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Impact of Board Structure on Insolvency and Credit Risk: Moderating role of Domestic and Transnational Financial Liberalization in Asian Banking Sector

[1]Rashida Bibi, [2]Zaheer Abbas, [3]Waqas Ahmad, [4]Tahira Awan

[1]MS Scholar, Faculty of management sciences, International Islamic University Islamabad, Pakistan
[2, 3, 4] Assistant Professor, FMS, International Islamic University, Islamabad, Pakistan

ABSTRACT

Purpose-The aim of this study is to analyze the effect of board structure on risk-taking. It also takes financial liberalization as a moderator between board structure and risk-taking.

Design/methodology/approach- Data of variables of interest has been obtained from the annual reports of banks and statistical reports published by Central Bank of concerned countries. Ten banks have been selected from every ten Asian countries during the period 2005 to 2015. GMM estimator is used for data analysis.

Findings- Findings of the study reveal that both board size and board independence decrease risk-taking practices in sample economies. Further, the presence of powerful CEOs on board structure increases risk-taking. The most robust result has been proved for board independence as compared with board size and CEO/chairman duality. Financial liberalization moderates the relationship between board structure and risk-taking.

Originality/value- Most of the previously published studies in this area use only one type of financial liberalization at one time. This study includes both types of financial liberalization: domestic financial liberalization and transnational financial liberalization, at one time. Laeven financial liberalization index has been created for concerned economies.

Keywords: CEO/Chairman Duality, Risk Taking, Board Independence, Domestic Financial Liberalization, Transnational Financial Liberalization.

1. INTRODUCTION

Financial institutions were answerable for excessive risk-taking in the year 2008 for the financial crisis (De Young, Peng & Yan, 2013; Minton, Taillard, Williamson, 2014). Board structure influences risk-taking in the banking sector (Elyasiani & Zhang, 2015). This study explores the effect of board structure on risk-taking in the banking sector of Asian countries, and also takes into account the financial liberalization policies

Address of Correspondence
Zaheer Abbas
zaheerabbas@iiu.edu.pk

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of these specific countries. Risk-taking in this study includes insolvency risk and credit risk. In financial firms, agency issues become more complex if the number of participating bodies is increased on the board (Andres et al., 2008). Pathan (2009) documented that for the stabilization of the economy the control mechanism of the board of directors played a vital role in the banking sector as compared to other sectors. Board structure in this study particularly includes how the size of the board, independent directors, and CEO dual role may affect the risk-taking behavior of banks.

Financial liberalization programs eliminate government control and intervention in the financial system of the economy (Reinhart, 2003). Financial liberalization has been generally considered as one of the main cause of the increased frequency and intensity of banking crises over the last three decades (Demirguc-kunt & Detragiache, 1999; Kaminsky & Reinhart, 2000). Financial liberalization policies have been implemented since the last two decades in most of the emerging economies. Liberal Financial policies lessen the state control and also increase risk because more liberal financial system improves resource allocation and is also efficient in getting more financial institutions (Barajas & Steiner, 2000). Past literature suggested that a more liberal financial system contributes toward the development in the financial sector and also strengthens this sector but leads to higher risk-taking (Henry, 2000; Bekaert et al. 2005). Boyd and De Nicolo (2005) argued that there is a positive relationship between financial liberalization and risk-taking in financial sectors.

Rest of the paper is organized as follows. After the introduction of the topic section two provides the literature review and on the basis of this, propositions are formulated and a theoretical model is finalized. Section three describes the methodology for this study. The fourth section discusses the results of the study and the final section deals with the conclusion and policy implication.

2. LITERATURE REVIEW

2.1. Theoretical Framework and Hypothesis Development

In this section, the previous studies relating to the board structure, risk-taking and financial liberalization are reviewed. The literature on board structure, risk-taking and

financial liberalization is very extensive and is in a different context. Therefore to make it easy to understand, the literature review on corporate governance and risk-taking and financial liberalization are segregated here.

2.2. Board Structure and Risk-Taking

Many studies have explored the relationship between board structure and firm performance (Yermack, 1996; Claessen, 2000) with mixed findings. In the context of agency theory, managers are not taking the risk due to their concern for the professional image in the market (Jensen & Mecking, 1976; Fama, 1980). Different benefits are offered to align the interest of both parties and thus add to the value of the firm (Jensen & Mecling, 1976). In this study, board structure refers to board size, independent directors and CEO dual role. In risk-taking context, these are the most debated variables in the literature (Adams et al. 2010; Hermalim & weibach, 2003).

