CHAIR-CEO AGE VARIATION AND INSURANCE RISK-TAKING BEHAVIOR

Demeh Daradkah *

* Department of Finance and Banking Science, Faculty of Economics and Administrative Sciences, Yarmouk University, Irbid, Jordan
Contact details: Yarmouk University, P.O. Box 566 Zip Code 21163, Irbid, Jordan

OPEN ACCESS

How to cite this paper: Daradkah, D. (2021). Chair-CEO age variation and insurance risk-taking behavior. *Journal of Governance & Regulation, 10*(1), 49-57. https://doi.org/10.22495/jgrv10i1art6

ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 02.12.2020
Accepted: 29.01.2021

JEL Classification: G3, G22, G28
DOI: 10.22495/jgrv10i1art6

Abstract

Based on data of all listed insurance companies in Jordan over the period of 2008-2018, the study investigates the effect of chairman of the board of directors (chair) and chief executive officer (CEO) age variation on risk-taking behavior via different chair-CEO age variation proxies. Risk-taking behavior is measured by total risk, a proxy set up on the market's risk perception. Thus, the study finds evidence that the chair-CEO age variation tends to decrease risk-taking practice in Jordan's insurance companies, only if a generation gap exists. It doesn't matter whether the chair or CEO is older. These results are consistent with Goergen, Limbach, and Scholz (2015) and Zhou, Kara, and Molyneux (2019). Different robustness tests (CEO-firm fixed effect, random effect, and dynamic panel estimation) confirm results. Overall, this study contributes to corporate governance literature; thus, enhancing the internal corporate governance mechanism is essential. Finally, it has a practical implication for stakeholders, policymakers, and researchers.

Keywords: Chair-CEO Relationship, Risk-Taking Behavior, Age Variation, Insurance Companies, Jordan

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

1. INTRODUCTION

Stockholders elect the board of directors (BODs) to lead the corporation on behalf of them, in which each BODs has a chair who guides the supervisory board (Goergen, Limbach, & Scholz, 2015). The BODs are considered an essential part of the internal corporate governance mechanism (Fama & Jensen, 1983). The tremendous global financial crisis of 2007-2009 has shed more light on the unique role of effective corporate governance in limiting risk-taking behavior (OECD, 2010).

One of the BODs' key roles is to hire a chief executive officer (CEO) with a leading ability (Bhagat, Bolton, & Subramanian, 2010). Therefore, it is essential for the chair and the CEO to communicate and interact with each other. The chair-CEO relationship can be affected by demographic variables such as age, education level, working experience, and gender. To date, the form of optimal chair-CEO relationship is still not clear.

Age demography affects individuals' attitudes and behaviors (Taylor, 1975; Rhodes, 1983; Mak & Ip, 2017). Empirical studies suggest that members from the same age generation share the same historical and social events, therefore may faceless communication problems (Wagner, Pfeffer, & O'Reilly, 1984; Pelled, Eisenhardt, & Xin, 1999), and subsequently decrease cognitive conflict (Goergen et al., 2015; Zhou, Kara, & Molyneux, 2019). Consequently, chair-CEO age variation may lead to cognitive conflict.

Recently, corporate governance studies examine BODs' demographic variables' effect on risk-taking behavior and performance (Wang & Hsu, 2014; Minton, Taillard, & Williamson, 2014; Dong, Girardone, & Kuo, 2017). However, few literature studies investigate the chair-CEO relationship and its effect on risk-taking behaviors and performance (Goergen et al., 2015; Zhou et al., 2019) focused on the banking industry.

A small amount of literature studies the risk-taking behavior of insurance companies compared to literature for banks. They argued that insurance companies are thought to be less affected by conflicts in financial markets. Recent decades

have witnessed several vital factors that have made the insurance companies more exposed to risk, such as the growth of financial derivatives (Baluch, Mutenga, & Parsons, 2011); the close relationship between insurance companies and banks (Lehmann & Hofmann, 2010; Lee, Lin, & Zeng, 2016); and financial crisis (Rose & Hudgins, 2013).

Stable and a-developed insurance industry is essential for promoting the stability of financial markets (Rothstein, 2011), and transferring risk (Lee, 2013), and more specifically in case of natural catastrophes (Ward & Zurbruegg, 2000).

This study aims to contribute to corporate governance literature connected to board diversity and its significance as a potential driver of risk-taking behavior, moreover, given the importance of the Amman Stock Exchange (ASE), in which foreign investment percentage in one of the largest in worldwide security exchanges (OECD, 2006). This study has an important implication for stakeholders, policymakers, and researchers.

Therefore, this study examines the chair-CEO relationship and its effect on risk-taking behavior on Jordan's insurance companies. Following Goergen et al. (2015) and Zhou et al. (2019), the study indicates that the chair-CEO relationship is formed by age variation. And the study also controls for other than age variations (gender and education) and management, BODs, and insurance companies characteristics. This study is the first to evaluate the effect of the chair-CEO relationship on risk-taking behavior in insurance companies in Jordan to the best of our knowledge. The sample provides a comprehensive and contemporary period from 2008 to 2018 to reach valid and consistent findings. Moreover, the study conducted further tests to confirm the results and control potential heterogeneity and endogeneity, which are common corporate governance issues.

