, \tau}$ (+)                    | 2.3341<br>(0.0000)  | *** | 2.5454<br>(0.0000)  | *** |
| $BOR_{i, \tau}$ (-)                   | 0.1121<br>(0.5431)  |     | 0.1221<br>(0.5521)  |     |
| $IOR_{i, \tau}$ (-)                   | 1.2434<br>(0.0011)  | *** |                     |     |
| $FOREIGN_{i, \tau}$                   |                     |     | 0.9987<br>(0.0000)  | *** |
| $ITCS_{i, \tau}$                      |                     |     | -1.2563<br>(0.7676) |     |
| $DEALERS_{i, \tau}$                   |                     |     | -0.8876<br>(0.5521) |     |
| $TIMELINESS_{i, \tau}$ (-)            | -0.0451<br>(0.0185) | **  | -0.0444<br>(0.0178) | **  |
| $INF_{i, \tau}$ (-)                   | -0.3321<br>(0.0703) | *   | -0.3561<br>(0.0773) | *   |
| $INDR_{i, \tau}$ (-)                  | -0.2122<br>(0.0340) | **  | -0.2139<br>(0.0355) | **  |
| $MOR_{i, \tau}$ (-)                   | -4.2541<br>(0.6676) |     | -4.6657<br>(0.6709) |     |
| $LNSIZE_{i, \tau}$ (-)                | -2.1231<br>(0.0000) | *** | -2.1333<br>(0.0000) | *** |
| $MTB_{i, \tau}$ (-)                   | -3.2122<br>(0.5143) |     | -3.3455<br>(0.5298) |     |
| $LEV_{i, \tau}$ (+)                   | 1.1121<br>(0.7671)  |     | 1.1222<br>(0.7688)  |     |
| $TURN_{i, \tau}$ (+)                  | 0.2212<br>(0.0796)  | *   | 0.2393<br>(0.0788)  | *   |
| $CE_{i, \tau}$ (+)                    | 0.8878<br>(0.8522)  |     | 0.8999<br>(0.8437)  |     |
| $ROA_{i, \tau}$ (-)                   | 0.3122<br>(0.4771)  |     | 0.3102<br>(0.4777)  |     |
| Time dummy variables                  | Yes                 |     | Yes                 |     |
| Industry dummy variables              | Yes                 |     | Yes                 |     |
| Adj. R <sup>2</sup>                   | 0.2208              |     | 0.2332              |     |
| Sargan Test                           | 18.2119<br>(0.3229) |     | 19.4531<br>(0.3131) |     |

Note:  $IV_{i, \tau}$  is the idiosyncratic risk of market model for firm  $i$  at quarter  $\tau$ . The definitions of other variables are defined in section 2. The p-value is in bracket. \*\*\*, \*\*, and \* significant at the 1%, 5%, and 10% levels, respectively.

Table 3 Results of Panel Data Models: Three-factor Model

| Explanatory variables (expected sign) | Dependent variable  |     |                     |     |
|---------------------------------------|---------------------|-----|---------------------|-----|
|                                       | $FIV_{i,\tau+1}$    |     |                     |     |
|                                       | Model 1             |     | Model 2             |     |
| Intercept                             | 2.9877<br>(0.3565)  |     | 2.9889<br>(0.3566)  |     |
| $FIV_{i,\tau}$ (+)                    | 3.8901<br>(0.0000)  | *** | 3.8999<br>(0.0000)  | *** |
| $BOR_{i,\tau}$ (-)                    | 0.2221<br>(0.3331)  |     | 0.2233<br>(0.3333)  |     |
| $IOR_{i,\tau}$ (-)                    | 1.9871<br>(0.0031)  | *** |                     |     |
| $FOREIGN_{i,\tau}$                    |                     |     | 0.9987<br>(0.0000)  | *** |
| $ITCS_{i,\tau}$                       |                     |     | -1.2563<br>(0.7676) |     |
| $DEALERS_{i,\tau}$                    |                     |     | -0.8876<br>(0.5521) |     |
| $TIMELINESS_{i,\tau}$ (-)             | -0.1111<br>(0.0085) | *** | -0.1231<br>(0.0088) | *** |
| $INF_{i,\tau}$ (-)                    | -0.5432<br>(0.0431) | **  | -0.5569<br>(0.0448) | **  |
| $INDR_{i,\tau}$ (-)                   | -0.3321<br>(0.0255) | **  | -0.3354<br>(0.0255) | **  |
| $MOR_{i,\tau}$ (-)                    | -3.9908<br>(0.4444) |     | -3.9967<br>(0.4434) |     |
| $LNSIZE_{i,\tau}$ (-)                 | -2.2221<br>(0.0000) | *** | -2.2891<br>(0.0000) | *** |
| $MTB_{i,\tau}$ (-)                    | -3.4535<br>(0.4989) |     | -3.5643<br>(0.5001) |     |
| $LEV_{i,\tau}$ (+)                    | 1.1321<br>(0.5998)  |     | 1.1443<br>(0.5988)  |     |
| $TURN_{i,\tau}$ (+)                   | 0.4509<br>(0.0888)  | *   | 0.4565<br>(0.0889)  | *   |
| $CE_{i,\tau}$ (+)                     | 0.8779<br>(0.7677)  |     | 0.8760<br>(0.7543)  |     |
| $ROA_{i,\tau}$ (-)                    | 0.4454<br>(0.3339)  |     | 0.4631<br>(0.3341)  |     |
| Time dummy variables                  | Yes                 |     | Yes                 |     |
| Industry dummy variables              | Yes                 |     | Yes                 |     |
| Adj. $R^2$                            | 0.3001              |     | 0.3021              |     |
| Sargan Test                           | 18.9978<br>(0.3209) |     | 19.5678<br>(0.3087) |     |

