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*/Journal of Asian Finance, Economics and Business Vol 7 No 4 (2020) 81- 95*

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# The Board Size and Board Composition Impact on Financial Performance: An Evidence from the Pakistani and Chinese's Listed Banking Sector

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## Abstract

The main objective of this research is to investigate the impact of board size and board composition on financial performance of banks. The sample of this study consists on two countries listed bank sector Pakistan and China. The annul data is used from 2009-2018 to find the objective of this study. The Panel regression model is used to check the relationship between dependent and independent variables. Return on Asset and Return on Equity is used as performance checker dependent variables. The results of this study confirm board size coefficient value positive for ROA and negative for ROE but shows insignificant behavior for Pakistani banking sector while in Chinese banking sector the coefficient value of board size positively for ROA and ROE at 10% level. The board composition coefficient shows the negatively significant with ROA but insignificantly related to ROE for Pakistani banking sector. However, in Chinese banking sector the coefficient value of board composition is insignificant for both ROA and ROE.   This study is helpful for banks, management of banks, policy makers, researcher as well as Government.

## 1. Introduction

This article determined the impact of board size and composition on the financial performance of Pakistani banking sector. Board's composition and size has effects the performance of banks in the term of finance, that's why

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many researchers have been attracted and influence. The banking sector is generally point of high attention in present research to observe the affiliation among bank performance and corporate domination. Research studies on relationship among structure of board and financial performance, banks specific previous literature is limited. Nevertheless, Board structure and how banks are governed may distress financial performance in several ways and even leads to excellent financial performance or corporate disaster. In addition to many other factors, the poor board structure of banks has instigated the worldwide crisis of finance, which began in 2007-2008.

The board of director decisions is very important for the firm's financial performance. It is considered that the decisions of a manager can be observed by the inside corporate governance (Fama, 1980). The board structure could be managed the agency problems between shareholders and management of upper level (Hermalin & Weisbach, 1991). A renewed administered organization is probable to improved financial performance and coherent decisions board of director's influence the corporate governance. Consequently, it is probable that the firm

financial performance has been influencing by the board structure of firm.

The features and nature of the board structure of banks are almost different from other firms. The balance sheet of banks difference from other firm's(balance sheet of banks are highly leveraged), the assets and liabilities of banks is inconsistency in liquidity and structure, deposit of insurance fund, the inspiring bank manager and shareholders to provided insurance to depositors take on thrilling risk, the debt to banks equity ratio is many prominent encounters between shareholders and interest of lenders, as a governance appliance, is more important in banks and other firms (Macey & O'Hara, 2003).

Firstly, the distinctive feature of corporate ascendancy we used in the study is board size. Many studies are acclaimed negative connection among financial performance and size of board. While the board size directors is not positively connected with firm value. Since bigger size of board hinder the performance and firm earn less profit as less efficient use of assets (Yermack, 1996).

Jensen (1993) reported that restricted large board numbers of the director are necessary for good board structure. Researcher uncovers that firm's board size has negative effect the decision making quality and financial performance of firm (Hermalin & Weisbach, 2003). Mak and Kusnadi (2005) suggest that the firm's in Malaysia and Singapore has strong negative influence by board size. The governing for different types of endogeneity and large sample is selected of UK listed firm, Guest (2009) reported that the board size calculates through stock return and Tobin's Q has negatively affected profitability of firm. Connell and Cramer (2010) investigate the listed firms on the stock market of Irish is calculated through financial Q and ROA, found an adverse relation among the board size and firm's monetary performance. Gill and Mathur (2011) reveal an adverse relation among firm profitability and size of board, based data sample used by service firms of Canada. Nguyen, Locke, and Reddy (2014) selected ta for the period of 2008 to 2011 of 257 listed non-financial firms of Singapore. They determined significantly opposing consequence on financial performance of firm by the board size after endogeneity problem has controlled.

The outside board of directors is another variable that we examine for a possible relationship with bank financial performance. Hermalin and Weisbach (2003) found that non-executive directors, that interest with management does not common, considering the management of firms are effective. The board of directors relatively more affect the CEO can affect non-executive directors. Thus, the independent director may affect them positively on corporate governance for the financial performance of firm. Besides this, the negative correlation with the financial performance of firm may be due to high proportion of self-governing directors. So, the findings of an individual director's independence and financial performance of firm are mixed.

Numerous researcher findings or unvarying relation among the firm's financial output and the self-governing directors of the board. The researcher investigates that external board of directors has a light, but meanwhile insulated effect the financial performance of firm (Baysinger & Butler, 1985). Their findings propose that decrease the response additions of independent directors due to increased firm's financial performance. Many investigators explained non-significant relation among the proportion of external executive on board size and financial performance of banks (Hermalin & Weisbach, 1991).

The board structure has an extensive range of features existed, like outside directors, independent director, CEO duality, size, the composition of board, member ownership, race, nationality, and panel members educational level. By calculating ROE and ROA, relationship among financial performance of Pakistani commercial banks and governance of corporate evaluated. In this paper regression model applied; we unified size and composition of board. Besides these variables, we also use BS (bank size), NIM (Net Interest Margin), and SO (solvency) as bank control variables. We also used exchange rate of PAK rupees/ Chinese RMB against US$ as macroeconomic variables.

## 1.1. History of Pakistani Banks

All commercial banks in Pakistan are working as per financial companies' ordinance 1962. The state bank of Pakistan is managing and controls the whole banking sector in Pakistan, that's also called the central bank. The central bank of Pakistan controls and express deflation and inflation in-country through monetary policy. The smooth functioning banking sector is imperative of every growing economy.