Many authors argue that banks with good governance create less risk (Ellul & Yerramilli, 2013, De Andres and Vallelado, 2008). Yet many studies show that banks having good governance produce more risk (Erkens et al., 2012; Wang & Hsu, 2013). Furthermore, one governance produces a different impact on risk due to its board composition (Pathan, 2009). Such mixed empirical finding incites my investigation. The study in China shows that good governance incites higher risk-taking in banks (Mamatzakis, Zhang & Wang, 2017). Larger board takes less risk in the banking sector proved by many researchers (Cheng, 2008). Cheng (2008), documents that a larger board has a negative impact on all measures of bank performance like Tobin Q and monthly stock return, etc. There is a negative association between the bank's characteristics and the size of the board (Pathan (2009). Furthermore, research-based on questionnaire survey shows that there is a negative association between board size and financial risk-taking Wang (2012). .McNulty, Florackis & Ormrod (2013) document by studied the UK's firm sample that there exists a negative relationship between board size and risk taking. A negative relationship between board size and corporate risk taking is therefore expected, so the first hypothesis is as follows

***H_1**: There is a negative impact of board size on bank risk taking.*

According to the monitoring hypothesis, the existence of independent directors

incites less risk taking. This hypothesis document that information is availed at a high cost so, in this way independent directors take less risk (Boone, Field, Karpoff, & Raheja 2007; Linck, Netter & Yang, 2008; Raheja, 2005). There is a negative association between independent directors and risk taking (Brick & Chidambaran, 2008). Similarly, Pathan (2009) suggested that there is a negative relationship between independent directors and risk taking. This study, therefore, expects the negative relationship between independent directors and risk taking and form the second hypothesis as follows.

***H_2**: There is a negative impact of board independence on bank risk taking.*

Jensen (1993), documents that excessive powers in one hand incite the self-interested managerial behavior and ignore the risk monitoring system. However, it is proved that due to professional concern CEOs having more power tends to take less risk with the intention to project a positive image in the market (Demsetz & Lehn, 1985). This is also in accordance with the study conducted by Jensen & Meckling in 1976. Similarly, Kim and Buchanan (2008) documented that CEO/Chairman duality affects risk taking behavior negatively and thus this duality leads to lower risk taking by managers. However, some studies have reported positive effect of duality on managers' inclination toward risk taking (Pathan, 2009). This leads to the third hypothesis as follows.

***H_3**: There is a negative impact of CEO/Chairman duality on bank risk taking.*

2.3. Financial Liberalization

Financial reforms create liquidity and this liquidity is affected by the internal and external board structure of the banking sector (Holmstrom & Tirole, 2010). Board structure mechanism has been changed in many developed and developing countries due to the privatization of government-owned properties (Shleifer et al., 1997). Isik and Hassan (2003) suggested that the performance of Turkish banks' improves because of board structure changes due to the introduction of financial liberalization policies in this country from the period 1981 to 1990. The studies on the link between financial liberalization and credit allocation deserve special attention in literature in present times. Risk taking is increased when countries are introduced financial liberalization policies (Peterson & Rajan, 2002). Financial liberalization incites credit risk so; it affects the overall risk faced by the bank portfolio (Bofondi & Gobbi 2006). One study suggests

that when a country follows deregulation it adds to loan quality although it also influences the overall risk of the country (Bertrand, scholar, and Thesmar, 2007).

The link between board structure and risk taking has been discussed by Kirkpatrick (2009), a document that excessive risk taking appears in the country's banking sector where board structure is not good. Jensen (1993) explored that inefficiency increases when the bank has a larger board because they cannot finalize important decisions on time due to poor communication and coordination mechanism. Gilbert and Wilson (1998) find that financial liberalization incites excessive risk taking in the banking sector. Financial liberalization leads to the unexpected outcome of firms due to the weak board structure of firms (Illueca et al., 2011). The expected hypothesis is as follows.