Note:  $FIV_{i,\tau}$  is the idiosyncratic risk of three factors model for firm  $i$  at quarter  $\tau$ . The definitions of other variables are defined in section 2. The p-value is in bracket. \*\*\*, \*\*, and \* significant at the 1%, 5%, and 10% levels, respectively.

## References

- Agrawal, A., and Knoeber, C.R., 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31, 377–397.
- Ammann, M., Oesch, D., and Schmid, M.M., 2011. Corporate governance and firm value: International evidence. *Journal of Empirical Finance*, 18, 36–55.
- Ashbaugh, H., Collins, D.W., and LaFond, R., 2006. Corporate governance and the cost of Equity Capital. *Working paper*, University of Wisconsin.
- Ashbaugh, H., Collins, D.W., and LaFond, R., 2006. The effects of corporate governance on firms' credit ratings. *Journal of Accounting and Economics*, 42(1-2), 203-243.
- Bae, K.H., Lim, C. L., and Wei, K.C., 2006. Corporate governance and conditional skewness in the world's stock markets. *Journal of Business*, 79(6), 2999-3028.
- Bai, C.E., Liu, Q., Lu, J., Song, F.M., Zhang, and J., 2004. Corporate governance and market valuation in China. *Journal of Comparative Economics*, 32(4), 599-616.
- Bloomfield, R.J., and Wilks, T.J., 2000. Disclosure effects in the laboratory: Liquidity, depth, and the cost of capital. *Accounting Review*, 75(1), 13-41.
- Bushman and Smith, 2001. Financial accounting information and corporate governance. *Journal of Accounting and Economics*, 32(3), 237-333.
- Cebenoyan, A. S., Cooperman, E. S., and Register, C. A., 1995. Deregulation, reregulation, equity ownership, and S&L risk-taking. *Financial Management*, 24(3), 63-76.
- Cheng, S., 2008. Board size and the variability of corporate performance. *Journal of Financial Economics*, 87, 157–176.
- Chung, R., Firth, M., and Kim, J., 2002. Institutional monitoring and opportunistic earnings management. *Journal of Corporate Finance*, 8, 29–48.
- Claessens, S., Djankov, S., Fan, J., and Lang, L., 2000. The separation of ownership and control in East Asian corporations. *Journal of Financial Economics*, 58, 81–112.
- Cremers, K.J., and Nair, V.B., 2005. Governance mechanisms and equity prices. *Journal of Finance*, 60, 2859–2894.
- De Bettignies, J.-E., Baggs, J., 2005. Product Market Competition and Agency Cost, Working Paper. *University of British Columbia*.
- Drobtz, W., Schillhofer, A., and Zimmermann, H., 2004. Corporate governance and expected stock return: Evidence from Germany. *European Financial Management*, 10, 267–293.
- Erkens, D.H., Hung, M., and Matos, P., 2012. Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, 18, 389–411.
- Fama, E. F., 1980. Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288-307.
- Fama, E. F., and Jensen, M. C., 1983. Separation of ownership and control. *The Journal of Law & Economics*, 26, 301-325.
- Fama, E. F., and French, K. R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33, 3-56.
- Ferreira, M.A. and Laxu, P.A., 2007. Corporate governance, idiosyncratic risk, and information flow. *Journal of Finance*, 62: 951-990.
- Flannery, M. J. and Hankins, K. W., 2013. Estimating dynamic panel models in corporate finance, *Journal of Corporate Finance*, 19, 1-19.
- Gadhoun, Y., and Ayadi, M.A., 2003. Ownership structure and risk: A Canadian empirical analysis. *Quarterly Journal of Business and Economics*, 42, 19–39.
- Gaspar, J. M., and M. Massa, 2006. Idiosyncratic risk and product market competition, *Journal of Business*, 79(6), 3125-3152.
- Ge, W., Kim, J., and Song, B.Y., 2012. Internal governance, legal institutions and bank loan contracting around the world. *Journal of Corporate Finance*, 18, 413–432.
- Gompers, P., Ishii, J., and Metrick, A., 2003. Corporate governance and equity prices. *Quarterly Journal of Economics*, 118, 107–155.