The monetary arrangement of Pakistan is controlled and managed by commercial banks. The Pakistani banking structure experienced meaningful modification after 1997. When the process of supervision was allied with the top international banking sector. A large number of transactions of capital markets and money are through banks in Pakistan. So, this kind of risk predominantly in the financial sector after 1990. The result of financial risk, the important risk management in financial institution to control financial crises which are occurred in 1994, 2000 and 2007 respectively. Pakistan has launched the Rehabilitation program after the crisis in 2001.

The development in the finance sector of Pakistan is started in 1990 (see Table 1). Restructuring in the banking sector happened major changes are as follows. Firstly, the

quality of service is increased the primary function of privatization of banks through professionalism. Secondly, the privatization of banks increases the profit because of product innovation, the deficiency and inefficiency service quality during the nationalism of Pakistani banks decreased the profit. Thirdly, the decreased in default ratio of borrowers due to improvements in banking sector, banks introduced easy procedure the loan evaluation (Salma &

Ahmad, 2011). So that there have many studies on banks performance are mixed, the types of banks and numbers of countries included. Most of researcher used ROE and ROA as the performance indicator (Delis & Stakouras, 2006; Hassan & Bashir, 2003), besides this researcher has also used NIM as indicator of performance (Khrawish, 2011).Table 1 shows the total assets of Pakistani listed banks at the end of December 2018.

**Table 1:** List of Listed Banks in Pakistan

| No | Name | Abbreviation | Date of Commencement | Assets(PKR'000') | Year |
|----|------|--------------|----------------------|------------------|------|
| 1 | Allied Bank Ltd. | ABL | 01-07-1974 | 1,350,606,103 | 2018 |
| 2 | Askari Bank Ltd. | ASBL | 23-02-1992 | 706,532,042 | 2018 |
| 3 | Bank Al-Habib Ltd. | BAHL | 21-12-1991 | 1,048,239,003 | 2018 |
| 4 | Bank Al-Falah Ltd. | BAL | 01-10-1992 | 1,006,217,843 | 2018 |
| 5 | The Bank of Khyber | BOK | 19-09-1994 | 223,094,983 | 2018 |
| 6 | The Bank of Punjab | BOP | 19-09-1994 | 714,379,592 | 2018 |
| 7 | Bank Islami Pakistan Ltd. | BIPL | 13-03-2006 | 215,743,256 | 2018 |
| 8 | Faysal Bank Ltd. | FBL | 04-12-1994 | 599,914,183 | 2018 |
| 9 | Habib Bank Ltd. | HBL | 25-08-1941 | 3,025,853,150 | 2018 |
| 10 | Habib Metropolitan Bank Ltd. | HMPB | 26-10-2006 | 678,839,378 | 2018 |
| 11 | JS Bank Ltd. | JS | 25-05-2006 | 460,541,247 | 2018 |
| 12 | Muslim Commercial Bank Ltd. | MCB | 17-08-1948 | 1,498,130,061 | 2018 |
| 13 | Meezan Bank Ltd. | MBL | 28-03-2002 | 937,915,405 | 2018 |
| 14 | National Bank of Pakistan | NBP | 08-11-1949 | 2,803,886,256 | 2018 |
| 15 | SAMBA Bank Ltd. | SAMBL | 20-10-2008 | 229,938,300 | 2018 |
| 16 | Silk Bank Ltd. | SILBL | 30-04-1995 | 173,676,786 | 2018 |
| 17 | Standard Chartered Bank(Pakistan) Ltd. | SCBPL | 30-12-2006 | 576,081,336 | 2018 |
| 18 | Summit Bank Ltd. | SUMBL | 01-10-2007 | 199,951,491 | 2018 |
| 19 | United Bank Ltd. | UBL | 09-11-1959 | 2,002,492,874 | 2018 |
| **Total** | | | | **18,452,033,289** | |

## 1.2. History of Chinese's Banks

The banking sector of china is complex and large between emerging economies. The total assets of Chinese's banks approximately reached RMB178.67 trillion at the end of 2018. The banks have tremendously leading position in the financial sector of China and also a very important mechanism for economic growth of country. Additionally, with large bank size the banking sector of china have significantly better effect on financial system all over the world. The banking system of china has changed and improvements with Chinese's economic reform since1978. The Improvement in banking sector can allocate in different period: firstly, restructuring of initial institutional (1979 to 1984); secondly, big four commercial

banks state-owned ownership established (1984 to 1994); thirdly, state banks have been reformed (1994 to 2003); fourthly, the reform in ownership and competition with foreign banking sector from 2003 to date.

Firstly, the corporate governance structures in Chinese's banking sector have many reforms from 2003. Firstly, in April 2003 the biggest reform in corporate governance of banks is funding the China banking regulatory commission. Complex banking system needs for specialized regulation was put force by CBRC. The financial sector of china is working under the rule and regulation of CBRC, the law of banks implementing, the financial segment supervising and inspiring better corporate governance.

Secondly, the Agricultural bank of china, Bank of China, China construction bank, Industrial and Commercial bank

of China the state-owned banks have effectively converted to shareholding firms by IPOs and recapitalization. ICBC is the prime body globally by profit before tax at 2010. Currently, Industrial and Commercial bank of China is biggest state-owned commercial bank around world. Furthermore, the CBRC was also included bank of communication in stated-owned commercial banks in 2007 because of its large bank size. The process of restructuring, better corporate governance engine is applied like this, number of boards of director, top-level management operations and shareholder's meetings.

Thirdly, the numbers of Chinese's banks going public are increasing. The state-owned bank has total assets over 80% of Chinese's banking sector in 2003. So, the ratio is decreased to 60% of the total asset in 2010. The China Construction Bank has first time successfully first time offer to public at stock exchange of Shanghai and Hong Kong in 2005, and also the Agricultural Bank of China offering in 2010. The Chinese's banks are higher expose standards in the subject of market discipline after offer to public, so that the corporate governance structure of bank has significantly improved. Table 2 shows the total assets of Chinese's listed banks at the end of December 2018.