***H_4**: Financial liberalization moderates the relationship between board size and bank risk taking.*

Lopes and Rodrigues (2007) and Maghzom (2016) explored that high risk is associated with a low percentage of independent directors on the board. Kirkpatrick (2009) explored that board structure inefficiency leads to a severe banking crisis. Classens and Laeven (2004) showed that foreign entry and activity of banks lead to competition and ultimately increases risk tendency of firms. Financial liberalization provides incentives or opportunities to takes risk. Liberalization, although contributes to increases economic growth but the weak governance of the firm leads it to the unwelcome and unexpected results (Illueca et al., 2011). So the proposed hypothesis is as follows.

***H_5**: Financial liberalization moderates the relationship between board independence and bank risk taking.*

The frequency and intensity of the banking crisis in the past few years increase due to more liberal financial policies around the world (Kaminsky & Reinhart, 1999). Financial liberalization incites excessive risk taking by providing more opportunities in local markets as well as the foreign market (Barth, Caprio & Levine, 2004). Illueca et al. (2011) find that financial liberalization produces undesirable output if governance at the corporate level not acts in the best way to provide benefits to organizations. The proposed

hypothesis is as follows.

H_6: *Financial liberalization moderates the relationship between CEO/Chairman duality and bank risk taking.*

2.4. Conceptual framework

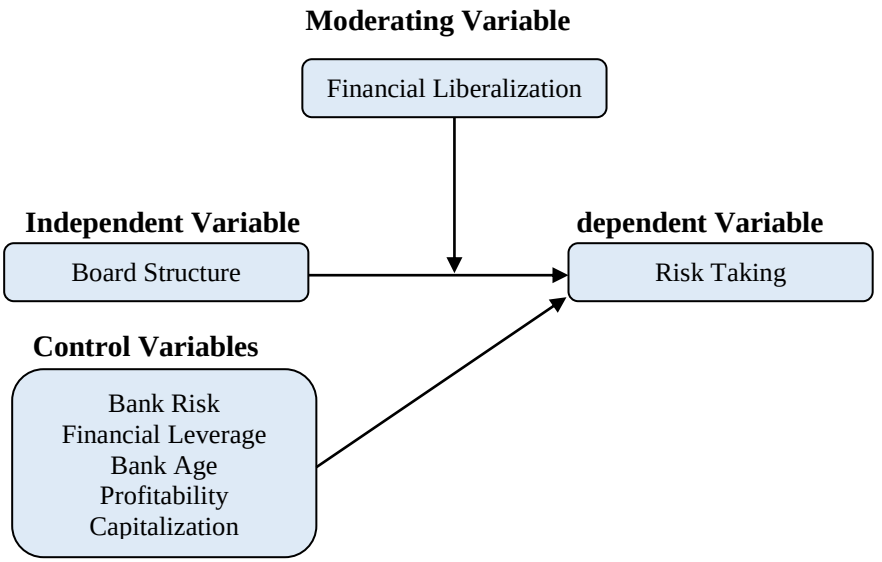

Figure:1 Model of Study

3. RESEARCH METHODOLOGY

This section discusses and justifies the methodological approaches of the current study. The Sample of the study contains all the banks listed on stock exchanges in ten Asian countries from period 2005-2015. From every country ten banks having the assets worth approximately two million and complete data for all variables and also for all study years have been included in the final sample. The sample includes only those banks on which board structure data is available from their annual reports. Numeric data for all the variables of board structure and risk taking is extracted from the annual reports of sample banks from their website. Data on macro-variable i.e financial liberalization is obtained from statistical reports published by the central banks of sample economies.

Table 1. Measurement of Variables		
Variables	**Proxy**	**Measurement**
Board structure variables	Board size	= Ln (Number of directors on corporate board)
	Board independence	= number of non-executive directors ÷ total directors
	CEO duality	= Equal to 1 if CEO and chairman is the same person and 0 otherwise
Risk taking measure	Non-performing loan	=NPL÷ gross loan
	z-risk	=[Average(ROA)+Average(CAR)]/ σ(ROA)
Domestic Financial liberalization	Laeven financial liberalization index	= equal 0 if the value is from 0-4 and 1 if the value is from 5-6.
Transnational Financial liberalization	Chin-ito index (adopted)	= equal 1 when restrictions are non-existent and 0 otherwise.

The operational definition of z-score according to Akber et al., (2017) is "the average of return on assets (ROA) plus the ratio of the average of a capital asset to the standard deviation of return on assets." Cuccinelli (2015) define a non-performing loan (NPL) as the ratio of non-performing loan to gross loan. It is represented by "NPL". The higher the NPL ratio, the higher will be the credit risk of the bank and vice versa.