The study consists of five sections, apart from this introduction: Section 2 reviews empirical literature and hypothesis development. Section 3 provides data and methodology, followed by the analysis in Section 4. Section 5 provides the endogeneity and robustness test, and the conclusion and recommendations are stated in Section 6.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency theory suggests that managers avoid risk due to reputational and employment risk (Fama, 1980). Meanwhile, management compensation ties to performance plans; an example of EPS (earning per share) growth might motivate managers to take more risk (Jensen & Murphy, 1990). Thus, the BODs are suggested to encourage managers with incentive plans and compensation tied to share price (Jensen & Meckling, 1976).

Manager's risk-taking behaviors are increased due to the extensive management incentives. Moreover, Pathan (2009) and Minton et al. (2014) argued that large management incentives largely contributed to the great financial crisis of 2007-2009. Therefore, Staikouras, Staikouras, and Agoraki (2007), Andres (2008), and Pathan (2009) suggested that internal corporate governance mechanisms can reduce agency problems.

Pearce and Zahra (1992) introduced board diversity as a primary internal corporate governance mechanism. Several literature works have recently explored the effect of BOD diversity (such as BODs size, gender, education, and age) on risk-taking behavior and performance. For instance, researchers found mixed evidence of BOD size and performance. Aebi, Sabato, and Schmid (2012) found a positive impact of BODs size on performance. On the other hand, Wang, Lu, and Lin (2012) and Liang, Xu, and Jiraporn (2013) found a negative effect of BODs size on performance. However, Minton et al. (2014) found no impact of BODs size on performance. Zhou et al. (2019) argued that larger boards might decrease risk-taking behavior, while larger panels may have a communication problem. Pathan (2009), Wang and Hsu (2014), and Battaglia and Gallo (2017) found a positive impact on risk-taking behavior. Conversely, Erkens, Hung, and Matos (2012) found a negative effect.

Gender is also suggested to influence firm performance. Many studies (Erhardt, Werbel, & Shrader, 2003; Post & Byron, 2015) found positive evidence of females' presence on BODs on firms' risk-taking behavior. In comparison, Nguyen, Hagendorff, and Eshraghi (2015) found no evidence of females' presence on BOD on firms' risk-taking behavior.

Education is considered as a significant board structure that affects a firm's performance. For instance, various literature (Koyuncu, Firfiray, Claes, & Hamori, 2010; Darmadi, 2013; Kokeno & Muturi, 2016) found positive evidence of the education level on a firm's performance. Differently, Gottesman and Morey (2010) indicate no evidence of the education level.

One of the most important demographic variables is age. It is well known that age demography affects individuals' investment attitudes and behaviors (Taylor, 1975; Rhodes, 1983; Mak & Ip, 2017). It is also known that individuals become more risk-averse as they get older (Grable, McGill, & Britt, 2009; Bucciol & Miniaci, 2011). Consistently, Campbell (2011) indicates that younger investors invest more in equity instruments. Similarly, Berger, Kick, and Schaeck (2014) suggest that firms with younger BODs face higher portfolio risk. It is also revealed that directors of the same age generation tend to witness the same historical and social events, therefore, are more connected (Bantel & Jackson, 1989; Pelled et al., 1999). More recently, Talavera, Yin, and Zhang (2018) inspect whether the impact of age BODs diversity on risk-taking behavior exists in China, where they found no evidence.

Another prominent attribute is the chair-CEO relationship. Empirical evidence confirms the friendship ties of BODs-CEO on a firm's performance. Houston, Lee, and Suntheim (2018) inspected the effect of friendship ties on firms' performance and found a positive impact. In contrast, Fahlenbrach and Stulz (2011) and Fracassi and Tate (2012) inspected the effect of friendship ties on firms' performance and found a negative impact.

Recently, serious attention moved toward examining the relationship between chair-CEO, in which it is affected by demographic variables

such as age, education, working experience, and gender. To date, the form of optimal chair-CEO relationship is still not clear. Goergen et al. (2015) and Zhou et al. (2019) indicated that the chair-CEO relationship is formed by age variation. Goergen et al. (2015) examine the impact of chair-CEO age gap generation on firms' performance (board meetings, ROA, and Tobin's Q) for 172 German firms from 2005 to 2010. They found a positive impact of chair-CEO age gap generation on a firm's performance. Consistently, Zhou et al. (2019) examined the effect of chair-CEO age gap generation on banks' risk-taking behavior (loan-loss reserve, impaired loan to gross loan, equity risk, and Z-score) for 100 European banks during the period from 2005 to 2014. They found a negative effect of chair-CEO age gap generation on risk-taking behavior.

Overall, it can be concluded that there is scarceness in corporate governance literature related to demographic variation (especially age) and its effect on risk-taking behavior. Moreover, most of the studies so far were conducted for developed countries, in which there was a lack for MENA countries, and more specifically for Jordan.

Therefore, this study contributes to filling the lack of literature by investigating whether chair-CEO age variation affects risk-taking behavior in Jordan's insurance companies from 2008 to 2018. More specifically, this study is interested in more considerable age variation (age generation gap). Hence, the following hypothesis will be tested (following Goergen et al., 2015, and Zhou et al., 2019):

H1: Chair-CEO age gap generation has an effect on risk-taking behavior in insurance companies in Jordan.

3. DATA AND METHODOLOGY

The study sample includes all listed insurance companies except Islamic insurance companies (Takaful); because they operate differently from conventional insurance companies[1].

Given that, Jordan is a small and developing country and the insurance industry is relatively a young sector, which limits the final database to 19 insurance companies for the years 2008-2018.

Collecting data was a challenging process, in which the board of directors' characteristics data was carefully and manually collected from annual reports. Furthermore, insurance companies' financial data was collected from the ASE bulletin.