- Gorton, G., and Kahl, M. Block holder Identity, Equity ownership structures and hostile takeovers. NBER working paper number 7123, 1999.
- Goyal, V. K. and Park, C. W., 2002. Board leadership structure and CEO turnover. *Journal of Corporate Finance*, 8, 49-66.
- Henry, D., 2010. Agency costs, ownership structure and corporate governance compliance: A private contracting perspective. *Pacific-Basin Finance Journal*, 18, 24–46.
- Hausman, J. A., 1978. Specification tests in Econometrics, *Econometrica*, 46(6), 1251-1271.
- Himmelberg, C.P., R.G. Hubbard, and, D. Palia, 1999. Understanding the determinants of managerial ownership and the link between ownership and performance, *Journal of Financial Economics*, 53(3), 353-384.
- Jagannathan, R., and Srinivasan, S. B., 2000. Does product market competition reduce Agency costs? Working paper 7480, National Bureau of Economic Research, Cambridge, MA.
- Jensen, M. C., and Ruback, R. S., 1983. The Market for Corporate Control: The Scientific Evidence. *Journal of Financial Economics*, 11, 5-50.
- Jensen, M.C. and meckling, W.H., 1976. Theory of the Firms: Managerial Behavior, Agency Cost, and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jiambalvo, J., S. Rajgopal, and M. Venkatachalam. 2002. Institutional ownership and the extent to which stock prices reflect future earnings. *Contemporary Accounting Research*, 19(1), 117-145.
- Jin, L., Myers, S.C., 2006. R<sup>2</sup> around the world: new theory and new tests. *Journal of Financial Economics* 79, 257–292.
- La Porta, Rafael, Lopez de Silanes, Florencio, A. Shleifer, and Vishny, R.W., 2002. Investor protection and corporate valuation. *Journal of Finance*, 57(3), 1147-1170.
- Laeven, L., and Levine, R., 2009. Bank governance, regulation and risk taking. *Journal of Financial Economics*, 93, 259–275.
- Lin, C.H, Chen, H.M., Wang, L.H., 2010. The effects of corporate governance on idiosyncratic risk. *Journal of Management*, 27(5), 409-435. (In Chinese)
- Morck, R., Shleifer, A., and Vishny, R.W., 1988. Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20(1), 293- 315.
- Nguyen, P., 2011. Corporate governance and risk-taking: Evidence from Japanese firms. *Pacific-Basin Finance Journal*, 19, 278–297.
- Pound, J., 1988. Proxy Contests and the Efficiency of Shareholders Oversight. *Journal of Financial Economics*, 20, 237-265.
- Saunders, A., Strock, E., and Travlos, N. G., 1990. Ownership structure, deregulation and bank risk taking. *The Journal of Finance*, 45(2), 643- 654.
- Saunders, W., Rowan-Robinson, M., Lawrence, A., Efstathiou, G., Kaiser, N., et al. 1990. *MNRAS*, 242, 318-37
- Shleifer, A. and Vishny, R., 1997. A survey of corporate governance. *Journal of Finance*, 52, 737-775.
- Shleifer, A. and Vishny, R., 1986. Large shareholders and corporate control, *Journal of Political Economy*, 94(3), 461-488.
- Switzer, L.N., and Wang, J., 2013. Default risk estimation, bank credit risk, and corporate governance, *Financial Markets, Institutions and Instruments*, 22(2), 91-112.
- Wright, P., Ferris, S.P., Sarin, A., and Awasthi, V., 1996. Impact of corporate insider, blockholder, and institutional equity ownership on firm risk-taking. *Academy of Management Journal*, 39, 441–463.