**Table 2:** List of Listed Banks in China

| No | Name | Abbreviation | Date of Commencement | Assets(RMB'000') | Year |
|---|---|---|---|---|---|
| 1 | Shanghai Pudong Development Bank | SPD | 09-01-1993 | 6,182,868 | 2018 |
| 2 | Huaxia Bank Co, Ltd. | HXB | 14-10-1992 | 2,607,688 | 2018 |
| 3 | China Minsheng Bank Corp, Ltd. | CMBC | 12-01-1996 | 5,994,822 | 2018 |
| 4 | China Merchants Bank Co, Ltd. | CMB | 08-04-1987 | 6,745,729 | 2018 |
| 5 | Industrial Bank Co, Ltd. | IBC | 26-08-1988 | 6,549,432 | 2018 |
| 6 | China CITIC Bank Corp, Ltd. | CITIC | 01-01-1987 | 362,944,791 | 2018 |
| 7 | China Everbright Bank Co, Ltd. | CEB | 12-08-1992 | 4,357,332 | 2018 |
| 8 | Agricultural Bank of China Ltd. | ABC | 01-01-19951 | 22,609,471 | 2018 |
| 9 | Bank of Communication Co, Ltd. | BoCom | 01-01-1908 | 9,531,171 | 2018 |
| 10 | Industrial and Commercial Bank | ICBC | 01-01-1984 | 27,699,540 | 2018 |
| 11 | China Construction Bank Ltd. | CCB | 01-10-1954 | 23,222,693 | 2018 |
| 12 | Bank of China Ltd. | BOC | 01-01-1912 | 21,267,275 | 2018 |
| 13 | Bank of Beijing Ltd. | BOB | 29-01-1996 | 733,006,384 | 2018 |
| **Total** | | | | **1,232,719,196** | |

## 2. Literature Review

Besides, there are many theories defining whether the financial performance of firm may be influenced by the structure of board, this paper assistance from the agency theory and the resource dependence theory to know the relation among structure of board and financial performance of the firm. The roles of board members are discoursing a different view highlights. The role of board member to resolves management complications between executives and investors by emphasizing agency theory (Fama & Jensen, 1983). In that portion, findings and preceding theory develop as well as, we also test our hypotheses for Pakistani and Chinese's financial sector. They concluded that the market risk of all banks is

positively significant at 1% level; the exchange rate risk of MCB and BOP banks is significant but all other banks insignificant (Majeed, Jun, Mohsin, Rafiq, & Salamat, 2019).

The prevailing literature corporate governance of banks is mainly focused on influence of proprietorship structure on financial performance of Chinese banks. Garcia-Herrero et al. (2009) selected 87 Chinese banks, using board statistics for the period of 1997 to 2004 and found that the bank's profitability should be increased due to less concentrated on banking ownership. Fu and Heffernan (2009) uncover the relation among the Chinese banking sector performance and market structure, used the data for the period of 1985 to 2002 and concluded the state-owned banks have increased X-efficiency and profitability. Lin and Zhang (2009) uncover the period of simple actions through SOCB of proficiency, asset quality and

profitability on penal data for the period 1997 to 2004 of Chinese banks. Berger, Hasan, and Zhou (2009) investigate the efficiency has correlated between ownership of foreign and board size by selecting the sample of 38 commercial banks of China covering period 1994 to 2003. Rowe, Shi, and Wang (2011) investigate the impact on board, percentage shares, size of board, executive and independent director on Chinese banks presentation by incorporating the statistics of 41 banks. The VECM display is used to expression at the short-run construction among macroeconomic factors, stock price and the speed of adjustment toward the long-run equilibrium level (Naseem, Fu, ThaiLan, Mohsin, & Zia-ur-Rehman, 2019).

Determinants of Pakistani banking performance are associated with external and internal factors. So, some study on a specific country and on other side study considered the different countries to find the banks performance. The study of outside and some internal factors considering the autonomous variables, while some specific factor like ROE and ROA as dependent variables (Bourke, 2013). They determined that the volatility in dollar against Pakistani currency is very high. The government should take strong step to stable the exchange rate (Mohsin, Naseem, Muneer, & Salamat, 2019). Tabash, (2019) uncover a significant association among financial performance and disclosure in the UAE Islamic banks. The regression results describe that Islamic banks with higher levels of disclosure lead to higher financial performance.

The results described that an increase in financial performance due to Economies of scale and companies that concentrated on a small number of items, diversified products into four to furthermore, or owned two suppliers to four,highlight the positive results in financial performance (An & Kim, 2019). This study investigate that large board is the significant descriptive variable in improving firm performance. This study also highlights that board independence and female directors have no significant relationship with firm performance (Rahman & Saima, 2018).

## 2.1. Bank Financial Performance and Board Size

In literature, it is widely known the board size is a dynamic core system of board structure and plays a main part in the administration of firms. For this purpose, the financial performance of firm influence by board size, so that board size is most deliberated issue in board structure. The board size in small size may influence the agency theory and banks better monetary performance. Furthermore, the CEO cannot easily stimulus the monetary presentation of company by smaller board size; the management actions are more effective apparently by smaller board (Lipton & Lorsch, 1992; Jensen, 1993; Pfeffer & Salancik, 1978; Goodstein, Gautam, & Boeker, 1994; Dalton, Daily, Johnson, & Ellstrand, 1999; Ruigrok, Peck, & Keller, 2006). According to the resource dependence concept's, larger number of directors board size might be beneficial for monetary performance of firm, larger size of board directors in board may give more opportunity than smaller boards.