3.1. Study variables

Dependent variables: as for dependent variables, the study uses real risk to determine whether chair-CEO age variation affects insurance companies' risk-taking behavior.

Total risk: this reflects the overall variability in insurance company stock return.

Following Chakraborty, Gao, and Sheikh (2019) and Zhou et al. (2019), total risk is measured as the standard deviation of the insurance company's daily stock return (SR_{it}) for each year:

$$SR_{it} = ln\,(P_{it}\,/P_{it-1}) \quad (1)$$

where, P_{it} is the stock price for insurance company i and time t.

Chair-CEO age variation: following Goergen et al. (2015) and Zhou et al. (2019), the study uses four proxies for chair-CEO age variation:

1. *Age difference* is calculated by subtracting CEO age from chair age. Any discrepancy will indicate the existence of cognitive conflict, no matter who is older.
2. *Age absolute* is calculated as the total amount of age difference used to control whosever is older.
3. *Age squared* is calculated as the squared amount of age difference, which is used to manage the existence of any non-liner relationship.
4. *Age gap generation,* according to Strauss-Howe generation theory (1997), the gap generation is defined as a gap generation if there is 20 years or more age difference.

Hence, to consider the generation gap for chair-CEO, it is set for a dummy variable, which equals 1 in case the existence of the generation gap for chair-CEO, and 0 if not.

Other chair-CEO variation: there are other factors than age variation that affect cognitive conflict and communication between chair-CEO. Thus, it may affect risk-taking behavior. Therefore, the study uses other than age variation variables to control chair-CEO variation (Goergen et al., 2015; Zhou et al., 2019; Zhu, Gao, & Tan, 2020). *Education* is set for a dummy variable, which equals one if the chair-CEO has a similar educational background, and 0 if not. *Gender* is set for a dummy variable, which equals one if the chair-CEO has unlike gender, and 0 if not.

Management and BODs characteristics: the study used the most relevant management and board characteristics that may affect risk-taking behavior. *Board size* is calculated as the natural logarithm of the sum of all BODs members, and it reflects the strength of the BOD (Pathan, 2009; Goergen et al., 2015; Field, Lowry, & Mkrtchyan, 2013; Elyasiani & Zhang, 2015; Zhou et al., 2019). *CEO retirement* is set for a dummy variable, which equals 1, in case if the chair is retired (older than 60 years), and equals 0 if not (Onali, Galiakhmetova, Molyneux, & Torluccio, 2016; Zhou et al., 2019).

Insurance companies' characteristics: moreover, the study uses a set of firm characteristics to control their effect on risk-taking behavior. This is *Firm size (Log (total assets$_{it}$))*, following Pathan (2009), Goergen et al. (2015), and Zhou et al. (2019). *Firm activity* is the yearly growth in the gross written premium, following Shiu (2007), Caporale, Cerrato, and Zhang (2017); *Firm leverage* (*total equity$_{it}$/total assets$_{it}$*) (Shiu, 2007; Goergen et al., 2015; Caporale et al., 2017; Zhou et al., 2019).

[1] "Takaful companies are based upon risk-sharing model, where it removes risk within a particular social group. On the other hand, conventional insurance companies are based upon risk-transfer model, where it removes risk for policyholders" (Baker & Simon, 2002, p. 37).

3.2. Empirical methods

The following model is applied to examine the effect of chair-CEO age variation on risk-taking behavior, following Goergen et al. (2015) and Zhou et al. (2019).

$$\begin{gathered} Total\ risk_{it} = \\ \alpha + \beta_1 Chair - CEO\ age\ variation_{it} + \\ \beta_2\ Other\ chair - CEO\ variation_{it} + \\ \beta_3\ Management\ and\ BODs\ characteristics_{it} + \\ \beta_6\ Insurance\ companies\ characteristics_{it} + \\ Year\ dummies + \partial_i + \varepsilon_{it} \end{gathered} \quad (2)$$

where, *Total risk* is set as the dependent variable to measure risk-taking behavior, ∂ denotes the fixed effect of the insurance company *i(1,2,…,19), t(2008,2009,…,2018),* and ε represents the residual term.

The study uses a fixed-effect model as the primary estimator based on balanced panel data, as for robustness check (see Section 5).

4. RESULTS

4.1. Descriptive statistics

Table 1 reports summary statistics of the study variables; the first group reports different chair-CEO age characteristics of insurance companies listed on ASE from 2008 to 2018. The average age difference is 12.5 years. They were indicating that in most Jordanian insurance companies, the chair is older than the CEO. The average age absolute is 17.6 years. There is also a generation gap chair-CEO for 38.65% of insurance companies in Jordan. Thus, 22.7% of CEOs are older than 60. On the other hand, the study finds that 43.54% of chairs and CEOs in Jordanian insurance companies have a different educational background. Thus, almost all chairs and CEOs in Jordanian insurance companies are male, where only 4% of insurance companies in Jordan have female chair-CEO.

Board of directors characteristics imply that on average, board size is about 9, indicating that insurance companies in Jordan comply with corporate governance law (BOD should consist of at least 7 members). The mean of the study sample's total risk is 0.34; these values are consistent with the levels of risk reported in Chakraborty et al. (2019). The average insurance companies' total assets are JD 32,125,238. The average growth in gross written premium is 9.01%, and the average firm leverage is 40.93%.

4.2. Empirical results

Table 2 reports the regression results estimating chair-CEO age variation on insurance company risk-taking behavior. The age variation measures are employed separately; thus, fixed effects of firm and year are employed. In columns 1 to 4, regressions are employed with gender and education variables, but in columns 5 to 8, regressions are employed without those variables.

