The Economic Freedom, Corporate Governance and Risk-taking Behavior: Evidence from the European Life Insurance Industry

Hui-Hsuan Liu[1] and Chin-Chi Liu[2]

Abstract

Prior studies have documented that risk-taking behavior is a determinant of firm-level corporate governance. However, the country-level corporate governance to risk-taking behavior has not been well examined. The main topic of this study not only intends to examine the relation between corporate governance and risk taking behavior but also investigates whether this relation can be influenced by the economic freedom. Using a sample of 552 EU life insurers over 1995–2016 periods, consistent with the expectation, the results support that insurers with good corporate governance tend to take risk-taking, and those with higher economic freedom dependence tend to maintain higher risk-taking. In addition, firms in high economic freedom countries have more opportunities to take risk, further have significant negatively relationship between country-level risk-taking behavior and shareholder ownership concentration. Given that better corporate governance is instrumental in taking risk, firms in high economic freedom countries have more opportunities to risk taking.

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[1] Department of Finance, Ling Tung University.
[2] Department of Finance, Ling Tung University. *Corresponded Author.

1. Introduction

Started with sub-prime mortgage crisis in 2007, the bankruptcy of Lehman Brothers in September 2008 tumbled the international market. Over this financial tsunami, not only the banking industry, insurance industry also got involved. American International Group Inc. (AIG) suffered from a liquidity crisis when its credit ratings were downgraded below "A-" levels in September 2008. Unlike other industries, insurance industry undertakes the public interest and loss. Once the financial difficulty bursts out, the effect is more severe and widespread than non-insurer firms. The so called financial storm evokes public to review the risk-taking behavior of financial institutions.

While most studies suggest that the main factors to risk-taking behavior include manager ownership (Cummins and Sommer, 1996; Chen, Steiner and White, 2001), CEO negation power (Hermalin and weisbach, 1998 and Adams, Almeida and Ferreira, 2005) and board composition (Mayers et al., 1997; Fama, 1980). Furthermore, regarding the determinant of corporate board have found that board size (Boone, Field, Karpoff, and Raheja, 2007; Dalton et al., 1999; Yermack, 1996), shareholder's concentration (La Porta et al., 1998; Guedhami and Mishra, 2008) and board independence (Hermalin and weisbach, 1988 and He, 2007).

As risk intermediaries, insurance companies face a wide range of risks. There are two ways to control the risks: the country-level legal protection and the firm-level corporate governance. The policy makers constantly try to revise legislation to facilitate better monitoring of financial activities including their risk-taking. Insurers are more extremely regulated to prevent from any systematic risk and to protect the interest of policyholders. Booth (2007) shows that due to the bilateral informational asymmetries characteristic of insurance industry; the regulation can prevent the adverse effects of information asymmetries for illiquid contracts. In addition, regulation can be a protection to ensure insurers commit to their contracts. Numerous banking studies underscore the importance of regulation (Gonzalez, 2005; Konishi and Yasuda, 2004; Park, 1997). John, Litov, and Yeung (2008) use the investor protection index provided by La Porta et al. (1998) to examine the relationship between corporate governance and risk-taking. However, this investor protection proxy is criticized by several authors (Pagano and Volpin, 2005) for several conceptual ambiguities. Therefore, we take anti-self-dealing index to address the legal protection of minority shareholders against expropriation by corporate insiders. It is a new measure from a new experiment design provided by Djankov et al. (2008). In sum, corporate governance varies widely across countries and across firms. Doidge, Karolyi and Stulz (2007) find that country characteristics explain much more of the variance in governance rating than observable firm characteristics. It is important to examine the corporate governance to affect risk-taking behavior by country characteristics of governance.

Economic freedom will develop and use their productive abilities, exchange goods and services with others, compete in markets, and keep the fruits of their labor (Gwartney and Lawson, 2007). The level of economic freedom differs from one

country to another. As shown in Figure 1 form the Heritage Foundation Index of Economic Freedom, it shows that after year 2001, the index of Europe started to exceed the index of Americas. We refer the tendency of economic freedom in Europe; therefore, the influence of economic freedom in Europe should be taken into considered.

