

Tran Nam Hoai; Chi Dat Le

Article

Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms

Cogent Economics & Finance

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Tran Nam Hoai; Chi Dat Le (2020) : Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms, Cogent Economics & Finance, ISSN 2332-2039, Taylor & Francis, Abingdon, Vol. 8, Iss. 1, pp. 1-41, <https://doi.org/10.1080/23322039.2020.1732640>

This Version is available at:

<https://hdl.handle.net/10419/245286>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>



Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms

Nam Hoai Tran & Chi Dat Le |

To cite this article: Nam Hoai Tran & Chi Dat Le | (2020) Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms, Cogent Economics & Finance, 8:1, 1732640, DOI: [10.1080/23322039.2020.1732640](https://doi.org/10.1080/23322039.2020.1732640)

To link to this article: <https://doi.org/10.1080/23322039.2020.1732640>



© 2020 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 02 Mar 2020.



Submit your article to this journal [↗](#)



Article views: 1599



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 9 View citing articles [↗](#)



Received: 25 August 2019
Accepted: 15 February 2020

*Corresponding author: Nam Hoai Tran, School of Finance, University of Economics Ho Chi Minh City, Ho Chi Minh City, Vietnam.
E-mail: tranhocinam.ueh@gmail.com

Reviewing editor:
David McMillan, University of Stirling, UK

Additional information is available at the end of the article

FINANCIAL ECONOMICS | RESEARCH ARTICLE

Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms

Nam Hoai Tran^{1*} and Chi Dat Le¹

Abstract: This study examines the associations of corporate governance with firm risk-taking and performance in a typical frontier equity market characterized by high ownership concentration and weak investor protection. Using an extensive sample of Vietnamese listed firms, we find (1) no relation between ownership concentration and firm profitability, but a non-linear relation between ownership concentration and firm valuation; and (2) that concentrated ownership increases the riskiness of accounting performance; however, there is no evidence of the linkage between concentration and the riskiness of market performance. Ultimately, our findings confirm essential differences in using the two alternatives of performance measurement.

Subjects: Corporate Finance; Investment & Securities; Risk Management; Corporate Governance

ABOUT THE AUTHORS

Nam Hoai Tran is a Lecturer at the School of Finance of the University of Economics Ho Chi Minh City, Vietnam. His research interests are corporate governance and empirical/behavioural finance in emerging markets as well as financial economics in general. His research work has been published in several academic journals. He has served as a reviewer for *International Journal of Finance & Economics*, *Emerging Markets Finance and Trade*, *Post-Communist Economies*, *Cogent Economics & Finance* and *Asian Journal of Business and Accounting*.

Chi Dat Le received his PhD in Finance from the University of Economics Ho Chi Minh City in 2010. He specializes in corporate finance, financial investment, and behavioural finance. He has published numerous research papers in well-reputed journals including *Global Business Review*, *Pacific Accounting Review*, *Afro-Asian Journal of Finance and Accounting* and *International Journal of Business and Emerging Markets*. He is currently the Deputy Dean of the School of Finance of the University of Economics Ho Chi Minh City.

PUBLIC INTEREST STATEMENT

Ownership concentration is regarded as a firm-level governance mechanism of paramount importance in economies with under-developed institutional infrastructure. The unexplored landscape of frontier emerging markets serves as a promising avenue of research. This study specifically investigates performance/risk-taking consequences of the governance practice in the Vietnamese context. The findings which are obtained from distinguishing between the accounting- and market-based measures of performance (i.e., profitability and valuation) have critical implications for corporate governance and investment consideration. In markets with weak investor protection, private benefits motivate dominant/controlling shareholders to drive management decisions toward risk-taking activities at the expense of minority investors. The riskiness of profit rates is realized by market investors and thus reflected in stock prices. Blockholder intervention in management may produce benefits of monitoring effectiveness that offset the cost of minority shareholder expropriation. This benefit-cost tradeoff could be a source of the non-linear valuation behavior across the spectrum of concentrated ownership.

Keywords: corporate governance; ownership structure; firm performance; risk-taking; Vietnam

1. Introduction

Does ownership concentration affect corporate performance? This is a central question in scholarly debates that are anchored to the monumental work of Berle and Means (1932), who posit that more dispersed ownership can lower firm performance as a consequence of an increased interest misalignment between managers and shareholders. In line with the view of Berle and Means, some theoretical analyses suggest the hypothesis that attributes the positive concentration–performance relation to reducing agency costs through the effectiveness of monitoring management (Claessens & Djankov, 1999; McConnell & Servaes, 1990; Shleifer & Vishny, 1986). However, other studies complicate the relationship by stressing negative effects based on their hypotheses of entrenchment and expropriation (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000; Morck, Shleifer, & Vishny, 1988; Shleifer & Vishny, 1997). The complexity is manifest in the diversity of empirical evidence. Apparently, non-monotonic relations are detected mostly among studies: an inverted u-shaped (concave) curve (e.g., Balsmeier & Czarnitzki, 2017; Holderness, Kroszner, & Sheehan, 1999; McConnell & Servaes, 1990; Thomsen & Pedersen, 2000), or an inverted u-shaped curve extended with an upward trend (e.g., Gugler, Mueller, & Yurtoglu, 2004; Hermalin & Weisbach, 1988; Morck et al., 1988; Short & Keasey, 1999), or even a convex (u-shaped) curve (e.g., Hu & Izumida, 2008).¹ Such evidence is interpreted as the result of a tradeoff between the monitoring and entrenchment/expropriation effects.

A strand of research that strongly challenges the argument of Berle and Means is purportedly led by Demsetz (1983), who argues that asserting the ownership–performance relationship could be misplaced because of the essentially endogenous formation of ownership structure. According to the reasoning of Demsetz, a firm’s ownership structure should be treated as an endogenous outcome of the profit-maximizing process that results in an equilibrium state of the firm’s organization. As a result, Demsetz predicts that there is no systematic relation between changes in structure ownership and changes in firm performance. This prediction is empirically evidenced by Demsetz and Lehn (1985) who find no positive relation between ownership concentration and firm profitability for their U.S. sample. To some extent, several studies using the market valuation as a measure of firm performance also show a similar U.S. finding (e.g., Demsetz & Villalonga, 2001; Himmelberg, Hubbard, & Palia, 1999; Morck et al., 1988). Using both accounting- and market-based measures of performance, Chen, Cheung, Stouraitis, and Wong (2005) affirm the irrelevance of (family) ownership concentration to firm performance in Hong Kong.

One of important channels via which ownership concentration affects firm performance is firm risk-taking behavior related to investment choices. The argument is that ownership concentration reflects the level of investor protection which leads to different consequences of firms’ risk-taking orientation in investment decisions and thus different impacts on firm growth. Presumably recognizing the value-enhancing orientation of risk-taking, a growing strand of research has delved into determinants of risk-taking. Conceivably, researchers are inclined to the question of whether ownership concentration drives risk-taking. Theoretical commentators that look into the essentials of the relationship between ownership structure and firm performance pin their analyses on firm riskiness choices in investment decisions (John, Litov, & Yeung, 2008; Shleifer & Vishny, 1997; Wright, Ferris, Sarin, & Awasthi, 1996). In other words, they consider risk-taking behavior as a mechanism that shapes the ownership–performance relationship. As theories conjecture that ownership concentration can increase or reduce risk-taking activities, there is no surprise that empirical studies show mixed evidence.²

It is the fact that the associations of ownership concentration with risk-taking and with performance are investigated discretely. Not many examine contemporaneously both connections in a same framework. For a sample of U.S. firms, John et al. (2008) examine the relationships between ownership concentration and risk-taking, and between risk-taking and firm growth. However, their firm growth measures (i.e., asset growth and sales growth) do not reflect firm profitability. Nguyen (2011) examines the connection between firm risk and performance (i.e., ROA or Tobin's Q) in addition to his main investigation on the relationship between ownership concentration and risk-taking for Japanese firms. To the best of our knowledge, there has been no study that directly validates the concentration–performance relationship by examining the influence of concentration on risk-taking behavior linked to performance. We decide to explore such a risk-taking channel in the context of a frontier emerging market by using a linking technique that is employed by Adams, Almeida, and Ferreira (2005), Nguyen (2012), and Boubaker, Nguyen, and Rouatbi (2016), who use the Glejser heteroskedasticity test to extract risk-taking measures from performance regressions and then probe the linkages between their variables of interest and these risk-taking measures.

As empirical research tends to prefer a market-based measure of performance like Q to an accounting-based one like ROA, Demsetz and Villalonga (2001) raise the necessity of considering both measures concurrently.³ In accordance with this implementation, studies tend to support the view of Demsetz (1983) (e.g, Chen et al., 2005; Demsetz & Villalonga, 2001). Nevertheless, the existence of mixed empirical results, especially non-monotonic evidence, from using the market-based measure such as Q should garner more attention of researchers with respect to the distinctive natures of this measure as pointed out by Demsetz and Villalonga (2001). Unfortunately, the question whether there is an empirical difference in defining the concentration–performance relationship by using the two different measures of performance has been neglected by researchers. Our study addresses this question by looking into the context of a typical frontier capital market. We believe that emerging capital markets where market imperfections such as information asymmetries exacerbate the market investors' capability of firm valuation is a good candidate for testing for potentially divergent results from these two measures. In other words, the divergence if any in results from the two measures should emanate from the failure of market investors in realizing true performance.⁴

This study aims to achieve three main objectives. First, we investigate the impact of ownership concentration on firm performance in a frontier emerging market. Second, the effect of ownership concentration on performance-linked risk-taking activity is examined in order to check for the presence of a risk-taking channel of the concentration–performance relationship. Third, we inspect such empirical results with respect to the two measures of performance, in the context of an imperfect capital market, which can affirm whether there exists a difference in empirical outcomes as a consequence of different sources in the measurement of firm performance. We use a sample of publicly listed firms in Vietnam to address the three objectives.⁵ The first reason is that Vietnam has an under-developed, weak national governance system (Le & Walker, 2008; Nguyen, Locke, & Reddy, 2015), and Vietnamese firms are characterized by having highly concentrated ownership. In such an institutional environment, especially with poor investor protection rights, ownership concentration can serve as a corporate governance mechanism that can potentially affect firm-level risk-taking activity and performance. Another reason is that its government's massive privatization scheme since 1986 (i.e., under the implementation of the “Doi Moi” policy) has changed significantly ownership structure in Vietnamese enterprises. Coupled with its recent reforms in corporate governance practices, the listed equity market of Vietnam which is available since 2000 constitutes an interesting venue for governance research. Moreover, Vietnam's economy is at an earlier stage

of financial development with an “emerging” emerging capital market. Serious imperfections like information asymmetries make the Vietnamese market an excellent candidate for distinguishing the effects of ownership concentration on accounting- and market-based measures of risk-taking/performance.

This study starts by delving into the relationship between ownership structure and firm performance in Vietnam. Specifically, we find a (seemingly u-shaped) non-linear relation between ownership concentration and firm valuation (market-based measure of performance). Our robust estimations support the evidenced linkage between ownership structure and firm performance in under-developed markets (e.g., Boubakri, Cosset, & Guedhami, 2005; Nguyen et al., 2015). On the other side, our results do not show a significant relation between ownership concentration and firm profitability (market-based measure of performance), advocating the argument about an endogenous structure of ownership (e.g., Chen et al., 2005; Demsetz & Lehn, 1985).

Intensively, we examine the risk-taking nature of the concentration–performance relationship in order to determine whether firm risk-taking activities shape the relationship. By measuring risk-taking behavior as unexpected volatility in market performance, we find no evidence of the connection between ownership concentration and corporate risk-taking incentives, implying that concentration might affect firm valuation through other channels rather risk-taking one. Nevertheless, using unexpected volatility in (and z-values based on) accounting performance as a measure of risk-taking does specify a positive relation. With no a direct concentration–profitability relationship to be shaped, this risk-taking effect may be regarded as an indirect channel of the impact of ownership concentration on firm profitability.

Ultimately, our results from this study provide country-specific empirical evidence of the associations of corporate governance with firm risk-taking and performance in frontier markets—a neglected sector of existing governance research where is characterized by highly concentrated ownership and weak investor protection rights. This is the first paper simultaneously investigating the relationship between corporate governance and performance and its risk-taking mechanism in a linking approach. This study also demonstrates, specifically in imperfect capital markets, the empirical effects of ownership concentration on performance/risk-taking are susceptible to using alternative measures of performance, that is, using operational profitability or market valuation. Furthermore, our study contributes a new analytical framework of the nexus between ownership concentration and firm performance/risk-taking as well as an in-depth econometric approach to testing for the specific specifications toward the extant literature of corporate governance.⁶ As corporate governance researchers should pay their greater attention to the endogeneity nature and structural dynamics of the governance–performance/risk-taking relation, our approach is able to provide a technical path.

The remainder of the paper is organized as follows. Section 2 shows why the research sample is selected and how data are obtained. Section 3 describes the research methodology. Empirical results are presented and discussed in Section 4. Section 5 concludes with some remarks.