The results indicated a statistically significant and negative effect of age gap generation on insurance companies' total risk at a 5% confidence level (columns 1 and 5).

On the other hand, there is no statistically significant effect of age difference on insurance companies' total risk (columns 2 and 6). Thus, there is a statistically significant and negative impact of age squared on insurance companies' total risk at a 10% confidence level (columns 4 and 8). These results indicate the consistency that only considerable age variation affects insurance company risk-taking behavior. Also, it shows a statistically significant and negative effect of age absolute on insurance companies' total risk at a 10% confidence level (columns 3 and 7). This result indicates that the sign of the difference is not essential. Hence, it is irrelevant whether the chair or CEO is older.

Therefore, the study accepted the hypothesis that chair-CEO age variations affect Jordan's insurance companies' risk-taking behavior. This acceptance is due to the chair-CEO cognitive conflict (as age variation between the chair and CEO increases, a cognitive conflict may exist), increasing chair independence (Goergen et al., 2015). Hence, the chair requires more reasonable monitoring of the CEO's risk-taking activities (Zhou et al., 2019). And therefore, it decreases the total risk in insurance companies.

These results are consistent with Goergen et al. (2015) and Zhou et al. (2019), where Goergen et al. (2015) found that chair-CEO age variation positively affects the bank's performance. Thus, Zhou et al. (2019) found that chair-CEO age variation will assume less risk-taking behavior.

Table 1. Descriptive statistics

Variable	*Mean*	*SD*	*Min*	*Max*
Chair-CEO age variation				
Age difference (years)	12.50	15.93	-29	44
Age absolute	17.59	9.99	0	44
Age squared	408.99	390.66	0	1936
Age gap generation	0.39	0.49	0	1
Other chair-CEO variation				
Education	0.44	0.49	0	1
Gender	0.04	0.20	0	1
Management and BODs characteristics				
Board size	8.79	1.53	4	15
CEO retirement	0.23	0.42	0	1
Insurance companies characteristics				
Firm size (JD)	32125238	23477273	8027811	110513441
Firm growth (%)	9.09	19.32	-34.07	138.74
Firm leverage (%)	40.93	13.76	9.05	74.42
Total risk	0.34	0.24	0.02	27.8

Table 2. Firm-fixed effects results

Variable	*Total risk*							
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Chair-CEO age variation								
Age gap generation	-0.107**				-0.109**			
	(-2.12)				(-2.17)			
Age difference		-0.127				-0.137		
		(-0.73)				(-0.79)		
Age absolute			-0.388*				-0.3981*	
			(-1.67)				(-1.73)	
Age squared				-0.0977*				-0.0991*
				(-1.70)				(-1.75)
Other chair-CEO variation								
Education	-0.0182	-0.0129	-0.00346	-0.0185				
	(-0.26)	(-0.18)	(-0.05)	(-0.26)				
Gender	-0.0313	-0.0374	-0.0545	-0.0398				
	(-0.25)	(-0.30)	(-0.44)	(-0.32)				
Management and BODs characteristics								
Board size	-0.437	-0.489	-0.507	-0.573	-0.450	-0.495	-0.504	-0.586
	(-0.95)	(-1.06)	(-1.10)	(-1.24)	(-0.99)	(-1.09)	(-1.11)	(-1.29)
Retirement	-0.00491	-0.0129	-0.00327	-0.0144	-0.00384	-0.0126	-0.00274	-0.0155
	(-0.06)	(-0.15)	(-0.04)	(-0.14)	(-0.05)	(-0.15)	(-0.03)	(-0.16)
Insurance companies characteristics								
Firm leverage	-0.211	-0.306	-0.289	-0.361	-0.203	-0.300	-0.290	-0.353
	(-0.83)	(-1.25)	(-1.17)	(-1.47)	(-0.81)	(-1.25)	(-1.20)	(-1.46)
Firm size	-0.581**	-0.565**	-0.599**	-0.623**	-0.612**	-0.594**	-0.633**	-0.659**
	(-2.09)	(-2.01)	(-2.15)	(-2.21)	(-2.27)	(-2.18)	(-2.35)	(-2.42)
Firm growth	0.00518	0.00536	0.00572	0.00370	0.00584	0.00588	0.00594	0.00435
	(0.53)	(0.54)	(0.58)	(0.37)	(0.62)	(0.61)	(0.62)	(0.45)
(Firm, year) Fixed effects	Contained	Contained	Contained	Contained	Contained	Contained	Contained	Contained
No. of obs.	200	200	200	200	200	200	200	200
Within R^2	0.278	0.271	0.271	0.261	0.277	0.270	0.270	0.259

*Note: ***, **, *, indicated statistical significance at 1%, 5%, and 10% level of confidence, respectively.*

As for other chair-CEO variations, the study indicates no statistically significant effect of gender on insurance companies' risk-taking behavior. This result can be explained by the low gender variable, where only 4% of insurance companies in Jordan have female chair-CEO. This finding is consistent with a recent study by Bruna, Dang, Scotto, and Ammari (2019) who document no effect of gender on French banks' risk from 2006 to 2010. Consistently, Nguyen et al. (2015) and Kilic (2015) found no evidence of gender on firms' behavior for the US and Turkey, respectively. Moreover, this result is also in regularity with Al-Shammari and Al-Saidi (2014), who show evidence that gender has no effect on the performance of all listed Kuwaiti firms. Similarly, Jhunjhunwala and Mishra (2012) document no effect of gender on Indian firms' performance for 2011.