We believe that this study contributes to broaden literatures on corporate governance and risk-taking behavior in the following ways. First, prior literature (e.g., John, Litov, and Yeung, 2008) has empirically examined the relationship between investor protection and risk-taking behavior. The investor protection proxy they used is not appropriate. The completeness and coverage of anti-self-dealing is better than the anti-director measure of investor protection index. Second, few studies directly investigate this relationship in the insurance industry. An exception is Chen, Steiner and White (2001), who shows that life insurer's risk increases with managerial ownership. However, managerial ownership generally is considered as only one aspect of corporate governance. In our study, we will use a number of measures to characterize each insurer's corporate governance. Third, to our knowledge, no prior research has examined the interaction between country-level legal protection and firm-level corporate governance in decreasing / increasing an insurer's risk taking behavior. We take economic freedom and financial freedom from Heritage Foundation / Wall Street Journal to be the standards to divide countries into two subgroups respectively.
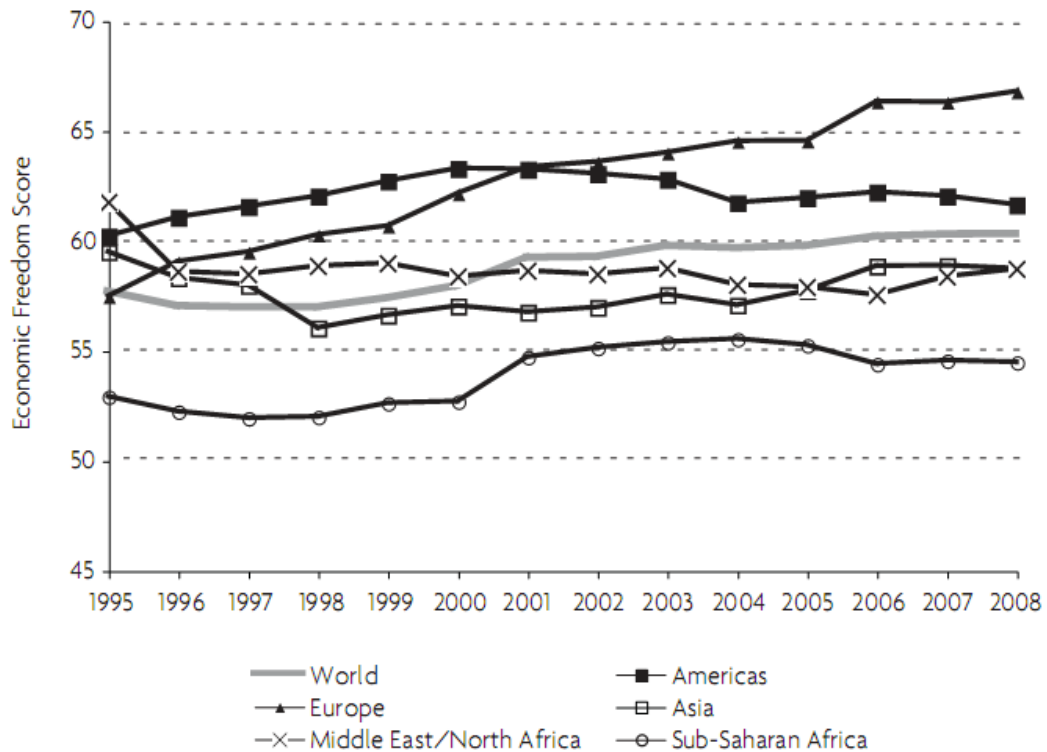
Figure 1: The Average of Worldwide Economic Freedom Index

Two prior studies that are closely connected to ours include Lai and Lin (2008) and Chen, Steiner and White (2001). However, several major differences exist. They focus on the determinants of the board structure for property-liability insurers and managerial ownership for US life insurance industry respectively. However, the board structure and managerial ownership are considered as only part of corporate governance. Furthermore, both studies all have not considered the country characteristics of governance. Therefore, we use data from life insurers and include completely characteristics of firm-level governance; furthermore, we examine the interaction between country-level and firm-level corporate governance within cross country data to gauge the relationship.