The researchers found that adverse relationship among size of board and profitability of banks by selected the data from the period of 2002 to 2004 of 58 European banks (Pahtan & Robert, 2013). Agoraki, Delis, and Staikouras (2010) discovered adverse relation among the financial performance of banks and board size calculate by profit and cost efficiency covering the period of 2002 to 2006 through using a data of banking sector for 12 European countries. The conclusion recommends that bank financial performance is more efficient with smaller boards of banks.

Pathan and Faff (2013) used sample of United States banking company's period of 1997 to 2011, originate that negative connection among board size and bank financial outcomes. Liang, Xu, and Jiraporn (2013) uncover impact structure of board like size, composition, board director's function on monetary outcomes of banks and asset value by means of 50 commercial banks of China sample covering period 2003 to 2010. So the conclusion showed that the adverse impact of ROE and ROA reliant on financial performance of banks. Belkhir (2009) examine the correlation among board size and firm's financial performance. He concluded the positively correlated of ROA and Tobin's Q with financial performance of firm, by incorporating data from the period of 1995-2002 of United States banking sector.

Adams and Mehran (2012) uncover the association among the board structure and financial performance of the firm by selected data of large banks of US from 1986-1999. They found the positive relation between banks monetary performance and size of board calculated by Tobin's Q. Coles, Daniel, and Naveen (2008) suggest the affiliation among size of board and Tobin's Q is U-shaped, through investigation the huge or small is ideal. They found the association among board size and Tobin's Q is negative for the simple firm and positive effect on complex firms. Andres and Vellelado (2008) conclude that u-shape relation among financial performance of firm and board size by incorporating the statistics of 69 commercial banks of six developed countries (US, UK, Spain, Italy, Canada and France).

Kaymak and Bektas (2008) and Bektas and Kaymak (2009) examine the relationship between board size and financial performance of bank is non-significant, by working under BIST data set 12 banks are used, the results recommend that the negative relationship among bank's

profitability and board size. Dogan and Yildiz (2013) uncover impact size of board on firm's financial performance by selected data from 2005 to 2010 and 2006 to 2008 respectively.

## 2.2. Bank's Financial Performance and Composition of Board

Self-centred actions of the manager to reduced agency problems through agency theory, the board better monitor the advent of non-executive directors on board authorization (van der Walt & Ingley, 2003; Nicholson & Kiel, 2007). Inconsistency by appearance, employing additional non-executive directors gives better opportunity of independent directors to board and outside board members existence inboard may increase financial performance of firm and effectiveness (Fama & Jensen, 1983). The dependence of resource and agency theory forecast that the firm financial performance may improve by adding more outside executive's in board. A common definition of board independence used in literature is percentage of external director number of total directors on the board. Choi and Hasan (2005) analyze impression the structure of board and proprietorship structure on monetary performance of banks by selecting data from 1998 to 2000 of Korean commercial banks. So, researcher investigates how existence non-executive directors, particularly overseas directors influence the bank's financial performance.

They suggest non-significant association among sum of outside directors in board and financial performance of banks. Investigator uncovers the relation among the structure of board and financial performance of firm by using data of banking companies, there has found no relation among the structure of board and financial performance of firm (Adams & Mehran, 2012).

Cornett, McNutt, and Tehranian (2009) used statistics of USA larger financial firms from 1994 to 2002; analyze the board structure on earning management. The relationship between bank financial performance and independent directors used by ROE and ROA has to be found positive. Thai commercial banks data used from 1999 to 2003, suggest positive relation among the outside independent directors and ROE measure bank's financial performance (Pathan, Skully, & Wickramanayake, 2007). Pathan and Faff (2013) investigate the bank's monetary performance is in negative relation with percentage of self-governing directors for US banks for the period 1997 to 2011. With the Turkish framework, suggest the bank's financial performance is not associated with outside directors calculated by return on asset (Kaymak & Bektas, 2008). On the other side, Bektas and Kaymak (2009) uncover the results mixed about non-executive director's performance.

## 2.3. Hypothesis

**H1:** Size of the board is significantly related to the financial performance of the bank.
**H2:** The composition of the board is uncorrelated with the financial performance of the bank.
**H3:** Size of the bank is significantly related to the financial performance of the bank.
**H4:** Net interest margin is a significant relationship with the financial performance of the bank.
**H5:** Solvency is significantly related to the financial performance of the bank.
**H6:** Exchange rate is significantly related to financial performance of the bank.

## 3. Methodology

### 3.1. Data and Sample

An evaluation carried out to measure the impact board size and composition on financial performance of Pakistani and Chinese's recorded commercial banks. The panel data of 19 mentioned commercial banks working in Pakistan, while 13 listed commercial banks working in china, from 2009 to 2018 will be used for Research. However, the data about bank's control variables of Pakistani listed commercial banks are obtained from financial statements of banks, the information about size and composition of board (non-administrative members) extracted from yearly information of commercial banks. Statistics about the macro-economic variable is extracted from Federal statistical Bureau of Pakistan (FSBP). However, the data about bank's control variables of Chinese's listed commercial banks collected from financial statements and about board size & composition is extracted from banks annual statements. While the data of macroeconomic variable collected from China statistics book 2018.

#### 3.1.1. Explanation of Variables
*Bank Performance Variables:*
**Return on Asset:** A major dependent variable Return on asset indicates the profitability of the bank. The company used resources efficiently to generate the maximum income with the help of this ratio. The return on asset also tells us the management efficiency of firm.

$$= \frac{\text{Net profit after tax}}{\text{Total Assets}} * 100$$

**Return on Equity:** It tells us how much company earns profit compared with the total amount of shareholder equity (showed in the balance sheet). If the return on equity is high, it's better for profit generation of any firm.

$$= \frac{\text{Net profit after tax}}{\text{Total Shareholder equity}} * 100$$

*Board Structure Variables (Independent Variable):*

**Board Size:** Board size term of board structure used as the independent variable. Many studies in the literature explained the association among financial performance and structure of board. The term board-size is the overall sum of directors in structure of board. We defined board structure are chairman, CEO, President and general sectary of banks.