The board structure is independent variable of study. Board size represents number of directors on the board. Following Cheng (2008), board size has been estimated by taking natural logarithm of the number of directors, while board independence has been proxied by percentage of independent directors on the board (Chen and Zhang (2014). According to Kim and Buchanan (2008), CEO/chairman duality is measured through binary variable, which takes value of 1 in case of duality and 0 otherwise.

The moderating variable of study is financial liberalization. This study uses two categories of financial liberalization; domestic financial liberalization (Laeven financial

liberalization index) and transnational financial liberalization (Chinn-to index). This study follows the technique for construction of financial liberalization index of Laeven (2003). Transnational financial liberalization index developed by Chin and Ito (2006) has been adopted for the current study.

Bank size has been measured by taking the natural log of reported total assets (Konishi & Yasuda, 2004). Following Ozkan (2004), financial leverage has been measured total debt as percentage of total assets. Fu, Lin & Molyneux (2014) employed a return on average assets to track the profitability of a bank's operating activities. The same measure of profitability has been used in this paper. The measure of capitalization is the ratio of total equity to total assets following Gosh (2015) and Beltratti and Stulz (2012). Akbar et al., (2015) denoted a risk committee by a dummy variable, which takes the value of 1 if firm has risk committee and 0 otherwise.

3.1. Empirical Models

This study specifically analyzes the negative effect of board structure on risk taking by managers. The moderating role of financial liberalization on relationship between boards structure and risk taking has also been investigated using panel data regression because this has many advantages. Hsiao (1985) said that panel data methodology overcomes the problems of heterogeneity and endogeneity and make results unbiased. The current study controls the problem of endogeneity and heterogeneity by following Wintoki, Linck, and Netter (2012) and uses a two-step panel dynamic generalized method of moment (system-GMM) estimator. Model 1 analyzes the direct influence of independent variables and controls on dependent variables. To check the moderating role of financial liberalization on the relationship between board structure and risk taking, multiple regression models have been used. Models 2 to 10 analyze the indirect impact of independent variables with moderator and control variables on dependent variables.

The model testing direct effects of board structure on risk taking is as follows:

$$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta 2(BSIZE)_{it}+\beta_3(IND)_{it}+\beta_4(DUL)_{it}+\beta_5(LFLIB)_{it}+\beta_6(KOPN)_{it}+\Sigma(W)_{it}+\varepsilon_{it} \quad \ldots\ldots.(1)$$

Where:

y= risk taking (Z-risk and NPL risk), β_0= the intercept of equation,βi= the coefficient of respective variables, LFLIB= Laeven financial liberalization index, KOPN=transnational financial liberalization index, BSIZE=board size, IND=board independence, DUL=CEO/ chairman duality, W is the vector of control variables (Ln(BS)=lagged value of bank size, LEV=leverage, AGE= firm age, Ln(ROA)= lagged value of profitability, RC= risk committee, ETA=capitalization), it= ith term at t time i=1,2,….n and t=Time=1,2,…. 11years

The models testing moderated regression analysis are as follows:

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(BSIZE)_{it}+\beta_3(LFLIB)_{it}+\beta_4(BSIZE)*(LFLIB)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……. (2)

Where: BSIZE*LFLIB= board size and domestic financial liberalization interaction term and other variables are same as in model number one.

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(BSIZE)_{it}+\beta_3(KOPN)_{it}+\beta_4(BSIZE)*(KOPN)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……. (3)

Where: BSIZE*KOPN= board size and transnational financial liberalization interaction term and other variables are same as in model one.

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(IND)_{it}+\beta_3(LFLIB)_{it}+\beta_4(IND)*(LFLIB)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……. (4)

Where: IND*LFLIBB= board independence and domestic financial liberalization interaction term and other variables are the same as in model number one.

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(IND)_{it}+\beta_3(KOPN)_{it}+\beta_4(IND)*(KOPN)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……. (5)

Where: IND*KOPN= board independence and transnational financial liberalization interaction term and other variables are same as in model one.

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(DUL)_{it}+\beta_3(LFLIB)_{it}+\beta_4(DUL)*(LFLIB)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……. (6)

Where: DUL*LFLIB= CEO duality and domestic financial liberalization interaction term and other variables are the same as in model one.