2. Literature review and hypothesis

2.1 Firm-level Risk Taking Behavior and Corporate Governance

Based on the agency theory, managers have competing agency relationships with shareholders and policyholders. In the modes of governance of stock companies in the life insurance industry, shareholders direct financial flows within the company away from policyholders and towards themselves, especially large shareholders, can utilize more pressure over managers than small disparate policyholders. In

addition, managers often have the discretion to change firm risk through investment projects selection, while shareholders can diversify their risk in capital market. For their own private benefits, managers may be conservative and avoid taking risks in investments, including value-enhancing ones (Hirshleifer and Thakor, 1992). Especially when the managers only receive fixed salaries, they would not acquire additional reward as who compensated with shares and share option (Pathan, 2009). Therefore, managers have slight benefit from performing extremely well, while they probably lose their jobs if the firm fails. However, Staking and Babbel (1995), Cummins and Sommers (1996) and Chen, Steiner and White (2001) advanced by is the wealth transfer hypothesis versus risk aversion hypothesis, they argue that if managers enlarge the proportion of ownership, their behavior and interest will align with shareholders' interests and have strong motivation to maximize theirs' value by increase the level of risk. Overall, we agree that the managerial ownership is an important effect the risk-taking behavior by the wealth transfer hypothesis.

Numerous researches use corporate governance by appropriateness of chief executive officer (CEO) duality (Rechner and Dalton, 1991). In the life insurance industries, CEOs is likely to be the person with the most power and influence within the company. Outside (non-management) directors on the board influence the decisions of hiring and firing the CEOs (Brookman and Thistle, 2009). If the CEOs is part of the board, they often exploit theirs' power and negotiate with their board of directors to seize some private benefit, further have more power to influence the decision making (Adams, Almeida, and Ferreira, 2005). Pathan (2009) follows the concept of Fama and Jensen (1983), Weisbach (1998) and Hermalin and Weibach (2003), documenting bank risk-taking is positively related to strong board while negatively related to CEOs power. Wen and Chen (2008) show that an executive with the dual role as a chairman of the board has a negatively impact on the firm's risk strategy. So CEOs is an important factor to affect the risk-taking behavior.

Board size is closely related to several firm operating and industry characteristics. These firm attributes are classified into three hypotheses: scope of operations hypothesis, monitoring hypothesis and negotiation hypothesis (Boone, Field, Karpoff, and Raheja, 2007). We base on the second view is monitoring hypothesis. The degree of information asymmetry and the size monitoring cost determine the board size (Demsetz and Lehn, 1985; Raheja, 2005). Hermalin and Weisbach (2003) suggest that a small level of board size allows for more effective monitoring and improves firm performance. Jensen (1993) also indicates that larger boards could be less effective than smaller boards because of coordination problems and director free-riding. Overall, we use the internal governance mechanism (shareholder independence, board size and CEOs) to be the firm-level corporate governance, arguments hypothesis one can be stated as:

Hypothesis 1：Other things equal, stronger firm-level corporate governance leads life insurers to engage in higher level of risk-taking behavior.

2.2   The Effect of Economic Freedom on the Relationship between Country-level Risk Taking Behavior and Corporate Governance

McMullen, Bagby, and Palich (2008) document that governance restrictions of economic freedom appear to impact entrepreneurial activity differently depending on the particular freedom restricted by government and the entrepreneur's motive for engaging in entrepreneurial action. Firms within high economic freedom countries have more opportunities to get in different businesses, the political and legislative power force firms tend to take more risky behaviors. Berggren (2003) suggests several reasons that relate to institutions that guarantee economic freedom plausibly have capacity to provide the growth-enhancing kind of incentives: first, they promote a high return on productive efforts through low taxation, an independent legal system and the protection of private property; Second, they enable talent to be allocated to where it generates the highest value (Murphy, Shleifer, and Vishny, 1991); third, because experimentally organized economy in which a large amount of business trial and error can be take placed (Johansson, 2001). Lastly, they facilitate predictable and rational decision making through a low and stable inflation rate. Insurance industry is a highly regulated industry. The legislation limits the firms' operation and may influence the risk-taking behavior. The differences in economic freedom may help to explain why firms are financed and owned so differently in different countries. In sum, a country with a higher level of economic freedom allows insurers to pursue riskier but value enhancing activities. In theory, it is likely that country-level economic freedom interacts with firm-level corporate governance in increasing risk taking behavior. Overall, the hypothesis is stated as follows:

Hypothesis 2: Other things equal, the relation between firm-level corporate governance and risk-taking behavior is stronger in countries that have higher level of economic freedom than in countries that have lower level of economic freedom.