However, it's inconsistent with Erhardt et al. (2003), Pathan and Faff (2013), and Post and Byron (2015), who document evidence that gender affects banks' risk-taking behavior.

Similarly, the study indicates no statistically significant effect of education on insurance companies' risk-taking behavior. This result is consistent with Jalbert, Rao, and Jalbert (2002), Lindorff and Jonson (2013), and Goergen et al. (2015), who found evidence that education has no effect on firms' performance. Thus, Bhagat et al. (2010) provide evidence that education did not affect the long-term firms' performance, using a sample of 1,500 US firms during the period of 1992-2007. Gottesman and Morey (2010) introduce supporting evidence. They show that education has no effect on US firms' performance for the year 2002.

Furthermore, for management and BODs characteristics, the study indicates no statistically significant effect of either BODs size or retirement on insurance companies' total risk. This result is consistent with Cicero, Wintoki, and Yang (2007) who found evidence that BODs size has no effect on firms' performance. Similarly, Topak (2011) provide evidence that BODs size did not affect the long-run firms' performance, using a sample of 122 Turkish firms during the period of 2004-2009. Thus, Minton et al. (2014) introduce supporting evidence. They show that BODs size has no effect on US banks' performance. This result is also in regularity with Goergen et al. (2015) and Zhou et al. (2019), who show evidence that BODs size has no effect on firms' performance in a vast number of European countries. On the other hand, it's inconsistent with Hermalin and Weisbach (2003) and Pathan (2009), who document evidence that BODs size affects firms' risk. As for retirement results, it can be explained by the low retirement variable, where only 22.7% of CEOs are older than 60. This result is also in line with the results of Goergen et al. (2015) and Zhou et al. (2019).

Finally, and concerning control variables, firm size is the only variable that indicates a statistically significant and negative effect on insurance companies' total risk. This point out that larger insurance company has less risk. Thus, this result agrees with Pathan (2009), Goergen et al. (2015), and Zhou et al. (2019).

5. ENDOGENEITY AND ROBUSTNESS TEST

Overall, the results reveal that age gap generation decreases the risk-taking behavior of insurance companies in Jordan. To confirm the main results, the study conducted additional tests.

Corporate governance research is most likely addressed with endogeneity issues (Wintoki, Linck, & Netter, 2012). Therefore, the study addresses unobserved heterogeneity. The study re-examines the analysis using the CEO-firm fixed effect (CEO retirement) (Goergen et al., 2015; Zhou et al., 2019). Table 3 illustrates and confirms the main results, it is evident that age gap generation is statistically significant at a 5% confidence level. This finding provides evidence that the study results cannot be referred to as unobserved heterogeneity.

Then, the generalized method of moments (GMM) is applied, where Wintoki et al. (2012) argue that traditional fixed effect estimation may lead to biased results due to endogeneity. Table 4 illustrates and confirms the main results, it is clearly evident that age gap generation is statistically significant at a 1% confidence level. This finding provides evidence that the study results cannot be referred to as dynamic endogeneity or negligent variables.

Finally, the study re-examines the analysis using random effect (Andres, 2008). Table 5 illustrates and confirms the main results, it is evident that age gap generation is statistically significant at a 1% confidence level.

Table 3. GMM results

Variable	*Total risk*	
	(1)	*(2)*
Total risk$_{t-1}$	-0.847 ***	-0.882***
	(-8.52)	(-7.95)
Age gap generation	-0.170 *	-0.197 *
	(-2.04)	(-2.03)
Education	0.0257	
	(0.26)	
Gender	0.0922	
	(0.69)	
CEO and board characteristics	Contained	Contained
Insurance companies characteristics	Yes	Yes
No. of obs.	178	178
Arellano-Bond test AR (1)	0.254	0.215
Arellano-Bond test AR (2)	0.148	0.146
Hansen test-identification	0.588	0.436
Diff-in-Hansen test GMM	0.498	0.429

*Note: ***, **, *, indicated statistical significance at 1%, 5%, and 10% level of confidence, respectively.*

Table 4. Unobserved heterogeneity and endogenous results

Variable	*Total risk*	
	(1)	*(2)*
Age gap generation	-0.107**	-0.109**
	(-2.12)	(-2.17)
Education	-0.0182	
	(-0.26)	
Gender	-0.0313	
	(-0.25)	
CEO and BODs characteristics	Yes	Yes
Insurance companies characteristics	Yes	Yes
(CEO-firm, year) Fixed effects	Contained	Contained
No. of obs.	200	200
Within R^2	0.278	0.277

*Note: ***, **, *, indicated statistical significance at 1%, 5%, and 10% level of confidence, respectively.*

Table 5. Random effects results

Variable	*Total risk*	
	(1)	*(2)*
Age gap generation	-0.0437	-0.0572*
	(-1.38)	(-1.79)
Education	0.0678*	
	(2.16)	
Gender	-0.0328	
	(-0.55)	
CEO and BODs characteristics	Yes	Yes
Insurance companies characteristics	Yes	Yes
No. of obs.	200	200
Within R^2	0.0482	0.0750

*Note: ***, **, *, indicated statistical significance at 1%, 5%, and 10% level of confidence, respectively.*

6. CONCLUSION

The form of optimal chair-CEO relationship is still not clear. Therefore, this study attempts to fill the literature gap by examining the chair-CEO relationship formed by age variation and how it affects risk-taking behavior in insurance companies in Jordan, based on data from all listed insurance companies over the period of 2008-2018.