2. Sample and data

2.1. Sample selection

In sum, we use a sample of Vietnamese firms to investigate the nexus between ownership concentration, firm performance and risk-taking for several reasons. First, Vietnamese enterprises have a highly concentrated structure of ownership, and such concentration under an under-developed, weak

national governance system like Vietnam's one can serve as a corporate governance mechanism (Nguyen et al., 2015) that can potentially affect corporate risk-taking activity and performance. Second, ownership structure in Vietnamese companies has changed significantly since the initiation of massive privatization program as a part of the 1986 economic reform (World Bank, 2013). Consequences of this process, which is also known as "equitization", can be observed in the immature listed equity market of Vietnam (available since 2000). Specifically, improvements in the legal and regulatory framework, especially the 2007 issuance and the 2012 revision of corporate governance regulations, that strengthen investor protection have strongly increased the dynamics of corporate ownership for listed companies. Third, the Vietnamese capital market with its serious imperfections serves as an excellent candidate for distinguishing the effects of ownership concentration on accounting- and market-based measures of risk-taking/performance. In fact, it is shown that Tobin's *Q*, a market-based measure of performance, is a poor proxy for investment opportunities in imperfect conditions of the Vietnamese capital market (Tran & Le, 2017).

2.2. Data source and sampling

We aim to study firms that publicly listed on Vietnamese equity market, both the Ho Chi Minh Stock Exchange (HSX) and the Hanoi Stock Exchange (HNX). Information on firms' annual financial statements and historical data for equity price and outstanding number of shares are extracted from *Thomson Reuters* database. Ownership data and management/board profiles are sourced from Tai Viet Corporation (*Vietstock*), the leading financial information service provider in Vietnam. Financial institutions, including banks, securities, and insurance companies, are excluded from the sample.

Our final sample for estimating specific specifications is established as an unbalanced panel without gaps—in which usable firms are ones that have (1) consecutive observations available in at least four latest years 2012–2015, and (2) no missing or incomplete data for calculating variables. Specifically, merging *Vietstock* datasets with *Thomson Reuters* datasets and keeping only firms that meet the two filtering criteria result in a maximum sample of 502 non-financial firms. Depending on which of dependent variables is used to measure firm performance in established specifications, different subsamples are employed. A subsample of 502 firms (3136 firm-year observations) is available to investigate the relationship between ownership concentration and firm profitability (ROA). Once Tobin's *Q* is used as a dependent variable, 480 firms (2980 firm-year observations) are left to examining the association of ownership concentration with firm valuation. As shown in Table 1, this *non-financial* sample represents over 70% of all (*financial and non-financial*) firms listed on the market during the period from 2012 to 2015.

We further apply winsorization technique to reducing the effect of serious outliers across all specified analyses. Measures of firm performance (ROA and *Q*) and accounting variables including financial leverage, capital expenditure, and tangibility are winsorized at the 0.5% level on both sides (i.e., at the 0.5% and 99.5% percentiles) of the sample distribution. As sales growth has a largely right-skewed distribution, we winsorize at the bottom 0.5% and at the top 5% of this variable's distribution. The other accounting variables in logarithmic form, firm size (logarithm of total assets) and age (logarithm of [the number of listing years plus 1]), are not winsorized because the logarithmic transformation already helps alleviate potential impacts by outliers.

3. Methodology

Primarily, ownership concentration is measured as the accumulated percentage of shareholdings by all large investors, *Blockholding*. In Vietnam, large investors are categorized as shareholders owning at least 5% of a firm's outstanding shares whose shareholding information must be reported according to the disclosure requirements by State Securities Commission (SSC) of Vietnam.

Table 1. Vietnamese equity market: number of listed firms

End of year	2000	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15
HSX	5	11	20	22	26	32	106	138	170	196	275	301	307	301	310	307
HNX						9	87	112	168	257	367	393	396	377	365	377
Market scale	5	11	20	22	26	41	193	250	338	453	642	694	703	678	675	684
(Non-financial) "accounting" sample from Thomson Reuters									153	211	367	469	525	525	525	525
% Market scale									45	47	57	68	75	77	78	77
(Non-financial) final sample matching Thomson Reuters with Vietstock									141	197	346	444	502	502	502	502
% Market scale									42	43	54	64	71	74	74	73
Block ownership (%) in each firm—on average									48.2	47.5	46.9	48.3	49.0	50.1	50.6	51.1

We use two measures of firm performance. The first is one accounting-based measure of profitability, *return on assets* (ROA), which is defined as earnings before interest and taxes (EBIT) during a year to total assets at the beginning of the year. The second is one measure of firm valuation reflecting market expectations, Tobin's Q, which is proxied by the market-to-book value of total assets at the end of the year.

Specifically, we estimate the impact of ownership concentration on firm performance by the following regression:

$$\begin{aligned} \text{Firm performance}_{it} = & \beta_0 + \beta_1 \text{Ownership concentration}_{it} + \beta_2 \text{Control variables}_{it} \\ & + \beta_3 \text{Industry}_i + \beta_4 \text{Year}_t + e_{it} \end{aligned} \quad (1)$$

Consistent with Adams et al. (2005), Nguyen (2012), Faccio, Marchica, and Mura (2011, 2016) and Boubaker et al. (2016), we use firm-specific *Control variables* which are widely recognized in the prevailing literature, including *Firm size*, the natural logarithm of total assets; *Leverage*, the financial leverage measured by the ratio of total debt to total assets; current and lagged values of ROA, the ratio of EBIT to total assets; *Capex*, capital expenditures divided by sales; *Age*, (the natural logarithm of one plus) the number of years since the date of listing; *Tangibility*, the ratio of fixed to total assets; *Sales growth*, another proxy for growth opportunities measured by the yearly growth rate in sales⁷; and *Industry* and *Year* denote vectors of industry and year dummies, respectively. Note that, when ROA is used as *Firm performance*, the current and lagged values of ROA are excluded from *Control variables*. Also, when testing for the non-linear relationship between ownership concentration and performance, the square of *Blockholding*, Blockholding^2 , is employed in addition to *Blockholding*.

The extant literature on corporate governance also documents board composition as significant governance determinants of firm performance (see Wintoki, Linck, & Netter, 2012). For isolating their effects on firm performance from ownership concentration's effect, we add governance-related control variables, board characteristics, including *CEO duality*, a dummy variable equal to 1 if the chairman and the chief executive officer (CEO) is the same person, and zero otherwise; *Board size*, the number of directors on the firm's board; *Board independence*, the proportion of outside (non-executive) directors on the board; and *Gender diversity*, the proportion of female directors on the board.

Similar to the approach by Adams et al. (2005), Nguyen (2012) and Boubaker et al. (2016), firm risk-taking is proxied by the absolute deviation of firm performance from its expected value, which is obtained by the procedure known as the Glejser heteroskedasticity test. In particular, the Glejser-type tests are implemented by two steps. The first step is exactly to estimate the specification of performance determinants, Equation (1), with ordinary least squares (OLS) and get the sample residuals \widehat{e}_{it} . The absolute values of \widehat{e}_{it} are risk-taking measures of interest relative to alternative measures of performance, ROA and Q. The idea of measuring risk-taking behaviors by the residuals of performance regressions technically implies that the riskiness of performance links with unanticipated variations (unpredictability) in performance. Inevitably, this approach satisfies the premise that firm performance is affected by risk-taking behavior which is the nature of the governance-performance relationship.

The second step of the Glejser tests is the one we utilize to detect the effect of ownership concentration on firm risk taking. This requires running specific regressions on obtained measures of risk-taking, $|\widehat{e}_{it}|$:

$$\begin{aligned} \text{Firm risk - taking}_{it} \equiv |\widehat{e}_{it}| = & \beta_0 + \beta_1 \text{Ownership concentration}_{it} + \beta_2 \text{Control variables}_{it} \\ & + \beta_3 \text{Industry}_i + \beta_4 \text{Year}_t + u_{it} \end{aligned} \quad (2)$$

Following the Glejser approach above-mentioned, control variables used in the specification of firm risk-taking, Equation (2), are the same as in the specification of performance, Equation (1). For this study's objectives, Equations (1) and (2) are just stylized models to detect the influence of ownership concentration on firm performance and risk-taking, respectively. In the initial identification of the relations for the static data panel, we use OLS regressions with cluster effects at the firm level rather than with fixed firm effects.⁸ The reason is that ownership structure tends to change slowly over time, and thus the impact of ownership differentials on performance and risk-taking, if it actually exists, may not be found by the fixed effects estimator (Adams et al., 2005; Boubaker et al., 2016; Zhou, 2001). For the sake of comparison, we also report estimated results using fixed effects regression.

Previous research indicates that endogeneity is a serious issue about which scholars should be cautious in studying the association of corporate governance mechanisms with performance (Coles, Lemmon, & Meschke, 2012; Schultz, Tan, & Walsh, 2010; Wintoki et al., 2012) and risk-taking (Boubaker et al., 2016; Coles, Daniel, & Naveen, 2006; John et al., 2008; Koerniadi, Krishnamurti, & Tourani-Rad, 2014; Nguyen, 2011). Specifically, Wintoki et al. (2012) categorize three likely sources of endogeneity in the governance–performance relation, namely unobserved heterogeneity, simultaneity and dynamic endogeneity. As an intermediate channel of governance–performance linkage, the relationship between governance and risk-taking could also be tainted by such potential sources of endogeneity. In the process of detecting the governing determinants of firm performance and risk-taking in Equations (1) and (2), we additionally report robust estimates using Blundell and Bond (1998) system generalized method of moments (GMM). The system GMM can deal with all three sources of endogeneity in the dynamic panel approach (i.e., Equations (1) and (2) include one lagged dependent variable as an explanatory variable.) For the sake of comparison, we also report estimated results from a dynamic panel approach for pooled OLS estimations (with cluster effects at the firm level) although these estimates may be inconsistent due to potential endogeneity issues (Wintoki et al., 2012).

4. Empirical results

4.1. Descriptive statistics

Table 2 provides descriptive statistics for our sampled data. Regarding measures of performance, ROA has a mean of 9% with a standard deviation of 9%, and Q has a mean of 0.93 with a standard deviation of 0.31. Absolute deviations from expected ROA and Q, which measure firm risk-taking, are 6% and 0.16, respectively. Total equity fraction held by large shareholders who own at least 5% of a firm's outstanding shares is 49% on average. It is observable that ownership concentration in Vietnamese listed firms is relatively high. That is, 50% of observations of combined block ownership range from 0.36% (1st quartile) to 61% (3rd quartile). The maximum value of blockholding observed in our sample is 99%.

As regards board composition, the situation that a firm's CEO and board chairman is the same person accounts for 35% of all observed cases. For Vietnamese listed firms, average number of directors on the board is 5.5 with the minimum of 3 and the maximum of 11. Among these directors, independent non-executive directors represent 59% of board membership, implying an average of about 3 independent directors on the board. On average, the proportion of female directors is 14%, which indicates a women's under-representation in the board structure of Vietnamese firms.

The remaining statistics in Table 2 are for firm characteristics. It is shown that, on average, the financial debt ratio is 33%, the ratio of capital expenditures over sales is 9%, the tangibility assets ratio is 26%, and annual sales growth rate is 13%. Vietnamese publicly listed firms exhibit a mean total

Table 2. Descriptive statistics

	Obs. (Firm-years)	Mean	Std. Dev.	Min	Percentile 25%	Median	Percentile 75%	Max
<i>Measures of firm performance</i>								
ROA	3136	0.09	0.09	-0.16	0.03	0.08	0.13	0.50
Q	2980	0.93	0.31	0.32	0.77	0.89	1.01	2.66
<i>Measures of firm risk-taking</i>								
e _{ROA}	3136	0.06	0.05	0.00	0.02	0.04	0.08	0.40
e _Q	2500	0.16	0.19	0.00	0.05	0.11	0.20	2.03
<i>Corporate governance variables</i>								
Blockholding	3136	0.49	0.19	0.05	0.36	0.51	0.61	0.99
CEO duality	3136	0.35	0.48	0.00	0.00	0.00	1.00	1.00
Board size (no. of directors)	3136	5.45	1.07	3.00	5.00	5.00	6.00	11.00
Board size (ln)	3136	1.68	0.18	1.10	1.61	1.61	1.79	2.40
Board independence	3136	0.59	0.20	0.00	0.40	0.60	0.80	1.00
Gender diversity	3136	0.14	0.16	0.00	0.00	0.14	0.20	0.80
<i>Firm characteristics</i>								
Leverage	3136	0.33	0.25	0.00	0.08	0.33	0.55	0.86
Firm size (total assets in billion dong)	3136	1694.77	5502.12	12.15	198.29	451.45	1290.34	145,553.99
Firm size (ln)	3136	13.12	1.46	9.40	12.20	13.02	14.07	18.80
Capex	3136	0.09	0.23	0.00	0.01	0.02	0.07	2.09
Age ([no. of years from the IPO year] + 1)	3136	5.28	2.70	1.00	3.00	5.00	7.00	16.00
Age (ln)	3136	1.74	0.47	0.69	1.39	1.79	2.08	2.83
Tangibility	3136	0.26	0.21	0.00	0.09	0.20	0.36	0.92
Sales growth	3136	0.13	0.35	-0.88	-0.06	0.10	0.27	0.98

assets value of 1,700 billion dong, witnessing a maximum of 145,500 billion dong. With a mean age of 4.3 years, Vietnamese firms are quite young in terms of the number of years from the IPO year.