3. Data, research design and methodology
3.1   Data Description and Diagnostics
We mainly use the Eurothesys and ISIS database to retrieve the data for variables used in this research. The Eurothesys include financial statements of insurers in 76 countries all over the world. The ISIS database can reveal detail insurance financial information: audit, shareholder ownership, manager's name etc. all over the world. Our study employs an unbalanced sample of yearly-based panel database of 552 life insurance companies in 13 European Union (EU) countries. Table 1 presents our data coverage; Table 2 presents the Economic freedom index of each country.

Table 1: The composition of sample			
Country	Numbers of life insurance firms in this country	Year of EU entry	2002/83/EC Entry into force
Austria	34	1995	2003/7/1
Belgium	32	1951	2004/5/28
Denmark	24	1973	2004/1/1
Finland	15	1995	2004/6/1
France	74	1951	2004/6/5
Germany	124	1951	2004/1/1
Greece	4	1981	2005/2/14
Italy	45	1951	2004/1/1
Netherlands	37	1951	2003/12/2
Portugal	13	1986	2003/10/19
Spain	34	1986	2004/2/22
Sweden	11	1995	2004/1/1
UK	105	1973	2005/1/11
Total	552		

Table 2: The summary of all economic freedom index											
Country	Ranking	Economic Freedom	Business Freedom	Trade Freedom	Fiscal Freedom	Government Size	Monetary Freedom	Investment Freedom	Financial Freedom	Property Rights	Freedom from Corruption	Labor Freedom
		ECFR	BUFR	TRFR	FCFR	GOSI	MOFR	INFR	FIFR	PRRI	FRCO	LAFR
Austria	30	70	80.6	86	51.2	25.3	81.4	70	70	90	86	59.2
Belgium	20	71.5	93.7	86	43.9	17.9	80.4	90	80	80	73	69.9
Denmark	11	79.2	99.9	86	35	19.8	86.5	90	90	90	95	99.9
Finland	16	74.8	95.2	86	64.3	29.1	88.5	70	80	90	96	48.8
France	48	65.4	87.1	81	53.2	13.2	81.2	60	70	70	74	63.8
Germany	23	71.2	88.9	86	58.4	34	81.4	80	60	90	80	52.8
Greece	80	60.1	69.5	81	65.6	57.8	78.5	50	50	50	44	54.3
Italy	64	62.5	76.8	81	54.3	29.4	80.6	70	60	50	49	73.5
Netherlands	13	76.8	88	86	51.6	38.2	86.9	90	90	90	87	60.5
Portugal	53	64.3	79.6	86	61.3	32.6	79.4	70	50	70	66	48
Spain	31	69.7	77.5	86	54.5	56.2	78.1	70	80	70	68	56.7
Sweden	27	70.4	94.8	86	32.7	3.9	82.8	80	80	90	92	62
UK	10	79.5	90.8	86	61.2	40.1	80.7	90	90	90	86	80.7

3.2 Modal and Methodology

As discussed above, we examine the relationship between corporate governance and risk-taking behavior, and then investigate the moderating effect of different levels of economic freedom on the relationship of corporate governance and risk-taking behavior. Furthermore, we divide the sample into two groups. Insurers in the first group are in countries with a high level economic freedom, while those in the second group are in countries with a low level of economic freedom. We, therefore, construct these equations as follows:

$$Risk1_{i,t} = \beta_0 + \beta_1 BORS_{i,t} + \beta_2 CEOP_{i,t} + \beta_3 SHAC_{i,t} + \beta_4 CV_{i,t} + \varepsilon_{1,i,t} \tag{1}$$

$$Risk2_{i,t} = \beta_0 + \beta_1 BORS_{i,t} + \beta_2 CEOP_{i,t} + \beta_3 SHAC_{i,t} + \beta_2 BORS_{i,t} * EF_{hight,i,t}$$
$$+ \beta_3 CEOP_{i,t} * EF_{hight,i,t} + \beta_4 SHAC_{i,t} * EF_{hight,i,t} + \beta_5 CV_{2,i,t} + \varepsilon_{2,i,t} \tag{2}$$

$$Risk2_{i,t} = \beta_0 + \beta_1 BORS_{i,t} + \beta_2 CEOP_{i,t} + \beta_3 SHAC_{i,t} + \beta + \beta_2 BORS_{i,t} * EF_{low,i,t}$$
$$+ \beta_3 CEOP_{i,t} * EF_{low,i,t} + \beta_4 SHAC_{i,t} * EF_{low,i,t} + \beta_5 CV_{2,i,t} + \varepsilon_{2,i,t} \tag{3}$$