$Y_{it}=\beta_0+\beta_1(Y)_{(it-1)}+\beta_2(DUL)_{it}+\beta_3(KOPN)_{it}+\beta_4(DUL)*(KOPN)_{it}+\Sigma(W)_{it}+\varepsilon_{it}$ ……(7)

Where: DUL*KOPN= CEO/chairman duality and transnational financial liberalization interaction term and other variables are same as in model one.

4. RESULTS AND ANALYSIS

Summary statistics of concerned variables of the study are presented in Table II. Z score (insolvency risk), BNK score (insolvency risk), loan loss provision (credit risk)

and non-performing loan ratio (credit risk) have mean (standard deviation) of .03(.12), 1.53(.93), 11.98(.1.61) and 5.14(6.11) respectively. The average (standard deviation) of laeven financial liberalization and transnational financial liberalization are represented respectively, 0.70(0.45) and 0.45(0.31). On average, board size of sample firms consists of 6 directors. An average percentage of independent directors on board is about 52%. Furthermore, the CEO/chairman duality shows that only 33.6% of banks have combined positions. In addition, mean (standard deviation) of control variables are; bank size 16.06(1.69), financial leverage .13(.12), firm age 59.73(31.65), capitalization .09(.04), risk committee .63(.48) and profitability .14(.21). Ozkan (2007) and McNulty et al (2013) have reported nearly similar nature of Descriptive statistics.

Table II. Descriptive Statistics of Variables

	Avg/Mean	Standard. Deviation	Minimum	Median	Maximum
Z risk	0.032	0.125	-2.243	0.019	2.115
NPL risk	5.142	6.117	0.010	3.515	18.280
BSIZE	6.349	0.272	1.386	4.398	11.736
IND	0.518	0.181	0.053	0.385	0.900
DUL	0.036	0.473	0.000	0.000	1.000
LFLIB	0.709	0.454	0.000	1.000	1.000
KOPN	0.457	0.310	0.166	0.415	1.000
LBS	16.067	1.692	9.905	16.242	19.025
LEV	0.134	0.127	0.000	0.098	0.848
Age	59.743	31.651	6.000	58.000	164.000
ETA	0.090	0.040	-0.033	0.083	0.311
RC	0.632	0.483	0.000	1.000	1.000
LROA	0.148	0.215	-2.151	0.115	3.079

Notes: Table II presents descriptive statistics of variables for study, where, (LFLIB) is leaven financial liberalization index, (KOPN) is transnational financial liberalization,(Z risk) is z score, (NPL) is non -performing loan, (BSIZE) is board size,(IND) is independent director, (DUL) is CEO/chairman duality. Controls variables include L (BS) is bank size, (LEV) is financial leverage,(Age) is bank age,(ETA) is capitalization, (RC) is risk committee and L (ROA) is profitability.

4.1. Analyzing the impact of board size, independent directors and CEO/chairman duality on insolvency risk and credit risk.

In this part, the impact of board size, independent directors and CEO/chairman

duality on both types of risk taking is analyzed. To study the determinants of risk taking in Asian countries, two-step dynamic GMM has been used. The regression results in Table III show that board size significantly affects risk taking. This finding is robust to various measures of risk taking. It is significant and negative under credit risk (NPL-risk). The relationship of board size is also positive and significant at 1 % significance level under insolvency risk (Z-risk). Negative relationship indicates that more board members take less risk. According to agency theory, communication and coordination issues in board structure hinder board members to discuss crucial decisions at right time. Accordingly, we accept Hypothesis 1 that board size has significant negative impact on inclination of managers towards risk taking. These negative signs are consistent with Lewellyn and Muller-Kahle, (2012) and positive relationship is consistent with Gonzalez and Andre (2014).

Table III. Impact of Board size, Independent directors and CEO/ chairman duality on risk taking.