**Composition of Board:** Composition of Board is another term of board structure used as independent variable in study. Board composition is sum of external executives in structure of the board.

*Banks Control Variables (Independent Variables):*

**Bank Size:** Size of a bank is calculated through the normal logarithm of total assets in this study. The higher productivity of banks may be influenced by many other assets.

**Net Interest Margin:** The difference among interest incomes earned and interest expenditure to the total assets is calculated to Net-Interest Margin. The ability of a firm determined through Net Interest Margin to make investment decisions to generate interest income.

**Solvency:** The total assets over shareholder equity are calculated to solvency. The bank capitalization position is also exemplified from solvency; with more equity relative to liabilities, banks enjoy higher profitability. A bank intends to borrow less because of higher solvency ratio. This leads to decreasing fund cost.

*Macroeconomic Variable (Independent Variable):*

**Exchange Rate:** The annual exchange rate of US dollar against Pak rupees is used as a macroeconomic variable in this research work. Exchange rate data collected from Federal statistical Bureau of Pakistan (FSBP).

### 3.2. Empirical Model

The similar model is also applied by Pathan et al. (2007), Belkhir (2009) and Adams and Mehran (2012) to determine the relation amongst board size, composition, banks financial performance and structure of board.

Performance = $\alpha$ + $\beta 1 BS_{it-1}$ + $\beta 2 BC_{it-1}$ + $\beta 3 BZ_{it-1}$ + $\beta 4 NIM_{it-1}$ + $\beta 5 SO_{it-1}$ + $\beta 6 EX_{it-1}$ + $C\lambda t$ + $\xi \mu i$ + $\epsilon it$

While the performance is (ROA & ROE) profitability indicator of commercial banks, where scribe the bank, t define the years; constant term is a $\alpha$; Board structure variables BC and BS signify size and board composition; While the bank size (BZ), net interest margin (NIM) and Solvency (SO) represents the control variables. The Exchange rate represents a macroeconomic variable. The vector $\lambda$ is representing year dummies; $\mu$ is a vector of ignored bank control effects; and $\epsilon it$ white noise error term. The coefficients $\alpha$, $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$, and $\beta 6$ are the parameters to estimate. This model is used for individual countries mentioned commercial banks of Pakistan and mentioned commercial banks of China. Table 3 shows the dependent and independent variables used in this study.

**Table 3:** Variables used in the study

| Variables | Symbolization | Explanation |
|---|---|---|
| **Panel A: Bank performance** | | |
| Return on asset | ROA | Net profit to total assets |
| Return on equity | ROE | Net profit to total shareholder equity |
| **Panel B: Boar d structure** | | |
| Board Size | BS | Total number of directors in board structure |
| Board composition | BC | Non-executive to total   directors in board structure |
| **Panel C: Control** | | |
| Bank size | BZ | Log of banks total assets |
| Net interest margin | NIM | The margin between interest income and expense to total asset |
| Solvency | SO | Total shareholder equity to total assets |
| **Panel D: Macroeconomic** | | |
| Exchange rate | EX | Exchange rate US$ against PAK Rupees/ Chinese's RMB |

## 4. Discussion of Pakistani Banks Results

### 4.1. Descriptive Data of Variables

Firstly, Table 4 is shows the descriptive information of all variables covering the period of 2009 to 2018. Table 4 shows the descriptive statistics of performance variables (ROA, ROE). The average of our bank's sample is 0.0080 (median, 0.0094) and 0.0995 (median, 0.1344) individually. Performance variables mean and median values are different from one another uncover that the performance difference between our bank's sample is important. Table 4 is concerned about board variables that presented the descriptive information of board variables. The BS mean of Pakistani banks sample is 2.0811 (median, 2.0794), therefore, the natural logarithm is taking for the distribution of BS to normalize for regression models. So that this is lower when value is compared with that presented by Pathan et al. (2007) for Thai banks, Andres and Vallelado (2008) reported the six developed countries (Italy, France, USA, UK, Spain and Canada), Admas and Mehran (2012) and Pathan and Faff (2013) the Banks of USA, Tanna et al. (2011) the banks of UK. While the mean values of BC in Pakistani banks board is 0.5393 (median, 0.5000). Secondly, Table 4 presented the descriptive figures under the control variables of Banks. Average of BZ is 2.1439 (median, 2.1523) in millions of Pakistani rupees. So that the natural logarithm is taking of BZ distribution to normalized for the regression models. While the average of NIM 0.0142 (median, 0.0063) and SO 0.0841 (median, 0.0700) are respectively.

Finally, the descriptive information of banks macroeconomic variable is showed in Table 4. The average of ER is 4.5746 (median, 4.6177) in billions of Chinese's RMB. So that the natural logarithm is taking of ER distribution to normalize for the regression models.