The results indicate that the chair-CEO age variation tends to decrease the risk-taking behavior of insurance companies in Jordan, only if a generation gap exists, and it doesn't matter whether a chair or CEO is older. Moreover, chair-CEO age variation tends to increase cognitive conflicts. These results are robust in a variety of robustness tests.

These findings have important implications to stakeholders, where they should pay attention to the demographic variable: age, either when electing the BODs, or when hiring the CEO. Moreover, these findings also have important implications for policymakers, indicating the importance of introducing demographic variation between the chair and the CEO.

Corporate governance regulations and rules may have in each country different specific characteristics, and, given that, these findings only explain the effect of age variation on the risk-taking behavior of insurance companies in Jordan, therefore, these findings cannot explain all companies. Further and future research in this domain is recommended by examining the chair-CEO relationship formed by other variables, such as cultural characteristics. Moreover, although the insurance industry is important to be investigated, however, including more sectors could have been more exploratory. Thus, investigating other countries, especially in MENA countries, is recommended.

REFERENCES

1. Aebi, V., Sabato, G., & Schmid, M. (2012). Risk management, corporate governance, and bank performance in the financial crisis. *Journal of Banking and Finance, 36*(12), 3213-3226. https://doi.org/10.1016/j.jbankfin.2011.10.020
2. Al-Shammari, B., & Al-Saidi, M. (2014). Kuwaiti women and firm performance. *International Journal of Business and Management, 9*(8), 51-60. https://doi.org/10.5539/ijbm.v9n8p51
3. Andres, C. (2008). Large shareholders and firm performance – An empirical examination of founding-family ownership. *Journal of Corporate Finance, 14*(4), 431-445. https://doi.org/10.1016/j.jcorpfin.2008.05.003
4. Baker, T., & Simon, J. (2002). *Embracing risk: The changing culture of insurance and responsibility*. Chicago, IL: University of Chicago Press.
5. Baluch, F., Mutenga, S., & Parsons, C. (2011). Insurance, systemic risk, and the financial crisis. *Geneva Papers on Risk Insurance – Issues and Practice, 36,* 126-163. https://doi.org/10.1057/gpp.2010.40
6. Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking, does the composition of the top team make a difference? *Strategic Management Journal, 10*(S1), 107-124. https://doi.org/10.1002/smj.4250100709
7. Battaglia, F., & Gallo, A. (2017). Strong boards, ownership concentration, and EU banks' systemic risk-taking: Evidence from the financial crisis. *Journal of International Financial Markets, Institutions and Money, 46,* 128-146. https://doi.org/10.1016/j.intfin.2016.08.002
8. Berger, A. N., Kick, T., & Schaeck, K. (2014). Executive board composition and bank risk-taking. *Journal of Corporate Finance, 28,* 48-65. https://doi.org/10.1016/j.jcorpfin.2013.11.006
9. Bhagat, S., Bolton, B. J., & Subramanian, A. (2010). *CEO education, CEO turnover, and firm performance*. https://doi.org/10.2139/ssrn.1670219
10. Bhaghat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate Finance, 14*(3), 257-273. https://doi.org/10.1016/j.jcorpfin.2008.03.006
11. Bruna, M. G., Dang, R., Scotto, M. J., & Ammari, A. (2019). Does board gender diversity affect firm risk-taking? Evidence from the French stock market. *Journal of Management and Governance, 23*(4), 915-938. https://doi.org/10.1007/s10997-019-09473-1
12. Bucciol, A., & Miniaci, R. (2011). Household portfolios and implicit risk preference. *The Review of Economics and Statistics, 93*(4), 1235-1250. https://doi.org/10.1162/REST_a_00138
13. Campbell, J. L. (2011). The US financial crisis: Lessons for theories of institutional complementarity. *Socio-Economic Review, 9*(2), 211-234. https://doi.org/10.1093/ser/mwq034
14. Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics, 97*(3), 470-487. https://doi.org/10.1016/j.jfineco.2010.02.009
15. Caporale, G. M., Cerrato, M., & Zhang, X. (2017). Analyzing the determinants of insolvency risk for general insurance firms in the UK. *Journal of Banking and Finance, 84*, 107-122. https://doi.org/10.1016/j.jbankfin.2017.07.011
16. Chakraborty, A., Gao, L.S., & Sheikh, S. (2019). Managerial risk taking incentives, corporate social responsibility and firm risk. *Journal of Economics and Business, 101,* 58-72. https://doi.org/10.1016/j.jeconbus.2018.07.004
17. Cicero, D., Wintoki, M. B., & Yang, T. (2007). Do firms adjust to a target board structure? Retrieved from http://media.terry.uga.edu/documents/finance/yang_firms_board_structure.pdf
18. Darmadi, S. (2013). Board members' education and firm performance: Evidence from a developing economy. *International Journal of Commerce and Management, 23*(2), 113-135. https://doi.org/10.1108/10569211311324911
19. Dong, Y., Girardone, C., & Kuo, J. M. (2017). Governance, efficiency, and risk-taking in Chinese banking. *The British Accounting Review, 49*(2), 211-229. https://doi.org/10.1016/j.bar.2016.08.001
20. Elyasiani, E., & Zhang, L. (2015). Bank holding company performance, risk, and "busy" board of directors. *Journal of Banking and Finance, 60,* 239-251. https://doi.org/10.1016/j.jbankfin.2015.08.022
21. Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance An International Review, 11*(2), 102-111. https://doi.org/10.1111/1467-8683.00011
22. Erkens, D. H., Hung, M., & Matos, P. (2012). Corporate governance in the 2007e2008 financial crisis, evidence from financial institutions worldwide. *Journal of Corporate Finance, 18*(2), 389-411. https://doi.org/10.1016/j.jcorpfin.2012.01.005