A correlation matrix for all variables is presented in Table 3. There is no seriously large correlation between explanatory variables. The largest correlation coefficients are between firm size and leverage (0.43), CEO duality and board independence (-0.34), tangibility and capital expenditures (0.30). The correlation between the two measures of performance, profitability and valuation, is 0.37,⁹ while that between the two measures of firm risk-taking is 0.31. In terms of correlation magnitude, the relation between market-based measures of performance and risk-taking (0.55) is stronger than that between accounting-based ones (0.40). Ownership concentration is significantly, positively correlated with firm profitability and valuation as well as the two respective measures of risk-taking. Ownership structure tends to be more highly concentrated among larger and older firms, and among firms with more tangible assets and more board independence. In contrast, more diffuse ownership is generally related to higher levels of CEO duality and sales growth.

4.2. Multivariate analysis

4.2.1. Ownership concentration and firm profitability

Tables 4 and 5 report estimated results from the regressions on the accounting-based measure of performance, *ROA*. In each table, columns (1)-(3) present results for the static panel while results for the dynamic panel are described in columns (4)-(6). While Table 4 shows no statistical significance of a linear relation between ownership concentration (measured as combined ownership by all blockholders) and firm profitability, results for testing the non-linear relation presented in Table 5 indicate that firm profitability is not a quadratic function of ownership concentration.

In Table 4, OLS estimates for the linear impact of ownership concentration on firm profitability are statistically significant at a 1% level for the static panel and at 5% for the dynamic panel. Fixed effects estimate for the relationship is insignificant (column (3)), signifying the probability that the fixed effects regression (without controlling industry effects) could not detect the effect of slow changes in ownership structure on firm performance (Adams et al., 2005; Boubaker et al., 2016). The strong significance of the lagged *ROA*'s estimated coefficients in the dynamic approach supports the previous argument about the dynamic nature of firm performance (Wintoki et al., 2012). In results obtained from system-GMM regressions that deal with sources of endogeneity, the statistical significance of some control variables (e.g., board size, leverage, firm size, and sales growth) found previously from OLS and fixed effects regressions disappears. Although the effect of ownership concentration remains significant at the 5% level (column (5)), such an impact becomes statistically indistinguishable from zero when controlling industry fixed effects (column (6)). This shows that industry characteristics, rather than ownership structures, have an explanatory power to differences in firms' profitability.¹⁰ It is also possible that systematic variations of ownership concentration reflect differences between industries. Such an endogeneity issue of ownership structure can make the estimated impact of blockholding in column (5) biased.

We also examine the potential non-linear relation between ownership concentration and firm performance by adding the square of *Blockholding* to regressions on firm profitability (*ROA*) whose results are described in Table 5. For all regressions, a quadratic relation is not found for Vietnamese listed firms when we use this accounting-based measure of performance. Again, control variables such as board size, leverage, firm size, and sales growth appear to be significant in OLS and fixed effects models. However, the disappearance of these variables' significance when moving to GMM models suggests that some sources of endogeneity such as simultaneity and dynamic endogeneity might lead to spurious results for regressions using fixed effects or pooled OLS estimators (Schultz et al., 2010; Wintoki et al., 2012).¹¹ Our results in the study of Vietnamese firms confirm

Table 3. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) ROA	1.00														
(2) Q	0.37***	1.00													
(3) e _{ROA}	0.40***	0.18***	1.00												
(4) e _Q	0.31***	0.55***	0.31***	1.00											
(5) Blockholding	0.10***	0.19***	0.08***	0.11***	1.00										
(6) CEO duality	-0.02	-0.02	-0.03*	-0.01	-0.17***	1.00									
(7) Board size	0.10***	0.08***	0.02	0.08***	-0.03	0.03	1.00								
(8) Board independence	0.01	0.09***	0.06***	0.10***	0.11***	-0.34***	0.10***	1.00							
(9) Gender diversity	0.07***	0.01	0.04**	0.07***	-0.03	0.08***	0.07***	-0.02	1.00						
(10) Leverage	-0.19***	-0.04**	-0.29***	-0.31***	-0.01	0.01	0.07***	-0.10***	-0.10***	1.00					
(11) Firm size	0.02	0.16***	-0.09***	-0.03*	0.13***	-0.07***	0.27***	0.09***	-0.02	0.43***	1.00				
(12) Capex	-0.03*	0.02	0.02	0.02	0.03	-0.07***	0.12***	0.10***	-0.01	0.10***	0.19***	1.00			
(13) Age	-0.14***	0.01	-0.09***	-0.01	0.04**	-0.14***	0.01	0.08***	0.00	-0.02	0.10***	-0.06***	1.00		
(14) Tangibility	0.03	0.02	-0.02	0.00	0.14***	-0.09***	0.10**	0.03	-0.11***	0.20***	0.11***	0.30***	0.00	1.00	
(15) Sales growth	0.28***	0.08***	0.17***	0.04*	-0.04**	-0.03	0.04**	0.02	0.06***	0.03	0.08***	0.01	-0.11***	0.00	1.00

* indicates significance at 10%; ** significance at 5%; *** significance at 1%.

Table 4. Ownership concentration and firm profitability: linearity

Dependent variable: Firm performance = ROA	Static panel			Dynamic panel		
	(1) Pooled OLS without industry effects	(2) Pooled OLS with industry effects	(3) Fixed effects	(4) Pooled OLS with industry effects	(5) System GMM without industry effects	(6) System GMM with industry effects
ROA _{t-1}				0.6754 (27.25)***	0.4537 (10.19)***	0.4556 (10.36)***
Blockholding	0.0545 (4.33)***	0.0452 (3.50)***	0.0088 (0.56)	0.0149 (2.37)**	0.0737 (2.14)**	0.0498 (1.45)
CEO duality	-0.0038 (-0.66)	-0.0063 (-1.19)	-0.0040 (-0.92)	-0.0015 (-0.63)	-0.0002 (-0.01)	0.0034 (0.31)
Board size	0.0413 (2.38)**	0.0351 (2.21)**	0.0301 (2.74)***	0.0158 (2.24)**	-0.0129 (-0.25)	-0.0114 (-0.22)
Board independence	-0.0166 (-1.24)	-0.0158 (-1.20)	-0.0148 (-1.25)	-0.0062 (-1.00)	0.0040 (0.11)	0.0003 (0.01)
Gender diversity	0.0229 (1.20)	-0.0041 (-0.22)	0.0161 (0.83)	0.0051 (0.64)	-0.0261 (-0.59)	-0.0187 (-0.39)
Leverage	-0.0927 (-6.75)***	-0.0991 (-7.21)***	-0.1040 (-6.06)***	-0.0321 (-5.60)***	-0.0439 (-1.12)	-0.0542 (-1.47)
Firm size	0.0061 (2.36)**	0.0085 (3.43)***	0.0322 (4.36)***	0.0014 (1.19)	0.0169 (1.76)*	0.0156 (1.53)
Capex	-0.0285 (-3.71)***	-0.0111 (-1.46)	-0.0064 (-0.67)	-0.0160 (-2.13)**	-0.1156 (-1.64)	-0.1133 (-1.46)
Age	-0.0010 (-0.12)	-0.0120 (-1.47)	-0.0182 (-1.27)	0.0026 (0.67)	-0.0017 (-0.23)	-0.0059 (-0.78)
Tangibility	0.0241 (1.95)*	-0.0024 (-0.17)	-0.0688 (-3.84)***	0.0071 (1.26)	-0.0052 (-0.11)	0.0099 (0.21)
Sales growth	0.0638 (12.93)***	0.0638 (13.39)***	0.0516 (12.93)***	0.0667 (13.94)***	0.0365 (0.76)	0.0382 (0.71)
Constant	-0.0254 (-0.69)	-0.0278 (-0.71)	-0.2744 (-3.07)***	-0.0032 (-0.20)	-0.1319 (-1.50)	-0.1176 (-1.22)
Industry fixed effects	No	Yes	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.199	0.268	0.272	0.651		
No. of firms	502	502	502	502	502	502
No. of observations	3136	3136	3136	2634	2634	2634
No. of instruments				40	48	48
Arellano-Bond test: AR(1) (p-value)				0.000	0.000	0.000

(Continued)

Table 4. (Continued)

	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Firm performance = ROA	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
Arellano-Bond test: AR(2) (p-value)					0.171	0.182
Hansen J-test of over-identification (p-value)					0.320	0.271
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)					0.243	0.198
GMM instruments for diff. equation (Lagged performance)					0.201	0.221
GMM instruments for level equation (Lagged performance)					0.185	0.164

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

Table 5. Ownership concentration and firm profitability: non-linearity

Dependent variable: Firm Performance = ROA	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
ROA _{t-1}						
Blockholding	0.0921 (1.83)*	0.0859 (1.77)*	-0.0263 (-0.52)	0.6756 (27.43)***	0.4552 (10.18)***	0.4586 (10.36)***
Blockholding ²	-0.0401 (-0.74)	-0.0435 (-0.82)	0.0373 (0.73)	0.0633 (2.43)**	0.0676 (0.60)	0.0768 (0.70)
CEO duality	-0.0038 (-0.66)	-0.0063 (-1.19)	-0.0039 (-0.90)	-0.0515 (-1.96)*	0.0017 (0.01)	-0.0336 (-0.30)
Board size	0.0410 (2.38)**	0.0348 (2.19)**	0.0306 (2.79)***	-0.0015 (-0.62)	0.0005 (0.05)	0.0047 (0.42)
Board independence	-0.0161 (-1.20)	-0.0153 (-1.17)	-0.0153 (-1.29)	0.0155 (2.21)**	-0.0123 (-0.24)	-0.0136 (-0.26)
Gender diversity	0.0234 (1.23)	-0.0035 (-0.19)	0.0160 (0.82)	-0.0056 (-0.91)	0.0039 (0.11)	0.0018 (0.05)
Leverage	-0.0931 (-6.72)***	-0.0997 (-7.21)***	-0.1038 (-6.07)***	0.0059 (0.74)	-0.0218 (-0.49)	-0.0145 (-0.31)
Firm size	0.0061 (2.39)**	0.0086 (3.46)***	0.0321 (4.37)***	-0.0327 (-5.71)***	-0.0357 (-0.97)	-0.0490 (-1.42)
Capex	-0.0281 (-3.66)***	-0.0107 (-1.40)	-0.0069 (-0.73)	0.0015 (1.29)	0.0166 (1.78)*	0.0158 (1.59)
Age	-0.0013 (-0.16)	-0.0124 (-1.51)	-0.0180 (-1.26)	-0.0154 (-2.12)**	-0.1034 (-1.57)	-0.1023 (-1.44)
Tangibility	0.0247 (2.00)**	-0.0019 (-0.14)	-0.0689 (-3.85)***	0.0021 (0.54)	-0.0012 (-0.15)	-0.0062 (-0.83)
Sales growth	0.0639 (12.92)***	0.0638 (13.38)***	0.0515 (12.94)***	0.0077 (1.37)	-0.0154 (-0.33)	0.0018 (0.04)
Constant	-0.0337 (-0.85)	-0.0372 (-0.90)	-0.2667 (-3.01)***	0.0667 (13.92)***	0.0268 (0.59)	0.0297 (0.60)
Industry fixed effects	No	Yes	No	-0.0142 (-0.81)	-0.1293 (-1.49)	-0.1218 (-1.27)
Year fixed effects	Yes	Yes	Yes	Yes	No	Yes
Prob. (F statistic)	0.000	0.000	0.000	Yes	Yes	Yes
R-squared	0.199	0.268	0.272	0.000	0.000	0.000
No. of firms	502	502	502	0.651	502	502
No. of observations	3136	3136	3136	3136	2634	2634
No. of instruments				42	42	50

(Continued)

Table 5. (Continued)

Dependent variable: Firm Performance = ROA	Static panel			Dynamic panel		
	(1) Pooled OLS without industry effects	(2) Pooled OLS with industry effects	(3) Fixed effects	(4) Pooled OLS with industry effects	(5) System GMM without industry effects	(6) System GMM with industry effects
Arellano-Bond test: AR(1) (p-value)					0.000	0.000
Arellano-Bond test: AR(2) (p-value)					0.176	0.172
Hansen J-test of over-identification (p-value)					0.334	0.295
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)					0.252	0.220
GMM instruments for diff. equation (Lagged performance)					0.206	0.217
GMM instruments for level equation (Lagged performance)					0.224	0.187

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

that one should not ignore the dynamic aspect of governance–performance relationship. As dynamic panel-based results shown in Tables 4 and 5, estimated coefficients of the lagged ROA are all significantly different from zero (t -statistic > 10). For pooled OLS estimations (with industry effects), R -squared rises from 26.8% in the static model (column (2)) to 65.1% in the dynamic model (column (4)). Response coefficients of past performance estimated from GMM regressions (~0.45) are much smaller than those from OLS regressions (~0.67)—which may be biased.

4.2.2. Ownership concentration and firm valuation

Tables 6 and 7 present estimated results from the regressions on the market-based measure of performance, Q . Similar to those in Tables 4 and 5, results for the static panel are reported in columns (1)–(3) and results for the dynamic panel are described in columns (4)–(6). Again, Table 6 shows estimated outputs for testing the linear relation, and Table 7, for detecting the non-linear relation.

In Table 6, OLS and GMM estimates indicate a positive relation between ownership concentration and firm value at different levels of significance, though these results disappear in fixed effects model (column (3)). To make a comparison to Nguyen et al.'s (2015) results, it is vital to realize that our research model additionally incorporates values of ROA and lagged ROA as well as industry fixed effects in the specification (1) of Q .¹² Return ratio ROA measures firm profitability which is well-recognized as a significant determinant of firm valuation. Our results in Table 6 (and Table 7) affirm the significance of ROA as a powerful driver for changes in Q . The results also show that controlling industry effects reduces the significance of the variable of interest, *Blockholding*.