**Table 4:** Descriptive Statistics

| Variables | ROA | ROE | BS | BC | BZ | NIM | SO | ER |
|---|---|---|---|---|---|---|---|---|
| Mean | 0.0080 | 0.0995 | 2.0811 | 0.5393 | 2.1439 | 0.0142 | 0.0841 | 4.5746 |
| Median | 0.0094 | 0.1344 | 2.0794 | 0.5000 | 2.1523 | 0.0063 | 0.0700 | 4.6177 |
| Maximum | 0.0992 | 5.9822 | 2.6391 | 1.0000 | 2.2493 | 0.1014 | 0.5023 | 4.7206 |
| Minimum | -0.0553 | -8.4300 | 1.3863 | 0.2222 | 1.9981 | -0.0745 | -0.0310 | 4.4044 |
| Std. Dev. | 0.0141 | 0.8448 | 0.2798 | 0.1627 | 0.0559 | 0.0333 | 0.0597 | 0.1007 |
| Skewness | -0.1232 | -3.2919 | -0.5309 | 0.7876 | -0.4792 | 0.2416 | 2.8147 | -0.4088 |
| Kurtosis | 16.0492 | 69.8933 | 3.2288 | 3.3735 | 2.6386 | 2.7862 | 16.5891 | 1.8091 |
| Jarque-Bera | 1348.5440 | 35768.0100 | 9.3407 | 20.7467 | 8.3059 | 2.2104 | 1712.8040 | 16.5209 |
| Probability | 0.0000 | 0.0000 | 0.0094 | 0.0000 | 0.0157 | 0.3311 | 0.0000 | 0.0003 |
| Sum | 1.5255 | 18.9137 | 395.4058 | 102.4666 | 407.3358 | 2.6915 | 15.9785 | 869.1714 |
| Sum Sq. Dev. | 0.0375 | 134.8814 | 14.7926 | 5.0026 | 0.5913 | 0.2092 | 0.6744 | 1.9170 |
| Observations | 190 | 190 | 190 | 190 | 190 | 190 | 190 | 190 |

### 4.2. Correlation Matrix among Variables

Table 5 is declared the results; it is showing strong correlated ROA and ROE dependent variables with each other and all variables. The bank performances of both measures are established correlated with BS positively and significantly. However, the coefficient of correlation among ROA and BC is found significant and positive; the correlation coefficient among ROE and BC is found statistically insignificantly and negatively.

The coefficient of correlation investigation shows that positive and significant statistical correlation among the bank performance measures through NIM and positively significant SO. BC is positive and significantly correlated with LN (BS). The BS, in fact, is positive and significant correlated with BZ may suggest that large bank has not large board. BC is positively and significantly associated with LN (BZ). The larger bank also inclines towards the large percentage of outside directors in board structure. While the coefficients correlation high between explanatory variables to raise the multicollinearity probl

**Table 5:** Correlation Matrix

| Variables | ROA | ROE | BS | BC | BZ | NIM | SO | ER |
|---|---|---|---|---|---|---|---|---|
| **ROA** | 1 | | | | | | | |
| **ROE** | 0.1868 | 1 | | | | | | |
| **BOARD SIZE** | 0.1361 | -0.0263 | 1 | | | | | |
| **BOARD COMPOSITION** | 0.0274 | -0.0486 | 0.2372 | 1 | | | | |
| **BANK SIZE** | 0.3988 | 0.1059 | 0.1100 | -0.0076 | 1 | | | |
| **NET INTEREST MARGIN** | 0.4678 | 0.1245 | 0.0812 | 0.0367 | 0.3087 | 1 | | |
| **SOLVENCY** | 0.1712 | -0.0068 | 0.0554 | 0.0921 | -0.4540 | 0.0604 | 1 | |
| **EXCHANGE RATE** | 0.1880 | 0.0545 | 0.0418 | 0.0938 | 0.3807 | -0.0881 | -0.2036 | 1 |

### 4.3. Results of Regression

In this portion, we presented the estimation Equation results in Table 6. The results show of ROA in the first column and ROE in second column as a performance indicator. The fixed effect and random effect methods among choosing to apply the Husman specification test. The presented in Table 6, the rejection of null hypothesis among individual and regressors effects. Therefore, the fixed effect estimator is desired to Eq. (1) and random effect is estimated.

As presented the Table 6 in the first column and second column, the board size estimated coefficient is non-significant with ROA and ROE, while the reliable with the finding of previous banks studies (Belkhir, 2009). As expected, the rejection of hypothesis among board size and productivity indicator of banks. The board size and bank's performance indicator is not positively associated. The position of resource dependence theory does not support these results.

The proportion of board composition in board structure, we concluded that the relationship is statistically substantial at the level of 10% among board composition and with ROA but with ROE is insignificant bank performance indicator; therefore that also correlates with a number of previous studies of banking sector and non-banking sector .Weisbach and Hermalin (1991), Black and Bhagat (2001) and Kaymak and Bektas (2008) whose

reports that the better performance is not contributed by board composition directors. So that with respect of this result the H2 hypothesis is rejected that the board composition directors is significant with ROA but non-significant with ROE bank performance indicator. The observed result of this study does not care resource dependency and agency theories.

Bank size (LN (BS)) has positively and significantly impact on ROA at 5% level and ROE at 1% level on financial output indicator of Pakistani banks. In context of our investigation, possibility of financial performance of Pakistani banks has affected by this prospect. The net interest margin on bank's financial performance has been positive and significant affected by ROA at the level of 1% but with ROE is significant at 10% level. This represents that banks asset is well managed and liability is positive effects on banks return. While the solvency is found that positively correlated at 1% level with financial performance of banks, but non-significant with ROE. So there is non-significant relation among solvency and financial performance of banks suggest that have not expanded the function about old method of lending in Pakistan. Therefore, the relationship of exchange rate with financial performance of banks is significant at 1% level with ROA found in our study, but with ROE is non-significant relationship found.