Where $Risk_{i,t}$ denotes the earnings volatility of life insurer i in year t, we follow John, Litov and Yeund (2008) to compute it to represent the firm-level and country-level risk-taking behavior respectively. $BORS_{i,t}$, $CEOP_{i,t}$ and $SHAC_{i,t}$ are the firm-level of corporate governance mechanism in the life insurance industry. $EF_{i,t}$ is the economic freedom index of life insurer i in year t, it represents the country characteristics of governance mechanism. In addition, we divide my sample into two groups, $EF_{hight,i,t}$ means the life insurer i in year t in the high economic freedom country; $EF_{low,i,t}$ means the life insurer i in year t in the low economic freedom country. $CV_{1,i,t}$ and $CV_{2,i,t}$ are two different sets of control variables which can be identified effect the firm-level and country-level risk-taking behavior. $\varepsilon_{1,i,t}$ and $\varepsilon_{2,i,t}$ are the error term. In addition, we undertake a robustness check by divide our sample firms by the ten dimensions of economic freedom: Economic Freedom (ECFR), Business Freedom (BUFR), Trade Freedom (TRFR), Fiscal Freedom (FCFR), Government Size (GOSI), Monetary Freedom (MOFR), Investment Freedom (INFR), Financial Freedom (FIFR), Property Rights (PRRI), Freedom from Corruption (FRCO), and Labor Freedom (LAFR).

4. Empirical results

4.1 Descriptive Statistic and Correlation

Table 3 presents all variables of the descriptive statistics and correlation matrix. Correlation coefficient indicates the strength and direction of a linear relationship between two random variables. All the coefficient values are less than 0.5.

Table 3: Descriptive statistics of all variables and correlation matrix							
	Min.	Max.	Median	Mean	Q1	Q3	Std.Dev.
Panel A: Descriptive statistic							
RISK 1	0.00	62.04	0.01	0.38	0.00	0.02	3.85
RISK 2	0.01	1.72	0.01	0.18	0.01	0.02	0.48
BORS	0.00	74.00	6.00	6.91	4.00	9.00	5.12
CEOP	0.00	1.00	1.00	0.54	0.00	1.00	0.50
SHAC	1.00	4.00	4.00	3.60	4.00	4.00	0.88
SIZE	3.11	17.64	6.84	9.01	5.48	12.88	3.92
CONS	0.00	1.00	0.00	0.18	0.00	0.00	0.38
LEV	50.22	158.25	63.50	85.58	9.89	38.41	17.70
REIN	0.25	79.00	43.04	26.59	7.83	27.16	22.91
ASDI	0.33	0.66	0.33	0.38	0.33	0.39	0.09
Panel B: Correlation matrix							
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
(a)	RISK1	---								
(b)	BORS	-0.052***	---							
(c)	CEOP	-0.009***	-0.130*	---						
(d)	SHAC	-0.009***	-0.094*	0.234***	---					
(e)	ASDI	0.191***	0.127**	-0.153***	-0.005	---				
(f)	SIZE	0.095**	0.028**	0.090**	0.085*	0.384***	---			
(g)	CONS	0.044	-0.148***	-0.055	-0.004	-0.022	0.001	---		
(h)	LEV	0.015	0.030	-0.067*	0.059**	0.011**	-0.158***	-0.039*	---	
(i)	REIN	0.013**	-0.065***	0.091**	-0.072*	-0.031	0.134***	0.102**	-0.026**	---

4.2 Firm-level risk taking behavior and corporate governance

Table 4 presents OLS estimates of the determinants of the firm-level risk-taking. The importance of board size (BORS), CEO duality (CEOP) and shareholder's ownership concentration (SHAC) leads to significant positive relationship with firm-level risk-taking. In addition, the positive relationship between ASDI and risk-taking behavior interprets that high hurdles to self-dealing induce the investors to eliminate the fear of being expropriated. In our data sample, 72% firms are independent company. CONS the same has a positive coefficient, consist of our expectation that firms affiliate with groups have more resource and investment

opportunities to take risk. LEV is negatively related to risk-taking behavior. In life insurance industry, the policyholders with the fixed long-term claims act as the bondholders in other industry. Higher leverage life insurers have higher probability to face underinvestment problem. Therefore, the negative relation result is as expected. REIN is negatively relevant to the risk-taking behavior. The result may due to the use of reinsurance is a sign that the insurers have more tendencies to avoid risks.