	(1)	(2)
Dependent Variable	**Z-Risk**	**NPL-Risk**
BSIZE	0.045*	-0.151**
IND	-0.028**	-0.431**
DUL	0.013***	-0.268***
LFLIB	-0.013**	0.289**
KOPN	- 0.016*	-2.450**
LBS	-0.002**	-0.601**
LEV	-0.045**	0.447*
Age	-0.007**	-0.343**
ETA	0.960**	11.864*
ROA	0.112**	-1.696*
RC	0.009**	0.121
$Risk_{(t-1)}$	-0.155*	.0.823**
constant	0.6541***	20.8043***
Sargan (p-value)	0.4794	0.2814
OBS	1100	1100

Notes: Table **III** presents the results of the GMM. Sargan test is for instruments validity under the null that instrument is valid, and OBS means total observations for study.
***.significant at the 1% level
** Significant at the 5 % level
* Significant at the 10 % level

The regression results in Table III denote that there is a negative relationship

between the independent directors under all risk measures at 5 % level of significance. So we accept Hypothesis 2 of the study. The negative effect of independent directors on risk taking means that a higher percentage of independent directors on the board leads to lower risk taking behavior. Agency theory also suggests that independent directors are more concerned about their reputation and employment so take less risk. This can be attributed to two reasons (i) independent directors have more experience and skills and (ii) Independent directors have more incentive to comply with regulations set by government regulatory authorities. (Pathan, 2009). This finding is in line with the reputation hypothesis, suggesting that INDs give more importance to their professional image in the market that's why taking less risk (Fama, 1980; Fama and Jensen 1983). The results are consistent with Brick and Chidambaran (2008).

The effect of CEO power has been found having a positive and significant effect on insolvency risk (z-risk) and negative significant under credit risk. Thus, Hypothesis 3 is supported because it has been found that duality of CEO and chairman negatively affects risk taking ability of managers. The negative coefficient of CEO/chairman duality implies that CEO who is also chairman of the board takes less risk. It can be observed here that the separation of CEO and chairman positions would give greater transparency and accountability on firm crucial decisions and information, which aims to increase shareholder trust and ultimately creates less bank risk taking. Furthermore, agency theory suggests that managers avoid taking the risk due to their concern for good professional and reputation image in the market. The positive results of the study are consistent with Beasley et al. (2000). Our most results of control variables are consistent with previous literature in this area. Sargan test indicates the homogeneity of the instruments used in equations. The p-values of Sargan test are significant which indicates exogenous nature of instruments used in study.

4.2. The impact of board size, independent directors and CEO/chairman duality with financial liberalization on insolvency risk.

The outcomes of the interaction between board structure and financial liberalization on insolvency risk are presented in Table IV. It indicates that the coefficient of board size is positive and significant, while the interaction of board size and domestic

financial liberalization is positive and significant at 1 %. It denotes that domestic financial liberalization has significant moderation effect on causality between board size of firms and risk taken by managers. Here, it can be inferred that the number of directors on board result in excessive risk taking by banks when country is domestically financial liberal. One explanation for this positive relationship according to risk homeostasis theory is that when the country is domestically financially liberal, board members take the risk to get benefits of the prolific opportunities in native market. The coefficient of interaction of board size and transnational financial liberalization is negative and significant at the 5 % level. It indicates that transnational financial liberalization moderates the relationship between board size and risk taking. It can be inferred here, that when the country is transnationally financially liberal board members do not take the risk, because cross border transactions bring more cost and uncertainty due to country's own and foreign countries' unstable economic and political conditions. These findings support hypothesis 4.

The regression results in Table IV indicate that board independence has a negative significant relationship with risk taking at a 10 % level of significance. The coefficient of the interaction of independent directors and transnational financial liberalization (-0.034) is at 10 % significance level. It denotes that transnational financial liberalization moderates the relationship between independent directors and risk taking. It can be inferred here, that higher percentage of independent directors on board does not result in risk taking if country is transnationally financial liberal. This shows that when the country is transnationally financially liberal, independent directors do not take the risk because it involves a higher cost of gets information from abroad. Domestic financial liberalization does not moderate the relationship between independent directors and risk taking. Accordingly, we accept hypothesis H5 under insolvency risk.

The results of the estimation of the interaction effect of CEO/chairman duality with financial liberalization on insolvency risk are also reported in Table IV. The coefficient of CEO/chairman duality is positive significant at 5 % level of significance. It shows that domestic financial liberalization moderates the relationship between CEO/chairman duality and risk taking. Here, it can be observed that higher percentage of

CEO/chairman duality onboard result in risk taking by banks if country is domestically financial liberal. Transnational financial liberalization does not moderate the relationship between CEO duality and risk taking. Accordingly we accept hypothesis H6 of the study. Reputation hypothesis (Fama, 1980) supports a positive relationship. In the context of risk homeostasis theory, it can be argued that CEO/chairman takes risk after knowing its costs and benefits. The p-values of Sargan suggest that the instruments of the study are exogenous under all six models. The same results have been got for credit risk, proxied by non-performing loans as percentage of gross loan.