**Table 6:** Panel regression results: Random effect model

| Independent variables | | ROA | ROE |
|---|---|---|---|
| **CONSTANT** | | -0.2709 | -2.4715 |
| | | (-5.2779) | (-0.8203) |
| | | [0.0000] | [0.4131] |
| **BOARD SIZE** | | 0.0003 | -0.0838 |
| | | (0.0517) | (-0.3556) |
| | | [0.9588] | [0.7225] |

| | | |
|---|---|---|
| **BOARD COMPOSITION** | -0.0031*** | -0.2832 |
| | (-0.3950) | (-0.6954) |
| | [0.6933] | [0.4877] |
| **BANK SIZE** | 0.0682** | -0.6812* |
| | (2.2790) | (-3.0190) |
| | [0.0238] | [0.0029] |
| **NET INTEREST MARGIN** | 0.1970* | 3.4258*** |
| | (6.2038) | (1.7718) |
| | [0.0000] | [0.0781] |
| **SOLVENCY** | 0.0775* | 0.0942 |
| | (4.5994) | (0.0857) |
| | [0.0000] | [0.9318] |
| **EXCHANGE RATE** | 0.0272* | 0.6212 |
| | (2.9938) | (0.9501) |
| | [0.0031] | [0.3433] |
| **Sample size** | 190 | 190 |
| **Number of banks** | 19 | 19 |
| **F-Statistics** | 14.4657 | 0.9117 |
| | 0 | 0.4746 |
| **Within R-squared** | 0.3217 | 0.0242 |
| **Hausman test** | 6.9596 | 0.6948 |

Parentheses contain t-statistic and square bracket on P-value
* 1% level of significance, ** 5% level of significance and *** 10% significance level

## 5. Discussion of Chinese Banks Results

### 5.1. Descriptive Data of Variables

Firstly, the descriptive statistics of all variables presented results in Table 7 covering the period of 2009 to 2018. Table 7 shows the descriptive statistics of performance variables (ROA, ROE). The average of our bank's sample is 0.0103 (median, 0.0101) and 0.1653 (median, 0.1592) individually. The performance variables average and median values id different from one another uncover that the performance difference between our bank's samples is important. Table 7 is concerned for board variables that presented the descriptive statistics the structure of board. The mean BS of Chinese banks is 2.6450 (median, 2.7081), therefore, the natural logarithm is taking for the distribution of BS to normalize for regression models. So that this is lower when value is compared with that presented by Pathan et al. (2007) for Thai banks, Andres and Vallelado (2008) reported the six developed countries (Italy, France, USA, UK, Spain and Canada), Admas and Mehran (2012) and Pathan and Faff (2013) the banks of USA, Tanna et al. (2011) the banks of UK. While the mean values of BC in Chinese banks board is 0.7451(median, 0.6667). Secondly, Table 7 is presented the descriptive statistics of in panel A in table 1 banks control variables. The average of BZ is 1.9715 (median, 1.9167) in billions of Chinese's RMB. So that the natural logarithm is taking of BZ distribution to normalized for the regression models. While the average of NIM 0.0202 (median, 0.0209) and SO 0.0772 (median, 0.0646) are respectively.

Finally, panel D in Table 5 is presented descriptive statistics of banks macroeconomic variable. The average of ER is 1.9708 (median, 1.8790) in billions of Chinese's RMB. So that the natural logarithm is taking of ER distribution to normalized for the regression models.

**Table 7:** Descriptive Statistics

| Variables | ROA | ROE | BS | BC | BZ | NIM | SO | ER |
|---|---|---|---|---|---|---|---|---|
| **Mean** | 0.0103 | 0.1653 | 2.6450 | 0.7451 | 1.9715 | 0.0202 | 0.0772 | 1.8708 |
| **Median** | 0.0101 | 0.1592 | 2.7081 | 0.6667 | 1.9167 | 0.0209 | 0.0646 | 1.8790 |
| **Maximum** | 0.0638 | 1.5890 | 3.8286 | 3.0000 | 2.5129 | 0.0291 | 0.9457 | 1.9217 |
| **Minimum** | 0.0034 | 0.0078 | 1.6094 | 0.2000 | 1.8047 | -0.0038 | 0.0358 | 1.8156 |
| **Std. Dev.** | 0.0052 | 0.1331 | 0.4382 | 0.4694 | 0.1530 | 0.0050 | 0.0976 | 0.0383 |
| **Skewness** | 8.6145 | 9.4643 | -0.7329 | 3.2603 | 2.0352 | -1.9425 | 7.8853 | -0.1760 |
| **Kurtosis** | 90.4894 | 102.3034 | 3.5582 | 13.7696 | 7.0428 | 8.9282 | 65.3134 | 1.4805 |
| **Jarque-Bera** | 43069.2000 | 55355.4500 | 13.3248 | 858.5490 | 178.2720 | 272.1169 | 22379.9000 | 13.1768 |
| **Probability** | 0.0000 | 0.0000 | 0.0013 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0014 |
| **Sum** | 1.3389 | 21.4849 | 343.8529 | 96.8606 | 256.2984 | 2.6264 | 10.0358 | 243.2039 |
| **SumSq.Dev.** | 0.0034 | 2.2855 | 24.7676 | 28.4290 | 3.0189 | 0.0032 | 1.2297 | 0.1895 |
| **Observations** | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |

## 5.2. Correlation Matrix among Variables

Table 8 is presented the results; it is showing strong correlated ROA and ROE dependent variables with each other and all variables. The bank performance of both measures is established correlated with BS to be positive and significant. However, coefficient of correlation discovered to be negative but statistically significant among ROA and BC, the coefficient of correlation among ROE and BC is found statistically insignificant and negative. The correlation coefficient investigation shows that positive and significant statistical correlation among the bank performance measures through NIM and negatively significant SO. The significantly inverse correlated relationship between LN (BS) and BC is to be found. The significantly inverse correlated between BZ and BS is concluded that may suggest that larger bank have not larger board. The positively and significantly correlated between LN (BZ) and BC is found. The larger bank also inclines that may show have larger number of outside directors in board structure. While the coefficients correlation high between explanatory variables to raise the multicollinearity problem.