The non-linear relation between ownership concentration (measured as total blockholdings) and firm valuation is confirmed by our results presented in Table 7. For all regressions—albeit GMM regressions with weaker significance, a u-shaped relation is found for Vietnamese listed firms. In other words, the relation is seemingly negative up to a certain threshold of ownership distribution and positive afterward. This may be a consequence of the trade-off between negative and positive effects of ownership concentration. At first, a higher level of concentrated ownership leads to cutback in firm valuation by market as outside investors are dominated by increasing realization of expropriation risk by large shareholders. When ownership concentration reaches a certain level, the trade-off leads to a positive net effect of ownership accumulation on firm value. It is understandable that closer convergence of blockholders' interest objectives and the firm's value maximization is translated into a higher valuation by the market corresponding to the firm's higher size of blockholdings.

4.2.3. Ownership concentration and corporate risk-taking

We investigate the risk-taking mechanism of concentration–performance relationship by using the Glejser test for heteroskedasticity similar to Adams et al. (2005), Nguyen (2012), Boubaker et al. (2016). Using abnormal components of accounting and market performance as proxies for corporate risk-taking behavior, we test for both linear and non-linear impacts of ownership concentration on risk-taking. Estimated results of the tests are presented in Table 8. Columns (1)–(3) and (4)–(6) present the results using the absolute deviation from expected ROA, $|e_{ROA}|$, and the absolute deviation from expected Q , $|e_Q|$, respectively, as proxies for risk-taking. Among them, columns (3) and (6) report estimates related to testing for the non-linear relation by adding the square of *Blockholding*. However, for this non-linear approach we find no significant relation between ownership concentration and our measures of risk-taking.

In reference to the linear approach, static cluster-robust OLS estimates show that blockholding significantly, positively affects risk-taking regardless of whether risk-taking is measured by $|e_{ROA}|$ or $|e_Q|$. GMM-based results, however, lead to different inferences corresponding to the two measures

Table 6. Ownership concentration and firm valuation: linearity

Dependent variable: Firm Performance = Q	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
Q _{t-1}						
Blockholding	0.1923 (4.28)***	0.1745 (4.01)***	0.0710 (0.73)	0.6707 (28.60)***	0.7834 (14.75)***	0.7707 (14.93)***
CEO duality	0.0328 (2.01)**	0.0316 (1.96)**	0.0337 (1.27)	0.0587 (2.37)**	0.3158 (2.29)**	0.2644 (1.96)*
Board size	0.0385 (0.70)	0.0414 (0.74)	0.0439 (0.66)	0.0135 (1.62)	0.0305 (0.83)	0.0350 (0.97)
Board independence	0.0905 (2.56)**	0.0844 (2.35)**	0.0056 (0.12)	0.0470 (1.89)*	-0.3006 (-1.58)	-0.2876 (-1.56)
Gender diversity	-0.0341 (-0.73)	-0.0606 (-1.27)	-0.0793 (-1.22)	0.0193 (1.02)	0.1491 (1.32)	0.1343 (1.24)
ROA _t	0.9825 (7.52)***	0.9508 (7.33)***	0.6340 (4.89)***	-0.0137 (-0.56)	-0.0760 (-0.53)	-0.0104 (-0.07)
ROA _{t-1}	0.6069 (4.60)***	0.5833 (4.45)***	0.3362 (2.83)***	0.6910 (6.74)***	1.4063 (2.20)**	1.4642 (2.39)**
Leverage	0.0107 (0.32)	0.0062 (0.17)	0.0758 (1.02)	0.1270 (1.37)	-0.3644 (-0.99)	-0.3842 (-1.10)
Firm size	0.0239 (3.05)***	0.0263 (3.07)***	0.0948 (1.75)*	0.0196 (1.14)	-0.0183 (-0.21)	-0.0425 (-0.48)
Capex	0.0299 (1.06)	0.0374 (1.36)	-0.0210 (-0.51)	0.0032 (0.85)	0.0340 (1.37)	0.0373 (1.36)
Age	-0.0306 (-1.13)	-0.0489 (-1.72)*	-0.2135 (-2.20)**	0.0284 (1.69)*	0.1202 (1.06)	0.1154 (0.99)
Tangibility	-0.0656 (-1.83)*	-0.0769 (-2.01)**	0.1989 (1.78)*	0.0265 (2.16)**	0.0368 (1.80)*	0.0305 (1.30)
Sales growth	-0.0042 (-0.30)	-0.0031 (-0.22)	-0.0016 (-0.14)	-0.0353 (-1.92)*	-0.1582 (-1.36)	-0.1585 (-1.59)
Constant	0.3655 (2.85)***	0.3572 (2.67)***	-0.2278 (-0.32)	0.0210 (1.84)*	-0.0128 (-0.12)	-0.0162 (-0.15)
Industry fixed effects	No	Yes	No	Yes	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.319	0.330	0.223	0.642		
No. of firms	480	480	480	480	480	480
No. of observations	2500	2500	2500	2500	2500	2500

(Continued)

Table 6. (Continued)

	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Firm Performance = Q	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
No. of instruments					40	48
Arellano-Bond test: AR(1) (p-value)					0.000	0.000
Arellano-Bond test: AR(2) (p-value)					0.079	0.080
Hansen J-test of over-identification (p-value)					0.682	0.586
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)					0.623	0.503
GMM instruments for diff. equation (Lagged performance)					0.412	0.520
GMM instruments for level equation (Lagged performance)					0.238	0.125

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

Table 7. Ownership concentration and firm valuation: non-linearity

Dependent variable: Firm Performance = Q	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
Q _{t-1}						
Blockholding	-0.2773 (-1.44)	-0.2883 (-1.47)	-0.4317 (-1.75)*	0.6681 (28.65)***	0.7180 (15.98)***	0.7064 (15.83)***
Blockholding ²	0.4984 (2.35)**	0.4921 (2.31)**	0.5426 (2.54)**	-0.1456 (-1.66)*	-0.3932 (-1.16)	-0.3783 (-1.11)
CEO duality	0.0325 (2.00)**	0.0313 (1.96)*	0.0347 (1.32)	0.2177 (2.45)**	0.7297 (1.83)*	0.6922 (1.74)*
Board size	0.0423 (0.79)	0.0439 (0.81)	0.0476 (0.73)	0.0134 (1.62)	0.0138 (0.36)	0.0195 (0.52)
Board independence	0.0829 (2.41)**	0.0779 (2.23)**	-0.0023 (-0.05)	0.0480 (1.96)*	-0.1592 (-0.92)	-0.1585 (-0.91)
Gender diversity	-0.0400 (-0.84)	-0.0685 (-1.40)	-0.0851 (-1.31)	0.0167 (0.89)	0.0676 (0.57)	0.0640 (0.55)
ROA _t	1.0027 (7.62)***	0.9707 (7.42)***	0.6360 (4.89)***	-0.0173 (-0.70)	-0.0343 (-0.24)	0.0027 (0.02)
ROA _{t-1}	0.5921 (4.43)***	0.5694 (4.28)***	0.3076 (2.58)***	0.7008 (6.84)***	1.7978 (3.10)***	1.7435 (2.97)***
Leverage	0.0186 (0.55)	0.0147 (0.41)	0.0804 (1.08)	0.1227 (1.31)	-0.6651 (-2.00)**	-0.6359 (-1.94)*
Firm size	0.0228 (2.91)***	0.0250 (2.92)***	0.0929 (1.72)*	0.0233 (1.33)	0.0385 (0.45)	0.0058 (0.07)
Capex	0.0243 (0.85)	0.0319 (1.14)	-0.0285 (-0.69)	0.0027 (0.72)	0.0228 (0.89)	0.0253 (0.91)
Age	-0.0260 (-0.99)	-0.0439 (-1.61)	-0.2035 (-2.14)**	0.0260 (1.55)	0.1472 (1.34)	0.1322 (1.15)
Tangibility	-0.0727 (-1.99)**	-0.0815 (-2.10)**	0.1981 (1.77)*	0.0284 (2.33)**	0.0361 (1.75)*	0.0295 (1.29)
Sales growth	-0.0055 (-0.40)	-0.0041 (-0.30)	-0.0019 (-0.16)	-0.0375 (-2.01)**	-0.2093 (-1.78)*	-0.1924 (-1.91)*
Constant	0.4668 (3.43)***	0.4641 (3.22)***	-0.1151 (-0.16)	0.0204 (1.80)*	0.0103 (0.10)	0.0230 (0.22)
Industry fixed effects	No	Yes	No	0.2000 (2.73)***	0.1810 (0.64)	0.1488 (0.52)
Year fixed effects	Yes	Yes	Yes	Yes	No	Yes
Prob. (F statistic)	0.000	0.000	0.000	Yes	Yes	Yes
R-squared	0.324	0.335	0.228	0.000	0.000	0.000
No. of firms	480	480	480	0.643	480	480

(Continued)

Table 7. (Continued)

	Static panel			Dynamic panel		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Firm Performance = Q	Pooled OLS without industry effects	Pooled OLS with industry effects	Fixed effects	Pooled OLS with industry effects	System GMM without industry effects	System GMM with industry effects
No. of observations	2500	2500	2500	2500	2500	2500
No. of instruments					43	51
Arellano-Bond test: AR(1) (p-value)					0.000	0.000
Arellano-Bond test: AR(2) (p-value)					0.144	0.129
Hansen J-test of over-identification (p-value)					0.658	0.605
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)					0.563	0.507
GMM instruments for diff. equation (Lagged performance)					0.124	0.166
GMM instruments for level equation (Lagged performance)					0.271	0.195

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

Table 8. Ownership concentration and firm risk-taking

Firm Risk-taking = (Dependent variable)	Absolute deviation from expected ROA ($ e_{ROA} $)			Absolute deviation from expected Q ($ e_q $)		
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:	Pooled OLS with industry effects	System GMM with industry effects	System GMM with industry effects, non-linear	Pooled OLS with industry effects	System GMM with industry effects	System GMM with industry effects, non-linear
Lagged dependent variable		0.2509 (6.14)***	0.2633 (5.55)***		0.4503 (5.34)***	0.4401 (5.08)***
Blockholding	0.0229 (3.27)***	0.0762 (2.29)**	0.0687 (0.82)	0.0667 (2.74)***	0.0921 (0.61)	0.1933 (0.49)
Blockholding ²			-0.0359 (-0.42)			-0.1347 (-0.35)
CEO duality	-0.0022 (-0.77)	-0.0047 (-0.54)	-0.0009 (-0.12)	0.0161 (1.41)	0.0008 (0.02)	0.0046 (0.13)
Board size	0.0039 (0.41)	-0.0524 (-1.42)	0.0107 (0.34)	0.0397 (1.25)	-0.2585 (-1.6)	-0.2849 (-1.71)*
Board independence	0.0062 (0.81)	-0.0225 (-0.83)	-0.0082 (-0.33)	0.0647 (2.38)**	-0.0711 (-0.72)	-0.0980 (-1.02)
Gender diversity	-0.0058 (-0.56)	0.0043 (0.13)	0.0115 (0.37)	-0.0009 (-0.03)	-0.0498 (-0.42)	-0.0181 (-0.15)
ROA _t				0.2497 (2.59)***	0.7775 (1.28)	0.7344 (1.18)
ROA _{t-1}				0.2493 (3.09)***	-0.3877 (-1.33)	-0.3679 (-1.24)
Leverage	-0.0683 (-9.17)***	-0.0369 (-1.43)	-0.0389 (-1.50)	-0.2195 (-9.47)***	-0.0108 (-0.10)	-0.0262 (-0.24)
Firm size	0.0014 (1.09)	0.0005 (0.07)	-0.0073 (-1.11)	0.0090 (1.74)*	0.0438 (1.62)	0.0441 (1.64)
Capex	0.0111 (2.40)**	0.0216 (0.87)	0.0536 (1.20)	0.0245 (1.97)**	-0.0124 (-0.07)	0.0180 (0.10)
Age	-0.0122 (-2.73)***	-0.0073 (-1.37)	-0.0057 (-0.93)	-0.0328 (-1.77)*	-0.0119 (-0.54)	-0.0075 (-0.33)
Tangibility	-0.0022 (-0.30)	-0.0442 (-1.77)*	-0.0681 (-2.31)**	0.0320 (1.48)	-0.0657 (-0.71)	-0.0677 (-0.73)
Sales growth	0.0259 (8.74)***	0.0137 (0.44)	0.0016 (0.06)	0.0041 (0.38)	0.0540 (0.62)	0.0526 (0.58)
Constant	0.0546 (2.67)***	0.1430 (1.72)*	0.1525 (2.11)**	-0.0136 (-0.17)	-0.0913 (-0.33)	-0.0494 (-0.18)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.157			0.214		
No. of firms	502	502	502	480	480	480

(Continued)

Table 8. (Continued)

Firm Risk-taking = (Dependent variable)	Absolute deviation from expected ROA ($ e_{ROA} $)			Absolute deviation from expected Q ($ e_q $)		
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:						
	Pooled OLS with industry effects	System GMM with industry effects	System GMM with industry effects, non-linear	Pooled OLS with industry effects	System GMM with industry effects	System GMM with industry effects, non-linear
No. of observations	3136	2634	2634	2500	2020	2020
No. of instruments		44	53		42	44
Arellano-Bond test: AR(1) (p-value)		0.000	0.000		0.000	0.000
Arellano-Bond test: AR(2) (p-value)		0.731	0.994		0.253	0.279
Hansen J-test of over-identification (p-value)		0.142	0.161		0.462	0.465
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)		0.112	0.357		0.397	0.582
GMM instruments for diff. equation (Lagged performance)		0.474	0.185		0.663	0.582
GMM instruments for level equation (Lagged performance)		0.760	0.629		0.312	0.247

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

of risk-taking. Controlling sources of endogeneity clears out the effect of ownership concentration on unexpected volatility of firm valuation. Meanwhile, the positive impact of ownership concentration on the riskiness of firm profitability remains significant. The first inference implies that the riskiness of firm performance in term of valuation could be not a consequence of concentrated ownership structure. Thus, the detected effects of ownership concentration on firm valuation (section 4.2.2.) might not be formed via risk-taking channel. The second inference implies that ownership concentration increases corporate risk-taking behavior. Coupled with the finding of no relationship between ownership concentration and firm profitability (section 4.2.1), it may be interpreted that ownership concentration is indirectly linked to firm performance through its effect on risk-taking.