Table IV. Results of estimation of board structure and financial liberalization on Insolvency risk.

Dependent variable; Z-risk						
Domestic and transnational financial liberalization						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables	**BS_LFL**	**BS_KOP**	**IND_LFL**	**IND_KOP**	**DUL_LFL**	**DUL_KOP**
BSIZE	0.018***	0.012***				
IND			-0.022**	-0.026**		
DUL					0.005**	0.006
LFLIB	-0.165***		0.009***		0.016***	
KOPN		0.248***		-0.038***		-0.33***
BS*LFLIB	0.070***					
BS*KOPN		-0.111**				
IND*LFLIB			-0.022**			
IND*KOPN				-0.034*		
DUL*LFLIB					0.012***	
DUL*KOPN						-0.003
LBS	-0.016**	-0.002**	-0.017***	-0.003	-0.128	-0.020***
LEV	-0.020**	-0.037**	0.079***	-0.120*	-0.032*	-0.069**
Age	-0.003**	-0.004**	-0.006***	-0.005***	-0.006*	-0.005*
ETA	0.393*	0.377*	0.941**	-1.028**	-0.906***	-0.838***
RC	0.004***	-0.010**	0.021***	0.040***	0.009**	0.019**
ROA	-0.055**	0.046***	0.126*	-0.129*	0.113**	0.116***
$Risk_{(t-1)}$	-0.104*	-0.091**	-0.210***	-0.198***	-0.157***	-0.209***
constant	0.529***	0.055***	0.840***	0.567***	0.810***	0.859***
Sargan (P-value)	0.5013	0.8037	0.4755	0.4531	0.5908	0.5521
OBS	1100	1100	1100	1100	1100	1100

Notes: Table IV presents dynamic panel generalized method of moments estimator's results, where, BS*LFLIB is interaction term of board size and domestic financial liberalization index, BS*KOPN is an interaction term of board size and transnational financial liberalization, IND*LFLIB is interaction term of independent directors and domestic financial liberalization

index, IND*KOPN is an interaction term of independent directors and transnational financial liberalization, DUL*LFLIB is interaction term of CEO/chairman duality and domestic financial liberalization index, DUL*KOPN is an interaction term of CEO/chairman duality and transnational financial liberalization. The results presented in this table are obtained from the two-step GMM approach, using z-risk, as proxy for risk taking. Sargan test is for instruments validity under the null that instrument is valid.
***.significant at the 1% level
** Significant at the 5 % level
* Significant at the 10 % level

5. CONCLUSION

It is revealed that more board members have a negative impact on risk taking. Thus higher the number of board members is, the lower the level of risk taking will be. Moreover, the results of the study suggest that independent directors have a negative impact on risk taking. We concluded the few possible reasons may be for this result such as the independent directors have relevant experience, and apart from complying with their legal obligations of due care and skills, they also lack a direct interest in the company's performance. This effect could be reduced by focusing on the minimization of agency conflicts. Furthermore, the findings of the study reveal that CEO duality has a negative impact on risk taking. It suggests that if the CEO is also chairman of the board, he will take less risk due to his own concerns for professional reputation.

This effect can be minimized by efficiently managing agency conflicts. It is concluded that the interaction effect of board structure and domestic financial liberalization increases the risk taking behavior. It depicts that board structure takes a risk when the country is domestically financially liberal. Further, more prolific opportunities are available at a reasonable cost when the country is domestically financial liberal. These opportunities are a source of motivation for board structure to take the risk. The interaction effect of board structure and transnational financial liberalization is significant and negative with risk taking. Furthermore, when the country follows the transnational financial liberalization reforms then productive opportunities become difficult to avail.

Banks should ensure a balanced composition of their board structure through external monitoring of independent board members and separate role of CEO/chairman duality for transparency and stronger accountability of crucial decisions and information.

Five policies of domestic financial liberalization should be studied separately instead of index, to analyze that which policy contributes more or less in risk taking. Despite its practical contribution current study has some shortcomings. Data before 2005 and after 2015 has not been used due to missing reports and unavailability of some variables of sample banks.

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