Table 4: Firm-level Risk-taking Behavior and Corporate Governance

	Dependent Variable: Firm-level Risk-Taking, *RISK 1*			
	(1)	(2)	(3)	(4)
BORS	-0.0011**			-0.0001**
	(0.0385)			(0.6353)
CEOP		-0.0013**		-0.0008**
		(0.0491)		(0.0431)
SHAC			-0.0015**	-0.0001**
			(1.0454)	(0.0632)
ASDI	5.9186**	6.0055**	6.0084**	5.9092**
	(0.0497)	(0.0436)	(0.0486)	(0.0476)
SIZE	0.0205**	0.0236**	0.0226**	0.0187**
	(0.0377)	(0.0388)	(0.0358)	(0.0378)
CONS	0.0028	0.0033	0.0033	0.0002
	(0.9751)	(1.1168)	(1.1063)	(0.9552)
LEV	-0.0013*	-0.0013*	-0.0014*	-0.0001*
	(0.7133)	(0.0747)	(0.0732)	(0.0864)
REIN	0.0001*	0.0001*	0.0001*	0.0001*
	(0.9447)	(0.738)	(0.7705)	(0.6674)
Constant	-2.1466**	-2.2578**	-2.2459**	-2.1276**
	(0.0347)	(0.0368)	(0.0482)	(0.0409)
Adjusted R^2	0.2172	0.2154	0.2169	0.2774
F-statistic	3.5732***	3.5443***	3.5453***	3.6711***
(*p*-value)	(0.0018)	(0.0019)	(0.0019)	(0.0069)

4.3   The effect of economic freedom on the relationship between country-level risk taking behavior and corporate governance

Table 5 reports the regression results of ordinary least squares (OLS) estimates of country-level risk-taking behavior from both the high and low economic freedom sub-samples. In addition, SHAC and CEOP are statistically significant to the all dimensions of economic freedom. This illustrates that, under the high economic freedom environment, the shareholder ownership has more negative impact on the risk-taking behavior. Furthermore, BORS is only not statistically significant to the two dimensions of economic freedom (LAFR and FIFR). In the closely-held companies, shareholders' profit or lost is highly rely on the firm's risk-taking behavior and performance. Although they expect abnormal return from risky investment, shareholders in closely-held company have more opportunities to suffer unsystematic risk. This result is also consistent with corporate bank evidence by John, Litov, and Yeung (2008).