4.2.4. More robustness checks

4.2.4.1. *The endogeneity issue and the validity of system GMM estimator.* We use the two-way system GMM estimator to deal with the three sources of endogeneity. Because performance variables such as ROA and Q are of high persistence, a dynamic approach on modeling determinants of these variables may be appropriate. In fact, all estimates of lagged dependent variables' coefficients (over dynamic panel regressions) in Tables 4–7 are strictly significant at a 1% level. The magnitude of profitability persistence is stable across both linear and non-linear estimations, with a response of 0.46. Q exhibits an estimated persistent impact of 0.77 on itself in the linear specification. However, the effect of past values of Q on its current values is downward to 0.71 in the non-linear specification. This evidence of performance persistence confirms the necessity of considering dynamic aspects when estimating the ownership–performance relationship. Consequently, it means that empirical estimates in our static panels are potentially biased.

The system GMM estimator employed in this study, which is robust to the downward bias in two-step standard errors thanks to the Windmeijer correction, should theoretically produce efficient and consistent estimates. Using too many instruments, however, can overfit endogenous variables. If this is the case, the estimator fails to eliminate endogenous components, and parameter estimates are biased as a result (Roodman, 2009). Hansen *J*-test is a standard specification check for the two-step system GMM and also a test of instrument validity. Albeit its robustness to heteroskedasticity, the *J*-test can be weakened by instrument proliferation (Bowsher, 2002). Unfortunately, there is no exact criterion of how many instruments in relative term should be a safe number. Bowsher's (2002) Monte Carlo simulations demonstrate the rule of thumb that the instrument count should be kept below the number of clusters is not a safe guidance. To reduce the overfitting risk caused by instrument proliferation, Roodman (2009) suggests that researchers should test their estimated results for sensitivity to reductions in the instrument count.¹³ Tables 9 and 10 report reduced results from examining our GMM estimates' robustness to variations in the number and lag depth of instruments. Regarding the specification of performance, Equation (1), we check on its regression with industry fixed effects and report only estimates of the lagged dependent variable and explanatory variable of interest, *Blockholding* (ownership concentration). Results for the Hansen *J*-test and the difference-in-Hansen test are essential to asserting the validity of the full set and subsets of instruments and thus reported completely.

Table 9 describes (reduced) variants of columns (6) in Tables 4 and 5 corresponding to changes in the number of instruments. Column (4) with both two Panels A and B of Table 9 is the place in which main results from columns (6) in Tables 4 and 5, respectively, are re-reported. We detect the effect of reducing the instrument count through using both techniques: controlling lag distances of instruments and collapsing these instruments. There are four variants of system GMM here. The first variant uses all collapsed possible instruments. The second uses collapsed second- and third-lag instruments. The third restricts collapsed instruments to second lags only. The fourth is the final result of selecting random subsets from potential instruments and ensuring passing needed tests, especially the Hansen tests for the validity of chosen instruments. This final variant is the best one that we try to obtain and also the estimation design that produces system GMM estimates described in columns (6) of Tables 4 and 5.

Table 9. Test for sensitivity to reductions in the instrument count: the specification of profitability

	(1) Full instruments, collapsed		(2) 2nd-3rd lag instruments, collapsed		(3) 2nd lag instruments only, collapsed		(4) Selected instruments, collapsed	
<i>A. Linear relation</i>								
ROA _{t-1}	0.4595	(1.1.76)***	0.4687	(10.26)***	0.4769	(8.39)***	0.4556	(10.36)***
Blockholding	0.0349	(1.19)	0.0499	(1.39)	0.0441	(1.12)	0.0498	(1.45)
No. of firms	502		502		502		502	
No. of observations	2634		2634		2634		2634	
No. of instruments	93		49		38		48	
Arellano-Bond test for AR(2) in differences (p-value)	0.152		0.175		0.313		0.182	
Hansen J-test of over-identification (p-value)	0.850		0.268		0.315		0.271	
Difference-in-Hansen test for exogeneity (p-value)								
GMM instruments for level equation (All)	0.933		0.759				0.198	
GMM instruments for diff. equation (Lagged performance)	0.853		0.715		0.714		0.221	
GMM instruments for level equation (Lagged performance)	0.472		1.000		0.894		0.164	
GMM instruments for diff. equation (Governance variables)	0.948		0.865		0.294		0.680	
GMM instruments for level equation (Governance variables)	0.998		0.964		0.483		0.650	
GMM instruments for diff. equation (Firm characteristics)	0.979		0.375		0.620		0.788	
GMM instruments for level equation (Firm characteristics)	0.763		0.518		0.335		0.249	
IV instruments for level equation (Age; Industries; Years)	0.892		0.586				0.200	
<i>B. Non-linear relation</i>								
ROA _{t-1}	0.4686	(12.57)***	0.4719	(10.58)***	0.4793	(8.63)***	0.4586	(10.36)***
Blockholding	0.1087	(1.29)	0.0824	(0.85)	0.0950	(0.91)	0.0768	(0.70)
Blockholding ²	-0.0978	(-1.11)	-0.0440	(-0.41)	-0.0670	(-0.58)	-0.0336	(-0.30)
No. of firms	502		502		502		502	

(Continued)

Table 9. (Continued)

	(1) Full instruments, collapsed	(2) 2nd-3rd lag instruments, collapsed	(3) 2nd lag instruments only, collapsed	(4) Selected instruments, collapsed
No. of observations	2634	2634	2634	2634
No. of instruments	100	52	40	50
Arellano-Bond test for AR(2) in differences (p-value)	0.136	0.179	0.295	0.172
Hansen J-test of over-identification (p-value)	0.842	0.331	0.330	0.295
Difference-in-Hansen test for exogeneity (p-value)				
GMM instruments for level equation (All)	0.858	0.611		0.220
GMM instruments for diff. equation (Lagged performance)	0.685	0.724	0.755	0.217
GMM instruments for level equation (Lagged performance)	0.381	0.999	0.829	0.187
GMM instruments for diff. equation (Governance variables)	0.922	0.862	0.283	0.692
GMM instruments for level equation (Governance variables)	0.980	0.945	0.509	0.684
GMM instruments for diff. equation (Firm characteristics)	0.987	0.341	0.679	0.757
GMM instruments for level equation (Firm characteristics)	0.835	0.469	0.388	0.231
IV instruments for level equation (Age; Industries; Years)	0.857	0.466		0.291

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%.

It is obvious that a higher number of instruments tends to be coupled by higher p -values on the Hansen J -test and the difference-in-Hansen test. With most p -values of approximate 1.000, the full-instrument variant could never detect any violation. The second variant, with 49 instruments as reduced from 93 instruments in the first variant, shows a nice Hansen J -test p -value of 0.268 but a “perfect” p -value of 1.000 on the difference-in-Hansen test of the lagged performance-based subset of GMM instruments for the level equation implying an overfitting of endogenous variables. The number of instruments reduces to 38 in the third variant. It should be noted that the difference-in-Hansen tests of all GMM instruments and IV instruments are unavailable because without these instruments the model is under-identified. In this variant of collapsed second-lag instruments, the p -value of 0.315 on the Hansen J -test is higher than that shown in the second variant. Thus the third variant, albeit its smaller number of instruments, might face a higher danger of overfitting problem. Indeed, the problem of overfitting can occur at low instrument counts (Roodman, 2009). The final variant, on average, exhibits better p -values on the overidentification tests of the full instrument set as well as subsets of instruments. Overall, for all variants the coefficient of *Blockholding* keeps statistically insignificant, implying an absence of the relationship between ownership concentration and firm profitability.

A similar pattern of Hansen test statistics is observable in Panel B of Table 9 where the non-linear relation between blockholding and firm profitability is examined under the four variants of system GMM. Also, the inference for the relation of interest is easier to draw. There is no evidence of a quadratic relation between ownership concentration and firm profitability.

Regarding the market-based measure of performance, Q , an intuitive inference from Table 10 is that blockholding as a proxy for ownership concentration should have a non-monotonic, rather than monotonic, impact on Q . Such a relation seems to be a u-shaped curve with an ownership breakpoint of approximate 30%. Results for overidentification tests confirm that the invalidity of instruments as a full set or a subset can occur at low or high instrument counts. The fourth variant of system GMM (for both Panels A and B), whose results are also detailed in columns (6) of Tables 6 and 7, employs the best internal instruments that we try to find through selecting random subsets.

The similar process of testing for sensitivity to reductions in the instrument count is also applied to the specification of firm risk-taking, Equation (2). We do not report here these results which are available upon request. Of course, system GMM estimates shown in Table 8 are the results from selecting random instrument subsets as our best tries.

4.2.4.2. Industry-adjusted measures of performance and other alternatives¹⁴. Some corporate governance studies use industry-adjusted measures of firm performance (e.g., Wintoki et al., 2012). For ensuring the robustness of our estimates, we report results from regressing our specifications using industry-adjusted ROA and Q . Table 11 introduces system GMM estimates for the relation between ownership concentration and firm performance using industry-adjusted measures of profitability and valuation. Only statistics of necessary postestimation tests are reported. Across the results for both linear and non-linear approaches, industry-adjusted estimation patterns closely resemble unadjusted ones. In terms of linearity, the direct association of blockholding with firm profitability is inconclusive, while a statistically weak relation is detected between blockholding and firm valuation. Non-linearity could not characterize the concentration-profitability relationship, but the concentration-valuation relationship.

Traditional studies use a standardized industry-adjusted measure of risk-taking which is calculated based on industry-adjusted accounting profitability (e.g., John et al., 2008). We estimate the specification of risk-taking, Equation (2), using z -values of industry-adjusted ROA instead of the absolute deviation from expected ROA . Results reported in Table 12 have a similar pattern of the role of ownership concentration although the GMM-based estimated coefficient of blockholding is just significant at 10% level.

Table 10. Test for sensitivity to reductions in the instrument count: the specification of valuation

	(1) Full instruments, collapsed		(2) 2nd-3rd lag instruments, collapsed		(3) 2nd lag instruments only, collapsed		(4) Selected instruments, collapsed	
<i>A. Linear relation</i>								
Q _{t-1}	0.6926	(12.76)***	0.7225	(15.01)***	0.8153	(13.01)***	0.7707	(14.93)***
Blockholding	0.2598	(1.93)*	0.2445	(1.78)*	0.2806	(1.94)*	0.2644	(1.96)*
No. of firms	480		480		480		480	
No. of observations	2500		2500		2500		2500	
No. of instruments	101		54		42		48	
Arellano-Bond test for AR(2) in differences (p-value)	0.045		0.080		0.142		0.080	
Hansen J-test of over-identification (p-value)	0.033		0.800		0.302		0.586	
<i>Difference-in-Hansen test for exogeneity (p-value)</i>								
GMM instruments for level equation (All)	0.036		0.390				0.503	
GMM instruments for diff. equation (Lagged performance)	0.398		0.461		0.615		0.520	
GMM instruments for level equation (Lagged performance)	0.228		0.491		0.159		0.125	
GMM instruments for diff. equation (Governance variables)	0.014		0.593		0.161		0.163	
GMM instruments for level equation (Governance variables)	0.245		0.308		0.188		0.254	
GMM instruments for diff. equation (Firm characteristics)	0.021		0.580		0.063		0.286	
GMM instruments for level equation (Firm characteristics)	0.675		0.725		0.659		0.708	
IV instruments for level equation (Age; Industries; Years)	0.013		0.428				0.448	
<i>B. Non-linear relation</i>								
Q _{t-1}	0.6680	(11.88)***	0.6902	(14.73)***	0.7774	(12.98)***	0.7064	(15.83)***
Blockholding	-0.4702	(-1.55)	-0.4210	(-1.32)	-0.2614	(-0.65)	-0.3783	(-1.11)
Blockholding ²	0.7724	(2.28)**	0.7399	(1.94)*	0.5875	(1.26)	0.6922	(1.74)*
No. of firms	480		480		480		480	

(Continued)

Table 10. (Continued)

	(1) Full instruments, collapsed	(2) 2nd-3rd lag instruments, collapsed	(3) 2nd lag instruments only, collapsed	(4) Selected instruments, collapsed
No. of observations	2500	2500	2500	2500
No. of instruments	108	57	44	51
Arellano-Bond test for AR(2) in differences (<i>p</i> -value)	0.062	0.146	0.184	0.129
Hansen J-test of over-identification (<i>p</i> -value)	0.018	0.821	0.330	0.605
Difference-in-Hansen test for exogeneity (<i>p</i> -value)				
GMM instruments for level equation (All)	0.006	0.451		0.507
GMM instruments for diff. equation (Lagged performance)	0.087	0.214	0.446	0.166
GMM instruments for level equation (Lagged performance)	0.005	0.963	0.280	0.195
GMM instruments for diff. equation (Governance variables)	0.007	0.571	0.155	0.151
GMM instruments for level equation (Governance variables)	0.227	0.182	0.110	0.171
GMM instruments for diff. equation (Firm characteristics)	0.015	0.527	0.056	0.464
GMM instruments for level equation (Firm characteristics)	0.596	0.855	0.645	0.828
IV instruments for level equation (Age; Industries; Years)	0.002	0.416		0.527

Estimated coefficients are reported with heteroskedasticity-robust *t*-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%.