23. Fahlenbrach, R., & Stulz, R. M. (2011). Bank CEO incentives and the credit crisis. *Journal of Financial Economics, 99*(1), 11-26. https://doi.org/10.1016/j.jfineco.2010.08.010
24. Fama, E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288-307. https://doi.org/10.1086/260866
25. Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26*(2), 301-325. https://doi.org/10.1086/467037
26. Field, L., Lowry, M., & Mkrtchyan, A. (2013). Are busy boards detrimental? *Journal of Financial Economics, 109*(1), 63-82. https://doi.org/10.1016/j.jfineco.2013.02.004
27. Fracassi, C., & Tate, G. (2012). External networking and internal firm governance. *Journal of Finance, 67*(1), 153-194. https://doi.org/10.1111/j.1540-6261.2011.01706.x
28. Gibson, M. S. (1995). Can bank health affect investment? Evidence from Japan. *Journal of Business, 68*(3), 281-308. https://doi.org/10.1086/296666
29. Goergen, M., Limbach, P., & Scholz, M. (2015). Mind the gap: The age dissimilarity between the chair and the CEO. *Journal of Corporate Finance, 35,* 136-158. https://doi.org/10.1016/j.jcorpfin.2015.08.011
30. Gottesman, A. A., & Morey, M. R. (2010). CEO educational background and firm financial performance. *Journal of Applied Finance, 20*(2), 1-13. Retrieved from https://ssrn.com/abstract=2693079
31. Grable, J. E., McGill, S., & Britt, S. (2009). Risk tolerance estimation bias: The age effect. *Journal of Business and Economics Research, 7*(7), 1-12. https://doi.org/10.19030/jber.v7i7.2308
32. Hermalin, B. E., & Weisbach, M. S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review, 9*(1), 7-26. Retrieved from https://www.newyorkfed.org/medialibrary /media/research/epr/03v09n1/0304herm.pdf
33. Houston, J. F., Lee, J., & Suntheim, F. (2018). Social networks in the global banking sector. *Journal of Accounting and Economics, 65*(2-3), 237-269. https://doi.org/10.1016/j.jacceco.2017.11.006
34. Houston, J., & James, C. (1996). Bank information monopolies and the mix of private and public debt claims. *Journal of Finance, 51*(5), 1863-1889. https://doi.org/10.1111/j.1540-6261.1996.tb05229.x
35. Jalbert, T., Rao, R., & Jalbert, M. (2002). Does school matter? An empirical analysis of CEO education, compensation and firm performance. *International Business and Economics Research Journal, 1*(1), 83-98. https://doi.org/10.19030/iber.v1i1.3882
36. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X
37. Jensen, M., & Murphy, K. (1990). Performance pay and top-management incentives. *Journal of Political Economy, 98*(2), 225-264. https://doi.org/10.1086/261677
38. Jhunjhunwala, S., & Mishra, R. (2012). Board diversity and corporate performance: The Indian evidence. *Journal of Corporate Governance, 11*(3), 71-79.
39. Kilic, M. (2015). The effect of board diversity on the performance of banks: Evidence from Turkey. *International Journal of Business and Management, 10*(9), 182-192. https://doi.org/10.5539/ijbm.v10n9p182
40. Knopf, J. D., & Teall, J. L. (1996). Risk-taking behavior in the U.S. thrift industry: Ownership structure and regulatory changes. *Journal of Banking and Finance, 20*(8), 1329-1350. https://doi.org/10.1016/0378-4266(96)00010-6
41. Kokeno, S. O., & Muturi, W. (2016). Effect of chief executive officer's characteristics on the financial performance of firms listed at the Nairobi Securities Exchange. *International Journal of Economics Commerce and Management, 4*(7), 307-318. Retrieved from http://ijecm.co.uk/wp-content/uploads/2016/07/4719.pdf
42. Koyuncu, B., Firfiray, S., Claes, B., & Hamori, M. (2010). CEOs with a functional background in operations: Reviewing their performance and prevalence in the top post. *Human Resource Management, 49*(5), 869-882. https://doi.org/10.1002/hrm.20389
43. Lee, C. C. (2013). Insurance and real output: The key role of banking activities. *Macroeconomic Dynamics, 17*(2), 235-260. https://doi.org/10.1017/S1365100511000101
44. Lee, C. C., Lin, C. W., & Zeng, J. H. (2016). Financial liberalization, insurance market, and the likelihood of financial crises. *Journal of International Money and Finance, 62,* 25-51. https://doi.org/10.1016/j.jimonfin.2015.12.002
45. Lehmann, A. P., & Hofmann, D. M. (2010). Lessons learned from the financial crisis for risk management: Contrasting developments in insurance and banking. *Geneva Papers on Risk and Insurance – Issues and Practice, 35,* 63-78. https://doi.org/10.1057/gpp.2009.38
46. Liang, Q., Xu, P., & Jiraporn, P. (2013). Board characteristics and Chinese bank performance. *Journal of Banking and Finance, 37*(8), 2953-2968. https://doi.org/10.1016/j.jbankfin.2013.04.018
47. Lindorff, M., & Jonson, E. P. (2013). CEO business education and firm financial performance: A case for humility rather than hubris. *Education and Training, 55*(4-5), 461-477. https://doi.org/10.1108/00400911311326072
48. Mak, M. K., & Ip, W. (2017). An exploratory study of investment behavior of investors. *International Journal of Engineering Business Management, 9,* 1-12. https://doi.org/10.1177/1847979017711520
49. Minton, B. A., Taillard, J. P., & Williamson, R. (2014). Financial expertise of the board, risk-taking, and performance: Evidence from bank holding companies. *Journal of Financial and Quantitative Analysis, 49*(2), 351-380. https://doi.org/10.1017/S0022109014000283
50. Nguyen, D. D., Hagendorff, J., & Eshraghi, A. (2015). Which executive characteristics create value in banking? Evidence from appointment announcements. *Corporate Governance: An International Review, 23*(2), 112-128. https://doi.org/10.1111/corg.12084
51. OECD. (2006). *National investment reform agenda: MENA-OECD investment programme*. Retrieved from http://www.oecd.org/dataoecd/4/29/38148879.pdf
52. OECD. (2010). *Corporate governance and the financial crisis: Conclusions and emerging good practices to enhance implementation of the Principles.* Retrieved from https://www.oecd.org/daf/ca/corporategovernanceprinciples /44679170.pdf
53. Onali, E., Galiakhmetova, R., Molyneux, P., & Torluccio, G. (2016). CEO power, government monitoring, and bank dividends. *Journal of Financial Intermediation, 27,* 89-117. https://doi.org/10.1016/j.jfi.2015.08.001
54. Pathan, S. (2009). Strong boards, CEO power, and bank risk-taking. *Journal of Banking and Finance, 33*(7), 1340-1350. https://doi.org/10.1016/j.jbankfin.2009.02.001