**Table 8:** Correlation Matrix

| Variables | ROA | ROE | BS | BC | BZ | NIM | SO | ER |
|---|---|---|---|---|---|---|---|---|
| **ROA** | 1 | | | | | | | |
| **ROE** | 0.9625 | 1 | | | | | | |
| **BOARD SIZE** | 0.0986 | 0.1174 | 1 | | | | | |
| **BOARD COMPOSITION** | -0.0548 | -0.0725 | -0.6375 | 1 | | | | |
| **BANK SIZE** | -0.2149 | -0.1700 | 0.2425 | -0.0731 | 1 | | | |
| **NET INTEREST MARGIN** | 0.1637 | 0.1061 | 0.0221 | -0.1081 | -0.0696 | 1 | | |
| **SOLVENCY** | -0.0649 | -0.1907 | 0.0273 | -0.0205 | 0.1757 | -0.0102 | 1 | |
| **EXCHANGE RATE** | -0.0205 | 0.0240 | -0.0122 | -0.0820 | 0.1055 | -0.1247 | 0.1491 | 1 |

## 5. 3. Results of Regression

In this portion, we presented the estimation Equation results in Table 9. The results confirmation of ROA in the first column and ROE in second column as a performance indicator. The fixed effect and casual effect methods choose to apply Husman specification test. The presented in Table 9, the rejection of null hypothesis among individual and regressors effects. Therefore, the fixed effect estimator is desired to estimation Equation and random effect is estimated.

As presented the Table 9 in the first column and second column, the board size estimated coefficient is non-significant with ROA and ROE, while the reliable with the

finding of previous banks studies (Belkhir, 2009; Adams & Mehran, 2012). As expected, positive correlation to accept the hypothesis among the board size and the performance indicator of banks. The size of board and bank performance indicator is positively associated. The position of resource dependence theory supports these results.

**Table 9:** Panel regression results: Random effect model

| Independent   variables | ROA | ROE |
|---|---|---|
| **CONSTANT** | 0.0043 | -0.3398 |
| | (0.1829) | (-0.5571) |
| | [0.8552] | [0.5784] |
| **BOARD SIZE** | 0.0028*** | 0.0653*** |
| | (1.8481) | (1.7746) |
| | [0.0670] | [0.0784] |
| **BOARD COMPOSITION** | 0.0012 | 0.0201 |
| | (0.8746) | (0.5909) |
| | [0.3835] | [0.5557] |
| **BANK SIZE** | -0.0081** | -0.159*** |
| | (-2.5010) | (-1.9550) |
| | [0.0137] | [0.0529] |
| **NET INTEREST MARGIN** | 0.1629*** | 2.8428 |
| | (1.7508) | (1.2019) |
| | [0.0825] | [0.2317] |
| **SOLVENCY** | -0.0018 | -0.2375*** |
| | (-0.3930) | (-1.9655) |
| | [0.6950] | [0.0516] |
| **EXCHANGE RATE** | 0.0056 | 0.3162 |
| | (0.4754) | (1.0255) |
| | [0.6353] | [0.3071] |
| **Sample size** | 130 | 130 |
| **Number of banks** | 13 | 13 |
| **F-Statistics** | 2.0760 | 2.1804 |
| | [0.0607] | [0.0493] |
| **Within R-squared** | 0.0920 | 0.0961 |
| **Hausman test** | 2.7248 | 2.8489 |

Parentheses  contain  t-statistic  and  square  bracket  on  P-value
  * 1% level of significance, ** 5% level of significance and *** 10% significance level

The percentage of outside (Non-managerial) directors in board structure, showed that the relationship is statistically insignificant among the board composition and bank performance indicator; therefore that also correlates with a number of previous studies of banking sector and non-banking sector of Weisbach and Hermalin (1991), Black and Bhagat (2001) and Kaymak and Bektas (2008) Whose reports that the better performance is not contributed by outside directors. So that with respect to this result the H2 hypothesis that outside directors are non-significant with

bank productivity indicator. The observed outcomes of present research do not support resource dependency and agency theories.

Bank size (LN (BS)) has negatively and significantly affected the financial performance of Chinese banks. In this context of results possibilities are that the financial output of Chinese's bank has inclined by prospect of our investigation.

The positively and significantly has been effects of net interest margin on financial performance by ROA but with

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ROE insignificant relationship. This represents that banks asset is well managed and liability is not positive effects on banks return. While the solvency is found that negatively correlated with financial performance, but negatively significant with ROE at 10%. So there is non-significant relation among solvency and financial performance of banks suggest that have not expanded the function about the old method of lending in China. Therefore, the relationship of exchange rate with financial performance of banks is non-significant found in our study.

# 6. Conclusions

This research paper analyzed the size of board and compositions directors are linked with the monetary performance of Pakistani and Chinese's recorded commercial banks. Our sample contains the panel statistics of listed commercial banks working in Pakistani and Chinese's banking sector covering the period of 2009 to 2018. Using a panel regression model, concluded that non-significant association is found among board size and financial output of Pakistani listed commercial banks. But substantial and positive association observed among board size and financial performance of Chinese's mentioned commercial banks.

This observed outcome approves, number of directors in board size may improve the financial performance of Chinese's mentioned commercial banks. Moreover, the nonexecutive directors are negatively but significantly allied with Pakistani logged the financial performance of commercial banks. While the non-executive directors are non-significantly correlated with financial performance of Chinese's logged commercial banks.

These empirical results showed us the appointment of non-executive directors on board of banking sector in China may lack knowledge about banks. This study examines empirical indication for structure of board matters in Pakistani and Chinese listed commercial banks. Future researchers can select a bigger sample proportion and more span of time. Variables structure of board such as members in board assortment (gender, nationality and age), board member ownership and the duality of CEO can be used to uncover relationships among structure of board and financial performance of firm. The firm financial performance can be stimulus the structure of board variables by investigating the Pakistani and Chinese's listed commercial banks.

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