Table 11. Ownership concentration and industry-adjusted performance

Firm performance = (Dependent variable)	Industry-adjusted ROA			Industry-adjusted Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM, non-linear	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM, non-linear
Lagged dependent variable		0.4555 (10.23)***	0.4542 (10.35)***		0.7746 (14.73)***	0.7088 (15.56)***
Blockholding	0.0452 (3.50)***	0.0530 (1.46)	0.0903 (0.82)	0.1749 (4.01)***	0.2615 (1.94)*	-0.3883 (-1.14)
Blockholding^2			-0.0453 (-0.40)			0.6943 (1.73)*
CEO duality	-0.0061 (-1.16)	0.0010 (0.09)	0.0023 (0.21)	0.0316 (1.96)*	0.0355 (0.98)	0.0192 (0.51)
Board size	0.0350 (2.21)**	-0.0067 (-0.13)	-0.0117 (-0.23)	0.0417 (0.74)	-0.2832 (-1.54)	-0.1544 (-0.88)
Board independence	-0.0158 (-1.20)	-0.0026 (-0.08)	-0.0016 (-0.05)	0.0846 (2.35)**	0.1329 (1.23)	0.0635 (0.54)
Gender diversity	-0.0040 (-0.21)	-0.0369 (-0.83)	-0.0303 (-0.69)	-0.0603 (-1.25)	-0.0133 (-0.09)	0.0048 (0.03)
ROA _t				0.9530 (7.33)***	1.4338 (2.29)**	1.7530 (2.91)***
ROA _{t-1}				0.5839 (4.45)***	-0.3742 (-1.06)	-0.6395 (-1.92)*
Leverage	-0.0989 (-7.21)***	-0.0733 (-1.97)**	-0.0664 (-1.85)*	0.0051 (0.14)	-0.0441 (-0.49)	0.0067 (0.08)
Firm size	0.0085 (3.43)***	0.0141 (1.28)	0.0150 (1.42)	0.0265 (3.07)***	0.0369 (1.35)	0.0246 (0.88)
Capex	-0.0104 (-1.40)	-0.1241 (-1.84)*	-0.1138 (-1.82)*	0.0372 (1.35)	0.1109 (0.94)	0.1332 (1.15)
Age	-0.0119 (-1.46)	-0.0046 (-0.60)	-0.0052 (-0.69)	-0.0492 (-1.72)*	0.0313 (1.34)	0.0300 (1.30)
Tangibility	-0.0028 (-0.21)	0.0209 (0.46)	0.0115 (0.27)	-0.0766 (-2.00)**	-0.1590 (-1.59)	-0.1941 (-1.92)*
Sales growth	0.0638 (13.32)***	0.0632 (1.28)	0.0539 (1.14)	-0.0031 (-0.22)	-0.0131 (-0.12)	0.0214 (0.21)
Constant	-0.1098 (-2.82)***	-0.1491 (-1.41)	-0.1587 (-1.54)	-0.5399 (-4.00)***	-0.2204 (-0.78)	-0.1080 (-0.38)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.208			0.314		
No. of firms	502	502	502	480	480	480
No. of observations	3136	2634	2634	2500	2500	2500

(Continued)

Table 11. (Continued)

Firm performance = (Dependent variable)	Industry-adjusted ROA			Industry-adjusted Q		
	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM, non-linear	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM, non-linear
No. of instruments		48	50		48	51
Arellano-Bond test: AR(1) (p-value)		0.000	0.000		0.000	0.000
Arellano-Bond test: AR(2) (p-value)		0.174	0.156		0.079	0.134
Hansen J-test of over-identification (p-value)		0.254	0.264		0.591	0.602
Difference-in-Hansen test for exogeneity (p-value)						
GMM instruments for level equation (All)		0.175	0.187		0.499	0.497
GMM instruments for diff. equation (Lagged performance)		0.248	0.226		0.559	0.150
GMM instruments for level equation (Lagged performance)		0.142	0.173		0.125	0.206

Estimated coefficients are reported with heteroskedasticity-robust t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%. System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

Table 12. Ownership concentration and risk-taking: z-values

Dependent variable: z-value	(1)		(2)		(3)	
	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM	Dynamic system GMM, non-linear	Dynamic system GMM, non-linear	Dynamic system GMM, non-linear
Lagged dependent variable						
Blockholding	1.1698	(2.61)***	0.3917	(8.36)***	0.3928	(8.37)***
Blockholding^2			1.6092	(1.72)*	2.9180	(0.95)
CEO duality	-0.0828	(-0.51)	-0.0344	(-0.14)	-1.4903	(-0.45)
Board size	1.4873	(2.79)***	-0.3908	(-0.33)	-0.3672	(-0.32)
Board independence	-0.3699	(-0.79)	-0.8649	(-1.09)	-0.8344	(-1.07)
Gender diversity	-0.3600	(-0.54)	-0.7399	(-0.56)	-0.8164	(-0.67)
Leverage	-1.5825	(-3.66)***	-1.4581	(-1.91)*	-1.5266	(-2.02)**
Firm size	0.0189	(0.25)	0.3189	(1.51)	0.3075	(1.49)
Capex	-0.1925	(-0.92)	-1.1871	(-0.63)	-1.3730	(-0.82)
Age	-0.0150	(-0.05)	-0.0607	(-0.27)	-0.0634	(-0.28)
Tangibility	0.4652	(0.85)	1.0832	(1.13)	1.1474	(1.30)
Sales growth	1.2583	(12.04)***	1.6075	(1.65)*	1.8002	(2.07)**
Constant	-3.1586	(-2.55)**	-3.6222	(-1.67)*	-3.7582	(-1.73)*
Industry fixed effects	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Prob. (F statistic)	0.000		0.000		0.000	
R-squared	0.102					
No. of firms	502		502		502	
No. of observations	3136		2634		2634	
No. of instruments			48		50	
Arellano-Bond test: AR(1) (p-value)			0.000		0.000	
Arellano-Bond test: AR(2) (p-value)			0.611		0.575	
Hansen J-test of over-identification (p-value)			0.279		0.309	

(Continued)

Table 12. (Continued)

Dependent variable: z-value	(1)	(2)	(3)
Explanatory variables:	Pooled OLS with industry effects	Dynamic system GMM	Dynamic system GMM, non-linear
Difference-in-Hansen test for exogeneity (<i>p</i> -value)			
GMM instruments for level equation (All)		0.258	0.329
GMM instruments for diff. equation (Lagged performance)		0.568	0.468
GMM instruments for level equation (Lagged performance)		0.568	0.503

Estimated coefficients are reported with heteroskedasticity-robust *t*-statistics in parentheses.

* indicates significance at 10%; ** significance at 5%; *** significance at 1%.

System-GMM estimates are Blundell and Bond (1998) system GMM estimates using a two-equation system of the regression in levels and in first differences.

We compute the standard deviation of industry-adjusted profit rate for the firm i as

$$s_i = \sqrt{\frac{1}{T-1} \sum_{t=1}^T \left(ROA_{i,t}^{adj} - \frac{1}{T} \sum_{t=1}^T ROA_{i,t}^{adj} \right)^2}, \quad 4 \leq T \leq 8,$$

where $ROA_{i,t}^{adj}$ is the difference of the firm i 's ROA with the industry mean ROA (Note: the distribution of these values of $ROA_{i,t}^{adj}$ is winsorized (w) at 0.5% on both its sides before calculating s_i). To avoid collapsing the panel data into a single cross-section when using $s_i \frac{ROA_{i,t}^{adj(w)}}{s_i}$ as a proxy for risk-taking (John et al., 2008), we instead standardize the firm i 's winsorized ROA on yearly base and use these obtained z-values, as a measure of risk-taking.

5. Concluding comments

It is well recognized that ownership concentration plays its role as an internal corporate governance mechanism. In weak institutional environments, ownership concentration can serve as a substitute for weak protection of investor rights and thus improve firm growth (Boubakri et al., 2005; Shleifer & Vishny, 1997). Characterized by concentrated ownership structure, emerging markets and transitional economies have become objectives of scholars for studying the associations of ownership concentration with firm risk-taking and performance. The current literature, however, has not completely defined a linking path of this interplay and has paid an insufficient attention to the potential differences in using alternative measures of performance (i.e., operational profitability and market valuation). With its unique characteristics, Vietnam as a frontier emerging market suits itself to an empirical investigation into these issues of research.

Nguyen et al. (2015) show ownership concentration in an under-developed market such as Vietnam can substitute for its weak national quality and find a significantly positive (log-linear) relation between ownership concentration and market-based measure of performance, Q . In this perspective, our results are complementary to Nguyen et al. (2015)'s evidence in the aspect of a (seemingly u-shaped) non-linear relation between ownership concentration and Q . It should also be noted that the evidence of Nguyen et al. (2015) is based on using a pooled sample of both Singaporean and Vietnamese companies. Our study is therefore the first purely detecting such a concentration-valuation relation in Vietnam. Regarding the accounting-based measure of performance, ROA, we find no evidence of a direct connection with ownership concentration in terms of both linearity and non-linearity. This is in line with the findings by Demsetz and Lehn (1985) and Chen et al. (2005), who also find no positive relation between ownership concentration and firm profitability in U.S. public corporations and Hong Kong family companies, respectively. In other words, a firm's diffuse or concentrated ownership structure does not affect the firm's accounting profit rate. The reason is that ownership concentration should reflect opting decisions made by shareholders relying on their own profit-maximizing interests (Demsetz & Lehn, 1985). Once it is truly treated as an endogenous variable, no systematic relation between ownership concentration and firm performance should be detected.

Furthermore, our study investigates the potential relationship between ownership concentration and corporate risk-taking in order to try to explain the risk-taking channel of the concentration-performance relationship. Using the Glejser's procedure for testing for heteroskedasticity, we find a positive relation between ownership concentration and the riskiness of profitability. This finding is consistent with the argument that large shareholders owning controlling equity stakes promote the firm's risk-taking activities by weakening strategic roles of risk-averse managers (Paligorova, 2010; Shleifer & Vishny, 1986). In Vietnam's weak institutional framework, our empirical evidence advocates that private benefits appeal to dominant shareholders and encourage them to engage in risk-taking activities at the expense of minority investors. Our early finding of no relationship between ownership concentration and firm profitability could be an interpretation of such a minority investor expropriation. For example, the irrelevance of ownership concentration to

accounting performance might be a consequence of tunneling distortions of earnings and assets. Finally, we find no evidence of the association of concentrated ownership with risk-taking behavior in terms of unexpected volatility of market valuation. This implies that the effect of ownership concentration on firm value which is early found as a non-linear curve may not be shaped by firm risk-taking.

Finally, our findings prove that there are differences between using accounting profitability as a measure of firm performance and using market valuation as a measure of firm performance. In the case of Vietnamese firms, connections between concentration and performance and between concentration and risk-taking linked to performance are founded existent in different paths corresponding to the two alternatives of performance measurement. This can be interpreted as a reflection on capital market imperfections distorting investors' realization of a firm's true performance, resulting in essential distortions in their reactions to variations in the firm's ownership concentration. Following the argumentation of Demsetz and Villalonga (2001), this study raises the necessity of considering both accounting- and market-based measures of performance, specifically in emerging markets research. This, which has surprisingly been neglected by researchers, could give a more accurate, comprehensive picture of the ownership structure–performance/ risk-taking relation.

Citation information

Cite this article as: Ownership concentration, corporate risk-taking and performance: Evidence from Vietnamese listed firms, Nam Hoai Tran & Chi Dat Le, *Cogent Economics & Finance* (2020), 8: 1732640.