Table 5: Country-level risk taking behavior and corporate governance divided by economic freedom							
Dependent Variable: Contry-level Risk-Taking, *RISK 2*							
	(1) ECFR_high	(2) ECFR_LOW	(3) BUFR_high	(4) BUFR_low	(5) FCFR_high	(6) FCFR_low	(7) GOSI_high	(8) GOSI_low
BORS	-3.3263***	22.0333**	-0.3337***	1.6779***	-2.2032	1.3447***	-3.2325***	1.9568***
	(0.0004)	(0.0003)	(0.0004)	(0.0000)	(0.0001)	(0.0001)	(0.0002)	(0.0002)
CEOP	-1.5713***	1.9434***	-1.1045***	1.2423***	-1.1254***	1.2266***	-1.5842***	1.8806***
	(-0.0008)	(0.0005)	(0.0008)	(0.0000)	(0.0003)	(0.0002)	(0.0003)	(0.0003)
SHAC	-5.2983***	1.1552***	-5.3154***	0.0481***	-0.4597***	1.4093***	-1.4107***	2.1403***
	(0.0006)	(0.0002)	(0.0007)	(0.0000)	(0.0000)	(0.0002)	(0.0001)	(0.0003)
ASDI	12.4643	4.6524	37.6648	-6.2364**	142.8862	4.2206	181.8763	4.1419
	(5.1792)	(3.1304)	(4.7273)	(0.0237)	(5.1839)	(2.3054)	(5.2077)	(1.7157)
SIZE	22.3243**	1.7658***	8.2407**	4.8162***	29.1968**	2.7623***	34.5107***	3.4733***
	(0.0258)	(0.0023)	(0.0379)	(0.0041)	(0.0297)	(0.0032)	(0.0281)	(0.0068)
CONS	1.9343***	-0.3739*	-2.0755***	1.7498***	-3.4622***	2.3727***	-2.2063***	2.4438***
	(0.0006)	(0.0639)	(0.0006)	(0.0083)	(0.0002)	(0.0001)	(0.0001)	(0.0008)
LEV	6.4791***	0.7644***	-6.6427***	-0.9168***	-0.3913***	-3.5222***	-0.1857***	-3.4455***
	(0.0004)	(0.0001)	(0.0004)	(0.0000)	(0.0002)	(0.0005)	(0.0001)	(0.0003)
REIN	2.6836**	-3.7588***	2.4476**	0.2085***	2.5448*	-3.2403***	2.5923***	-3.5682***
	(0.0332)	(0.0000)	(0.0409)	(0.0000)	(0.0367)	(0.0000)	(0.0308)	(0.0000)
Constant	13.9433	-4.6779	-6.1668	8.0943***	-16.0693	4.2505	-18.6113	4.1475*
	(2.0718)	(1.0581)	(2.0335)	(0.0284)	(2.1047)	(0.7945)	(2.1014)	(0.6274)
N	337	215	311	241	295	257	304	248
Adj. R^2	0.9873	0.3547	0.9853	0.0487	0.9964	0.2588	0.99642	0.21275
F-statistic	365.2354***	15.1264***	38.9596***	3.0568***	247.6643***	12.1767***	105.5243***	9.3554***
(*p*-value)	(0.0000)	(0.0000)	(0.0000)	(0.0252)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Dependent Variable: Contry-level Risk-Taking, *RISK 2*							
	(9) MOFR_high	(10) MOFR_low	(11) INFR_high	(12) INFR_low	(13) FIFR_high	(14) FIFR_low	(15) LAFR_high	(16) LAFR_low
BORS	-1.2555***	1.5736	3.9443***	-2.4244***	-0.0033	0.0000	-0.0001	0.0000
	(0.0002)	(0.0000)	(0.0006)	(0.0000)	(0.0006)	(0.0000)	(0.0000)	(0.0000)
CEOP	-1.2833***	1.5521***	-1.3667***	0.9813***	-0.2055***	0.7055***	-0.1055***	2.0944***
	(0.0002)	(0.0013)	(0.0007)	(0.0000)	(0.0030)	(0.0000)	(0.0000)	(0.0000)
SHAC	-2.0561***	0.5272***	-5.5478***	0.7902***	-3.8238***	0.8383***	-0.2604***	1.3244***
	(0.0001)	(0.1267)	(0.0005)	(0.0000)	(0.2531)	(0.5461)	(0.5334)	(1.6577)
ASDI	4.2485***	18.3259***	14.8842	0.4268*	9.0568	4.1685**	2.0486	-7.0642
	(0.0095)		(5.1293)	(0.0594)	(5.1456)	(0.0476)	(5.1157)	(0.1786)
SIZE	3.8641**	-4.1341***	19.1406**	2.5857***	7.5487**	0.6356***	4.3418***	-7.3403***
	(0.0188)	(-0.0051)	(0.0236)	(0.0025)	(0.0173)	(0.0007)	(0.0062)	(0.0096)
CONS	-1.8981***	1.1554***	-1.7834***	1.4255***	-3.0204***	1.8425***	-2.7249***	4.2454***
	(0.0002)	(0.0044)	(0.0006)	(0.0092)	(0.0018)	(0.0000)	(0.0023)	(0.0000)
LEV	-3.7544***	1.3346***	-6.5562***	0.6475***	-6.0564***	0.4848***	-7.3486***	0.9427***
	(0.0001)	(0.0001)	(0.0004)	(-0.0000)	(0.0007)	(0.0000)	(0.0001)	(0.0001)
REIN	3.1186***	0.6342***	2.3143**	-2.4458***	1.4403*	-3.4133***	-0.0846***	2.0038***
	(0.0000)	(0.0051)	(0.0335)	(-0.0000)	(0.0706)	(0.0000)	(0.0076)	(0.0000)
Constant	-4.1672**	35.6831	-31.5785	1.5844*	-55.6304	1.0779**	-19.3783	8.5941*
	(0.0412)	(1.6824)	(2.0235)	(0.0779)	(1.9212)	(0.0469)	(1.7374)	(0.0878)
N	331	221	333	219	246	306	279	273
Adj. R^2	0.1114	0.9996	0.9875	0.5144	0.9894	0.0311	0.9338	0.30385
F-statistic	10.1233***	28.3358***	6.8345***	1.1435**	28.3794***	2.2434	13.2075**	5.8432***
(*p*-value)	(0.0000)	(0.0000)	(0.0000)	(0.0373)	(0.0000)	(0.0257)	(0.0434)	(0.0000)