55. Pathan, S., & Faff, R. (2013). Does board structure in banks really affect their performance? *Journal of Banking and Finance, 37*(5), 1573-1589. https://doi.org/10.1016/j.jbankfin.2012.12.016
56. Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies, 29*(4), 411-438. https://doi.org/10.1111/j.1467-6486.1992.tb00672.x
57. Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. (1999). Exploring the black box, an analysis of work group diversity, conflict and performance. *Administrative Science Quarterly, 44*(1), 1-28. https://doi.org/10.2307/2667029
58. Post, C., & Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of Management Journal, 58*(5), 1546-157. https://doi.org/10.5465/amj.2013.0319
59. Rhodes, S. R. (1983). Age-related differences in work attitudes and behavior: A review and conceptual analysis. *Psychological Bulletin, 93*(2), 328-367. https://doi.org/10.1037/0033-2909.93.2.328
60. Rose, P. S., & Hudgins, S. C. (2013). *Bank management and financial services* (9th ed.). New York, NY: McGraw-Hill.
61. Rothstein, J. (2011). Unemployment insurance and job search in the great recession. *Brookings Papers on Economic Activity, 2011*(2), 143-213. https://doi.org/10.1353/eca.2011.0018
62. Shiu, Y. M. (2007). An empirical investigation on derivatives usage: Evidence from the United Kingdom general insurance industry. *Applied Economics Letters, 14*(5), 353-360. https://doi.org/10.1080/13504850500426319
63. Staikouras, P., Staikouras, C., & Agoraki, M. E. (2007). The effect of board size and composition on European bank performance. *European Journal of Law and Economics, 23,* 1-27. https://doi.org/10.1007/s10657-007-9001-2
64. Talavera, O., Yin, S., & Zhang, M. (2018). Age diversity, directors' personal values, and bank performance. *International Review of Financial Analysis, 55,* 60-79. https://doi.org/10.1016/j.irfa.2017.10.007
65. Taylor, R. N. (1975). Age and experience as determinants of managerial information processing. *The Academy of Management Journal, 18*(1), 74-81. https://doi.org/10.5465/255626
66. Topak, M. S. (2011). The effect of board size on firm performance: Evidence from Turkey. *Middle Eastern Finance and Economics, 14,* 119-127. Retrieved from https://www.academia.edu/9487729/The_Effect_of_Board_Size_on_Firm_Performance_evidence_from_turkey
67. Wagner, W. G., Pfeffer, J., & O'Reilly, C. A. (1984). Organizational demography and turnover in top-management group. *Administrative Science Quarterly, 29*(1), 74-92. https://doi.org/10.2307/2393081
68. Wang, T., & Hsu, C. (2014). Board composition and operational risk events of financial institutions. *Journal of Banking and Finance, 37*(6), 2042-2051. https://doi.org/10.1016/j.jbankfin.2013.01.027
69. Wang, W. K., Lu, W. M., & Lin, Y. L. (2012). Does corporate governance play an important role in BHC performance? Evidence from the US. *Economic Modelling, 29*(3), 751-760. https://doi.org/10.1016/j.econmod.2012.01.021
70. Ward, D., & Zurbruegg, R. (2000). Does insurance promote economic growth? Evidence from OECD countries. *Journal of Risk and Insurance, 67*(4), 489-506. https://doi.org/10.2307/253847
71. 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. https://doi.org/10.1016/j.jfineco.2012.03.005
72. Zhou, Y., Kara, A., & Molyneux, P. (2019). Chair-CEO generation gap and bank risk-taking. *The British Accounting Review, 51*(4), 352-372. https://doi.org/10.1016/j.bar.2019.03.005
73. Zhu, J., Gao, J., & Tan, H. (2021). How the CEO power and age dissimilarity shape the chair-CEO pay gap: Empirical evidence from China. *North American Journal of Economics and Finance, 55.* Advance online publication. https://doi.org/10.1016/j.najef.2020.101221