Notes

1. Some empirical studies find no relation between ownership concentration and firm performance (e.g., Demsetz & Lehn, 1985; McConnell & Servaes, 1990) (with outside block ownership); (Chen et al., 2005; Himmelberg et al., 1999; Mehran, 1995; Prowse, 1992), which is strongly supported by studies accounting for the endogeneity issue of ownership structure (e.g., Demsetz & Villalonga, 2001; Pham, Suchard, & Zein, 2011; Schultz et al., 2010). Others find a linear relation which is either positive (e.g., McConnell & Servaes, 1990 (with institutional investor ownership); Claessens & Djankov, 1999; Claessens, Djankov, Fan, & Lang, 2002; Nguyen et al., 2015; Xu & Wang, 1999) or negative (e.g., Hu, Tam, & Tan, 2010).
2. For example, Wright et al. (1996) find no American evidence of the connection between equity blockholdings and growth-oriented risk-taking, but a positive impact of institutional equity ownership on risk-taking. Using an extensive sample of many countries including the U.S., John et al. (2008) see no relationship between ownership concentration and corporate risk-taking. Paligorova (2010) finds a positive relationship between equity stakes held by controlling shareholders and corporate risk-taking in the context of 38 selected countries. Nguyen (2011) finds that Japanese firms with concentrated ownership exhibit higher idiosyncratic risk. In the context of New Zealand companies, Koerniadi et al. (2014) show a significantly positive correlation between concentrated equity holdings, especially by outside blockholders, and stock return variability.
3. Demsetz and Villalonga (2001) show two important aspects that differentiate the accounting-based measure of performance, i.e., profitability ratios such as *ROA*, from the market-based measure of performance, i.e., Tobin's *Q*: time reflection and human constraints. In the perspective of time, the accounting rate is a backward-looking measure

evaluating what a firm has already achieved, while *Q* is a forward-looking measure evaluating what a firm will (is expected to) achieve. In the perspective of humanity, measuring operational profit rates is constrained by accountant professional standards, while *Q* is a market valuation mediated by investor psychological behaviors. Despite the differences, researchers tend to undoubtedly carry out a bias selection of using the performance measure. Indeed, Demsetz and Villalonga (2001) point that “accounting profit rates have been ignored presumptuously in favor of *Q* in the studies that followed the Demsetz and Lehn study” (p.214).

4. The different effects of ownership concentration on different measures of performance have been implied by previous studies. Ambiguous findings in the U.S. market may be a manifestation of such a phenomenon. Several studies show a consistency in their results using different measures of performance. However, such empirical evidence aiming at a consolidation for U.S. firms is found in differing samples (Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001) or not fully reported (Himmelberg et al., 1999). For non-U.S. contexts, existing results on operational and market performance measures have also leaned toward a consistency, regardless of being with statistical significance (Hu & Izumida, 2008; Thomsen & Pedersen, 2000) or insignificance (e.g., Chen et al., 2005; Schultz et al., 2010). Because the key point for the difference in measuring performance is the reflection on market investors' psychological behaviors in case of *Q*, it is plausible to believe that some market imperfections can be a source of a potential discrepancy in consequent concentration–performance relations. As a result, such a disparity is likely to be seen in capital markets with least efficiency. In markets with high levels of information asymmetry such as emerging markets or particularly “emerging” emerging markets, for example, corporate valuation in terms of market reflections on changes in ownership structure may be essentially distorted. In particular, such variations in ownership can be recognized by investors to go along with monitoring and expropriation effects which can be underestimated or over-estimated by these investors in an environment of asymmetric information. These

- can also lead to serious problems such as adverse selection and moral hazard. If so, it is feasible to think that a market valuation-mediating effect of ownership concentration could be detected even there is truly no accounting effect.
5. Emerging economies with unique characteristics of economic, financial, and institutional environments, including corporate ownership patterns, are regarded as an excellent ground for corporate governance research (Claessens & Yurtoglu, 2013). In these environments, especially emerging economies in transition, ownership concentration could be considered as an efficient corporate governance mechanism substituting for institutional shortfalls, such as weak legal protection of shareholder rights (Claessens & Djankov, 1999; Nguyen et al., 2015). Potential changes in corporate governance efficiency could lead to different consequences of firms' risk-taking orientation in investment decisions and thus different impacts on firm growth. As a result, a vast majority of recent studies on the concentration-risk-taking/performance relationship is contextualized in emerging markets. Nevertheless, most studies focus on either advanced emerging markets or secondary emerging markets. Research in frontier emerging markets, or "emerging" emerging markets, is seriously scanty. Our consolidated study in Vietnam as a typical frontier market economy is a valuable additional piece to the incomplete picture of emerging markets.
 6. We do not claim this to be an original contribution although the fact that corporate governance researchers tend to underestimate methodological problems as raised by this study is surprising.
 7. This variable is used to capture measurement errors in Q .
 8. Simple OLS regressions without cluster effects are reported in Appendixes A–C as a baseline for analyzing determinants of firm performance/risk-taking.
 9. In fact, this correlation in the Vietnamese sample is much lower than that of 0.60 in the U.S. sample as shown by Demsetz and Villalonga (2001). We argue that the divergence between the two measures should be amplified as a reflection on capital market imperfections that distorts market-based measures like Q . In this case, Q could be not good proxy for firm performance.
 10. In fact, estimated coefficients of industry dummies in our results are jointly significant at the 1% level.
 11. Indeed, results from baseline regressions tabulated in Appendixes A and B show significant simple relations of these variables to firm performance, especially to accounting performance. The situation that relations disappear after dealing with endogeneity issues in the research framework of governance–performance relation has been documented in previous studies (e.g., Pham et al., 2011; Schultz et al., 2010). Also, the irrelevance of ownership concentration to ROA found in this study is consistent with previous evidence using profitability rates as a measure of performance (e.g., Chen et al., 2005; Demsetz & Lehn, 1985; Himmelberg et al., 1999; Mehran, 1995; Prowse, 1992; Schultz et al., 2010).
 12. The fact that Nguyen et al. (2015) use the logarithm of Q to test the *log-linear* relation between ownership concentration and firm value also makes a difference.
 13. A huge number of studies has cited Roodman's work, but surprisingly, his call for conducting this

sensitivity test has seemingly been neglected by researchers.

14. We also use alternative measures of ownership concentration such as combined equity holding of the three/five largest shareholders as well as its logistic/logarithmic transformations and corresponding Herfindahl calculations (Claessens & Djankov, 1999; Demsetz & Lehn, 1985; Nguyen, 2011). Untabulated results, which are available upon requests, lead to unchanged inferences about the relations between ownership concentration and corporate risk-taking/performance.

Acknowledgements

We would like to thank the journal editors, especially the reviewing editor David McMillan, and the anonymous reviewers for their evaluation of this paper. The earlier version of the paper was presented at the 2nd Vietnam Symposium in Banking and Finance (VSBF), Ho Chi Minh City, Vietnam, October 2017. We are hugely grateful for the insightful comments and helpful suggestions from session participants, especially from Professor Kenneth M. Lehn, University of Pittsburgh, USA. Critical and constructive comments from anonymous reviewers during the subsequent revision of the paper are also highly appreciated.

Funding

The authors received no direct funding for this research.

Author details

Nam Hoai Tran¹

E-mail: tranhoainam.ueh@gmail.com

ORCID ID: <http://orcid.org/0000-0001-6464-0902>

Chi Dat Le¹

E-mail: chitcdn@ueh.edu.vn

ORCID ID: <http://orcid.org/0000-0002-8317-2523>

¹ School of Finance, University of Economics Ho Chi Minh City, Ho Chi Minh City, Vietnam.

References

- Adams, R., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, 18(4), 1403–1432. doi:10.1093/rfs/hhi030
- Balsmeier, B., & Czarnitzki, D. (2017). Ownership concentration, institutional development and firm performance in Central and Eastern Europe. *Managerial and Decision Economics*, 38(2), 178–192. doi:10.1002/mde.v38.2
- Berle, A., & Means, G. (1932). *The modern corporation and private property*. New York, NY: Macmillan.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. doi:10.1016/S0304-4076(98)00009-8
- Boubaker, S., Nguyen, P., & Rouatbi, W. (2016). Multiple large shareholders and corporate risk-taking: Evidence from French family firms. *European Financial Management*, 22(4), 697–745. doi:10.1111/eufm.v22.4
- Boubakri, N., Cosset, J. C., & Guedhami, O. (2005). Postprivatization corporate governance: The role of ownership structure and investor protection. *Journal of Financial Economics*, 76(2), 369–399. doi:10.1016/j.jfineco.2004.05.003
- Bowsher, C. G. (2002). On testing overidentifying restrictions in dynamic panel data models. *Economics Letters*, 77(2), 211–220. doi:10.1016/S0165-1765(02)00130-1
- Chen, Z., Cheung, Y. L., Stouraitis, A., & Wong, A. W. (2005). Ownership concentration, firm performance,

- and dividend policy in Hong Kong. *Pacific-Basin Finance Journal*, 13(4), 431–449. doi:10.1016/j.pacfin.2004.12.001
- Claessens, S., & Djankov, S. (1999). Ownership concentration and corporate performance in the Czech Republic. *Journal of Comparative Economics*, 27(3), 498–513. doi:10.1006/jcec.1999.1598
- Claessens, S., Djankov, S., Fan, J. P., & Lang, L. H. (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *The Journal of Finance*, 57(6), 2741–2771. doi:10.1111/1540-6261.00511
- Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: A survey. *Emerging Markets Review*, 15, 1–33. doi:10.1016/j.ememar.2012.03.002
- Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics*, 79(2), 431–468. doi:10.1016/j.jfineco.2004.09.004
- Coles, J. L., Lemmon, M. L., & Meschke, J. F. (2012). Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance. *Journal of Financial Economics*, 103(1), 149–168. doi:10.1016/j.jfineco.2011.04.002
- Demsetz, H. (1983). The structure of ownership and the theory of the firm. *The Journal of Law and Economics*, 26(2), 375–390. doi:10.1086/467041
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93(6), 1155–1177. doi:10.1086/261354
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209–233. doi:10.1016/S0929-1199(01)00020-7
- Faccio, M., Marchica, M. T., & Mura, R. (2011). Large shareholder diversification and corporate risk-taking. *The Review of Financial Studies*, 24(11), 3601–3641. doi:10.1093/rfs/hhr065
- Faccio, M., Marchica, M. T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39, 193–209. doi:10.1016/j.jcorpfin.2016.02.008
- Gugler, K., Mueller, D. C., & Yurtoglu, B. B. (2004). Corporate governance and the returns on investment. *The Journal of Law and Economics*, 47(2), 589–633. doi:10.1086/425062
- Hermalin, B. E., & Weisbach, M. S. (1988). The determinants of board composition. *The Rand Journal of Economics*, 19(4), 589–606. doi:10.2307/2555459
- Himmelberg, C., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, 53(3), 353–384. doi:10.1016/S0304-405X(99)00025-2
- Holderiness, C. G., Kroszner, R. S., & Sheehan, D. P. (1999). Were the good old days that good? Changes in managerial stock ownership since the great depression. *The Journal of Finance*, 54(2), 435–469. doi:10.1111/0022-1082.00114
- Hu, H. W., Tam, O. K., & Tan, M. G. S. (2010). Internal governance mechanisms and firm performance in China. *Asia Pacific Journal of Management*, 27(4), 727–749. doi:10.1007/s10490-009-9135-6
- Hu, Y., & Izumida, S. (2008). Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: An International Review*, 16(4), 342–358. doi:10.1111/corg.2008.16.issue-4
- John, K., Litov, L., & Yeung, B. (2008). Corporate governance and risk-taking. *The Journal of Finance*, 63(4), 1679–1728. doi:10.1111/j.1540-6261.2008.01372.x
- Koerniadi, H., Krishnamurti, C., & Tourani-Rad, A. (2014). Corporate governance and risk-taking in New Zealand. *Australian Journal of Management*, 39(2), 227–245. doi:10.1177/0312896213478332
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1), 3–27. doi:10.1016/S0304-405X(00)00065-9
- Le, T. M., & Walker, G. (2008). Corporate governance of listed companies in Vietnam. *Bank Law Review*, 20(2), 1–80.
- McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27(2), 595–612. doi:10.1016/0304-405X(90)90069-C
- Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, 38(2), 163–184. doi:10.1016/0304-405X(94)00809-F
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315. doi:10.1016/0304-405X(88)90048-7
- Nguyen, P. (2011). Corporate governance and risk-taking: Evidence from Japanese firms. *Pacific-Basin Finance Journal*, 19(3), 278–297. doi:10.1016/j.pacfin.2010.12.002
- Nguyen, P. (2012). The impact of foreign investors on the risk-taking of Japanese firms. *Journal of the Japanese and International Economies*, 26(2), 233–248. doi:10.1016/j.jjie.2012.03.001
- Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter? *International Review of Financial Analysis*, 41, 148–161. doi:10.1016/j.irfa.2015.06.005
- Paligorova, T. (2010). Corporate risk taking and ownership structure. Unpublished Working Paper, Bank of Canada.
- Pham, P. K., Suchard, J. A., & Zein, J. (2011). Corporate governance and alternative performance measures: Evidence from Australian firms. *Australian Journal of Management*, 36(3), 371–386. doi:10.1177/0312896211413035
- Prowse, S. D. (1992). The structure of corporate ownership in Japan. *The Journal of Finance*, 47(3), 1121–1140. doi:10.1111/j.1540-6261.1992.tb04007.x
- Roodman, D. (2009). A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics*, 71(1), 135–158. doi:10.1111/obes.2009.71.issue-1
- Schultz, E. L., Tan, D. T., & Walsh, K. D. (2010). Endogeneity and the corporate governance-performance relation. *Australian Journal of Management*, 35(2), 145–163. doi:10.1177/0312896210370079
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461–488. doi:10.1086/261385
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737–783. doi:10.1111/j.1540-6261.1997.tb04820.x
- Short, H., & Keasey, K. (1999). Managerial ownership and the performance of firms: Evidence from the UK. *Journal of Corporate Finance*, 5(1), 79–101. doi:10.1016/S0929-1199(98)00016-9
- Thomsen, S., & Pedersen, T. (2000). Ownership structure and economic performance in the largest European