With regards to SIZE, at the outset, we assume that firms affiliate with groups have more resource and investment opportunities to take risk. Large SIZE would lead managers to undertake risky behaviors in countries. The statistically significant positive coefficient on SIZE indicates that no matter the level of economic freedom, the large firms have more preference to take risk for their abundant financial support and investment opportunities. With regards to LEV, as anticipated the coefficient on LEV is negative and statistically significant. REIN is positively relevant to insurance risk-taking behavior and statistically significant. The result conveys that an insurer may also rely on the reinsurance and involves in the risky behavior. With respect to anti-self-dealing index (ASDI), as anticipated the coefficient on ASDI is positive across all equations and statistically significant. This illustrates that better legal protection for shareholders, more obstacles the corporate insiders would face when converting corporate benefits back to themselves. With less fear of being expropriated by managers, shareholders would urge corporate insiders to take risky but value-enhancing investment. At odds with the expectation, insurers affiliated to consolidation prefer more risk-taking behavior. This result is consistent with the relationship between SIZE and risk-taking behavior. We assume firms operate under group have more financial support and investment opportunities would have same relationship with risk-taking behavior as the high gross premium written insurers.

5. Conclusion

The findings in this study imply that corporate governance which influenced by the managers, the board, and shareholders is an important determinant of insurance risk-taking. Although we cannot completely find obvious different in high or low economic freedom countries, the corporate governance proxies related to insurance risk-taking behavior consistent with the insurance contract environment.

Given that better corporate governance is instrumental to insurance risk-taking, firms in high economic freedom countries have more opportunities to take risk, further have significant negatively relationship between country-level risk-taking behavior and shareholder ownership concentration. Given that better corporate governance is instrumental in taking risk, firms in high economic freedom countries have more opportunities to risk taking.

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Appendix. Variable Definitions		
Variables		Definition
Risk-taking		
Risk 1		We compute company earnings volatility.
Risk 2		It is a country-level risk-taking proxy. Defined as the average of the company risk-taking proxy RISK1.
Corporate Governance		
BORS	(+/-)	We calculate only the number of directors on the board. The secretary or accountants on the board are eliminated.
CEOP	(-)	A dummy variable which is 1 if CEO duality takes place and 0 otherwise. In other words, CEOP equals one if the CEO is also the chair of the board or if CEO is internally-hired.
SHAC	(-)	It represents the degree of shareholder independence. We apply a SHAC of ISIS database. A represent the independent companies. D is the directly majority owned. One shareholder recorded with more than 50% direct ownership. We transfer A, B, C, and D into 1, 2, 3, and 4.
Control variables		
ASDI	(+/-)	It includes: (1) approval by disinterested shareholders; (2) disclosures by Buyer; (3) disclosures by Mr. James; (4) independent review; (5) each of the elements in the index of disclosure in periodic filings; (6) standing to sue; (7) rescission; (8) ease of holding Mr. James liable; (9) ease of holding the approving body liable; and (10) access to evidence.
SIZE	(+/-)	Defined as the natural logarithm of the insurer's gross premium written.
CONS	(+)	To see an organization is belong to a group or not. A dummy variable which is 1 if the firm is one company of entirely different businesses and 0 otherwise.
LEV	(-)	Defined as total liability divided by surplus.
REIN	(+)	Ratio of reinsurance ceded to total direct premium plus reinsurance assumed.
Economic Freedom		
EF		Annual Index of Economic Freedom that ranges from 100% to 0% with a higher percentage indicating less government control on financial institutions. This index is available for each country since 1995.