- companies. *Strategic Management Journal*, 21(6), 689–705. doi:[10.1002/\(\)1097-0266](https://doi.org/10.1002/()1097-0266)
- Tran, N. H., & Le, C. D. (2017). Financial conditions and corporate investment: Evidence from Vietnam. *Pacific Accounting Review*, 29(2), 183–203. doi:[10.1108/PAR-07-2016-0066](https://doi.org/10.1108/PAR-07-2016-0066)
- Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3), 581–606. doi:[10.1016/j.jfineco.2012.03.005](https://doi.org/10.1016/j.jfineco.2012.03.005)
- World Bank. (2013, August). *Corporate governance country assessment: Vietnam*. Washington, DC: David Robinett, Pasquale Di Benedetto, & Anh Nguyet Anh.
- Wright, P., Ferris, S. P., Sarin, A., & Awasthi, V. (1996). Impact of corporate insider, blockholder, and institutional equity ownership on firm risk taking. *Academy of Management Journal*, 39(2), 441–458.
- Xu, X., & Wang, Y. (1999). Ownership structure and corporate governance in Chinese stock companies. *China Economic Review*, 10(1), 75–98. doi:[10.1016/S1043-951X\(99\)00006-1](https://doi.org/10.1016/S1043-951X(99)00006-1)
- Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: Comment. *Journal of Financial Economics*, 62(3), 559–571. doi:[10.1016/S0304-405X\(01\)00085-X](https://doi.org/10.1016/S0304-405X(01)00085-X)

Appendices

Appendix A. Simple OLS regression of firm profitability

Dependent variable:

ROA

Explanatory variables:	(1)						(2)		(3)		(4)		(5)		(6)	
	w/o controls	w/ firm characteristics		w/ firm characteristics and board composition		w/ firm characteristics, board composition, and industry effects		w/ firm characteristics, board composition, and year effects		w/ firm characteristics, board composition, and industry & year effects		w/ firm characteristics, board composition, and industry & year effects		w/ firm characteristics, board composition, and industry & year effects		
Blockholding	0.0503	(5.75)***	0.0454	(5.49)***	0.0492	(5.88)***	0.0391	(4.81)***	0.0545	(6.62)***	0.0452	(5.62)***	0.0545	(6.62)***	0.0452	(5.62)***
CEO duality					-0.0038	(-1.09)	-0.0064	(-1.92)*	-0.0038	(-1.11)	-0.0063	(-1.91)*	-0.0038	(-1.11)	-0.0063	(-1.91)*
Board size					0.0445	(4.93)***	0.0368	(4.20)***	0.0413	(4.66)***	0.0351	(4.05)***	0.0413	(4.66)***	0.0351	(4.05)***
Board independence					-0.0192	(-2.29)**	-0.0180	(-2.23)**	-0.0166	(-2.03)**	-0.0158	(-1.99)**	-0.0166	(-2.03)**	-0.0158	(-1.99)**
Gender diversity					0.0225	(2.33)**	-0.0066	(-0.69)	0.0229	(2.42)**	-0.0041	(-0.44)	0.0229	(2.42)**	-0.0041	(-0.44)
Leverage			-0.0946	(-13.82)***	-0.0928	(-13.40)***	-0.0989	(-14.64)***	-0.0927	(-13.64)***	-0.0991	(-14.88)***	-0.0927	(-13.64)***	-0.0991	(-14.88)***
Firm size			0.0071	(5.88)***	0.0057	(4.59)***	0.0084	(6.74)***	0.0061	(4.97)***	0.0085	(6.92)***	0.0061	(4.97)***	0.0085	(6.92)***
Copex			-0.0250	(-3.48)***	-0.0261	(-3.63)***	-0.0076	(-1.09)	-0.0285	(-4.04)***	-0.0111	(-1.61)	-0.0285	(-4.04)***	-0.0111	(-1.61)
Age			-0.0266	(-7.99)***	-0.0263	(-7.87)***	-0.0327	(-10.16)***	-0.0010	(-0.23)	-0.0120	(-2.92)***	-0.0010	(-0.23)	-0.0120	(-2.92)***
Tangibility			0.0312	(4.09)***	0.0295	(3.86)***	-0.0002	(-0.03)	0.0241	(3.20)***	-0.0024	(-0.31)	0.0241	(3.20)***	-0.0024	(-0.31)
Sales growth			0.0704	(15.82)***	0.0694	(15.63)***	0.0684	(16.18)***	0.0638	(14.35)***	0.0638	(14.97)***	0.0638	(14.35)***	0.0638	(14.97)***
Constant	0.0669	(14.49)***	0.0400	(2.63)***	-0.0098	(-0.51)	-0.0092	(-0.46)	-0.0254	(-1.27)	-0.0278	(-1.34)	-0.0254	(-1.27)	-0.0278	(-1.34)
Industry fixed effects	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Year fixed effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Prob. (F statistic)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
R-squared	0.010		0.155		0.165		0.246		0.199		0.194		0.268		0.262	
Adj. R-squared	0.010		0.154		0.162		0.241		0.194		0.194		0.262		0.262	
No. of firms	502		502		502		502		502		502		502		502	
No. of observations	3136		3136		3136		3136		3136		3136		3136		3136	

Estimated coefficients are reported with t-statistics in parentheses. * indicates significance at 10%, ** significance at 5%, *** significance at 1%.

Appendix B. Simple OLS regression of firm valuation

		Q					
Dependent variable:		(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables:	w/o controls	w/firm characteristics	w/firm characteristics and board composition	w/firm characteristics, board composition, and industry effects	w/firm characteristics, board composition, and year effects	w/firm characteristics, board composition, and industry & year effects	
	Blockholding	0.3101 (10.65)***	0.2059 (7.02)***	0.2084 (7.02)***	0.1997 (6.62)***	0.1923 (6.84)***	0.1745 (6.12)***
CEO duality			0.0330 (2.66)***	0.0324 (2.61)***	0.0328 (2.81)***	0.0316 (2.70)***	
Board size			0.0331 (1.05)	0.0346 (1.08)	0.0385 (1.29)	0.0414 (1.37)	
Board independence			0.1198 (4.07)***	0.1163 (3.92)***	0.0905 (3.25)***	0.0844 (3.02)***	
Gender diversity			-0.0267 (-0.78)	-0.0512 (-1.43)	-0.0341 (-1.05)	-0.0606 (-1.80)*	
ROA _t		1.0952 (10.98)***	1.0944 (10.99)***	1.0638 (10.64)***	0.9825 (10.37)***	0.9508 (10.03)***	
ROA _{t-1}		0.3364 (3.67)***	0.3446 (3.77)***	0.3206 (3.48)***	0.6069 (6.93)***	0.5833 (6.64)***	
Leverage		-0.0157 (-0.63)	-0.0028 (-0.11)	-0.0106 (-0.41)	0.0107 (0.45)	0.0062 (0.26)	
Firm size		0.0287 (6.70)***	0.0259 (5.83)***	0.0281 (5.92)***	0.0239 (5.70)***	0.0263 (5.89)***	
Capex		0.0395 (1.53)	0.0343 (1.32)	0.0378 (1.43)	0.0299 (1.22)	0.0374 (1.51)	
Age		0.0800 (5.47)***	0.0824 (5.61)***	0.0744 (4.96)***	-0.0306 (-1.87)*	-0.0489 (-2.91)***	
Tangibility		-0.0753 (-2.81)***	-0.0783 (-2.90)***	-0.0867 (-3.04)***	-0.0656 (-2.57)***	-0.0769 (-2.87)***	
Sales growth		-0.0092 (-0.53)	-0.0087 (-0.50)	-0.0078 (-0.45)	-0.0042 (-0.25)	-0.0031 (-0.19)	
Constant	0.7805 (50.74)***	0.1968 (3.48)***	0.0903 (1.31)	0.0672 (0.89)	0.3655 (5.31)***	0.3572 (4.82)***	
Industry fixed effects	No	No	No	Yes	No	Yes	
Year fixed effects	No	No	No	No	Yes	Yes	
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000	
R-squared	0.037	0.225	0.232	0.239	0.319	0.330	
Adj. R-squared	0.036	0.222	0.228	0.233	0.313	0.323	
No. of firms	480	480	480	480	480	480	
No. of observations	2980	2500	2500	2500	2500	2500	

Estimated coefficients are reported with t-statistics in parentheses. * indicates significance at 10%; ** significance at 5%; *** significance at 1%.

Appendix C. Simple OLS regression of firm risk-taking

Firm Risk-taking = (Dependent variable)	Absolute deviation from expected ROA ($ e_{ROA} $)						Absolute deviation from expected Q ($ e_Q $)					
	(1)		(2)		(3)		(4)		(5)		(6)	
Explanatory variables:	w/o controls	w/ firm characteristics	w/ firm characteristics and board composition	w/ firm characteristics	w/ firm characteristics and board composition	w/ firm characteristics and board composition	w/o controls	w/ firm characteristics	w/ firm characteristics	w/ firm characteristics	w/ firm characteristics and board composition	w/ firm characteristics and board composition
Blockholding	0.0231 (4.50)***	0.0234 (4.78)***	0.0230 (4.62)***	0.0230 (4.62)***	0.0230 (4.62)***	0.0230 (4.62)***	0.1098 (5.55)***	0.0611 (3.27)***	0.0611 (3.27)***	0.0659 (3.49)***	0.0659 (3.49)***	0.0659 (3.49)***
CEO duality			-0.0016 (-0.76)	-0.0016 (-0.76)	-0.0016 (-0.76)	-0.0016 (-0.76)				0.0182 (2.32)**	0.0182 (2.32)**	0.0182 (2.32)**
Board size			0.0075 (1.39)	0.0075 (1.39)	0.0075 (1.39)	0.0075 (1.39)				0.0510 (2.54)**	0.0510 (2.54)**	0.0510 (2.54)**
Board independence			0.0041 (0.82)	0.0041 (0.82)	0.0041 (0.82)	0.0041 (0.82)				0.0650 (3.47)***	0.0650 (3.47)***	0.0650 (3.47)***
Gender diversity			0.0011 (0.19)	0.0011 (0.19)	0.0011 (0.19)	0.0011 (0.19)				0.0286 (1.31)	0.0286 (1.31)	0.0286 (1.31)
ROA _t										0.3278 (5.16)***	0.3278 (5.16)***	0.3278 (5.16)***
ROA _{t-1}										0.2259 (3.88)***	0.2259 (3.88)***	0.2291 (3.94)***
Leverage		-0.0670 (-16.53)***	-0.0659 (-15.99)***	-0.0659 (-15.99)***	-0.0659 (-15.99)***	-0.0659 (-15.99)***		-0.2169 (-13.78)***	-0.2169 (-13.78)***	-0.2067 (-13.02)***	-0.2067 (-13.02)***	-0.2067 (-13.02)***
Firm size		0.0008 (1.06)	0.0004 (0.55)	0.0004 (0.55)	0.0004 (0.55)	0.0004 (0.55)		0.0086 (3.14)***	0.0086 (3.14)***	0.0057 (2.01)**	0.0057 (2.01)**	0.0057 (2.01)**
Capex		0.0068 (1.61)	0.0060 (1.41)	0.0060 (1.41)	0.0060 (1.41)	0.0060 (1.41)		0.0274 (1.66)*	0.0274 (1.66)*	0.0218 (1.32)	0.0218 (1.32)	0.0218 (1.32)
Age		-0.0100 (-5.09)***	-0.0103 (-5.18)***	-0.0103 (-5.18)***	-0.0103 (-5.18)***	-0.0103 (-5.18)***		-0.0016 (-0.18)	-0.0016 (-0.18)	-0.0004 (-0.04)	-0.0004 (-0.04)	-0.0004 (-0.04)
Tangibility		0.0040 (0.89)	0.0034 (0.74)	0.0034 (0.74)	0.0034 (0.74)	0.0034 (0.74)		0.0184 (1.08)	0.0184 (1.08)	0.0186 (1.08)	0.0186 (1.08)	0.0186 (1.08)
Sales growth		0.0260 (9.87)***	0.0257 (9.75)***	0.0257 (9.75)***	0.0257 (9.75)***	0.0257 (9.75)***		0.0035 (0.32)	0.0035 (0.32)	0.0027 (0.25)	0.0027 (0.25)	0.0027 (0.25)
Constant	0.0465 (17.22)***	0.0713 (7.94)***	0.0619 (5.42)***	0.0619 (5.42)***	0.0619 (5.42)***	0.0619 (5.42)***	0.1090 (10.39)***	0.0389 (1.08)	0.0389 (1.08)	-0.0643 (-1.46)	-0.0643 (-1.46)	-0.0643 (-1.46)
Industry fixed effects	No	No	No	No	No	No	No	No	No	No	No	No
Year fixed effects	No	No	No	No	No	No	No	No	No	No	No	No
Prob. (F statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.006	0.132	0.133	0.133	0.133	0.133	0.012	0.176	0.176	0.185	0.185	0.185
Adj. R-squared	0.006	0.130	0.130	0.130	0.130	0.130	0.012	0.173	0.173	0.180	0.180	0.180
No. of firms	502	502	502	502	502	502	480	480	480	480	480	480
No. of observations	3136	3136	3136	3136	3136	3136	2500	2500	2500	2500	2500	2500

Estimated coefficients are reported with t-statistics in parentheses. * indicates significance at 10%, ** significance at 5%, *** significance at 1%.



© 2020 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



***Cogent Economics & Finance* (ISSN: 2332-2039) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

