The Implication of CEO Education, Macroeconomic Factors and Banking Performance in the Context of Pakistan and China

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Abstract- This research study's main objective is to find theimpact of CEO education, bank size and macroeconomic variables onthe profitability (ROA) of Pakistani and Chinese listed banks. The bank is the major source of debt financing for business and non-business enterprises. Therefore, the stability of the banking industry is essential forthe financial system. Economic theory uncovered the control of the large and established bank in the nativemarketplace. It operated in a different atmosphere at a higher lending rate, but larger institutions give low rates on deposit as they are thought safer. Therefore, larger banks may benefit fromelevatedyield, and experimental results also conclusive. The research paper identified that the bank sizeaffects Pakistani and Chinese banks' profitability by using longitudinal data from 2009 to 2018. We employed the Ordinary Least Square (OLS) technique with E-View statistical software to analyze the association betweenbanks and profitability of Pakistani and Chinese listed banks. The empirical analysis definesthe case of Pakistani and Chinese listed banks; the bank's sizehas significantly butnegatively associated with the bank'sprofitability. Findings revealed that the economy of scale is necessary for Pakistani and Chinese listed bank's profitability. The CEO education and macro-economic factors, GDP, inflation, and exchange rate have strong associations with Pakistani and Chinese listed banks' profitability and efficiency.

Keywords: Education, Bank size, Macroeconomic factors, Profitability, Listed banks

I. Introduction

 The monetarist sector plays an essential role in supporting the economy and finance movement from the depositors to lenders. The profitability should be improved, if the monetarystructure is efficient, the streaming of finance is increased depositor's end to lenders and provide superior quality services to his customers. The banking sector of any country also performsan imperative role in the monetary sector and economic rapidity utilizing converting savers into borrowers and investors.

Commercial banks' roles are significant in supporting financial markets and have extensive behavior for the betterment of thefinancial sector(Samad A. et al., 2006).A monetary segment of the economy's main role is to alleviate the flow of capital from a depositor to a lender. Boyd & Prescott (1986) suggest that the banking sector borrow funds from different individuals in the economic system and give to other individuals, collect debtors' data, set terms and conditions well-diversified, and assign loans. The extensive security issues are typically divisions of borrowers and lenders, which have distinct interest ratios from one to another. Commercial banks of Pakistani and Chinese manage and control the country's financial sector, which suggests that the failure of this areacould adversely affect the economic development of the state (Mohsin et al., 2020).

Adusei (2015) identified that one bank's failure has an extensive effect on the country's financial system and the whole economic system. It's essential to set the indicator for observing the weakness in the financial sector. Return on assets (ROA) and return on equity (ROE) are the critical signs of any financial institution.Athanasoglou et al. (2008) said that financial organizationshave the superior capacity and potential to facechallenges and increase their profit and growth.

The determining factorofa bank's financial performance can allocate in different sections. The bank-specific factor that's encouraged by policymaker and management decision and the macroeconomic factors that show the country's economic condition under which the banks are working. The bank-specific factor incorporated in current research work is the size of the bank, capital adequacy, CEO Education (EC) , quality of assets, and bank age. The macro-economic variables include GDP, inflation, and the Exchange rate of the country.

II. REVIEW OF THE PAKISTANI BANKING SECTOR

A bank accepts the business transaction forlending, deposits from the public, repayable on demand; withdraw through cheque, ATM, draft order and transfer. Banks are financial mediators in any economy. The financial intermediate's role is to sell its responsibilities at good features and received a lower price than paid at a high price. The bank received significant interest in selling its obligations and bore some interest in buying.

The first central financial institution startedon July 1, 1948, named as State Bank of Pakistan (SBP), indicates the Pakistani banking sector's beginning journey. While 1950 to 1960, the banking sector gain growth due to development projects. The banking sector is working under the Government of Pakistansince asfrom1974 as state-owned institutions.

State-owned banks' functioningdeclined because of employee protection from the government, productionof lower quality products, and inferior quality services. Furthermore, overseas investors and private financial organizations are discouraged.Due to the continuous inefficient functioning of nationalized banks, Pakistan's government decided to modify and denationalize the banking sector in 1990. Pakistani financial and banking sector evolved during the past few decades by transforming theconventional banking system into the Islamic banks.

Banks act as a financial mediator to govern the economy of any country with banks. The previous statement is true in Pakistan's context, where the banks play a vital role between savers and borrowers, which's very important to stabilize the financial sector. At the same time, the determinants of profitability are essential for a stable economy. Same as other developing economies, the industry of Pakistani Banking has also promoted macroeconomic stability. Mergersand expansions are taking place, and banks' structure and the banking institutions' size are changing. The banking sector has become competitive when we have compared with the past.

Bank Size of Pakistni Banks
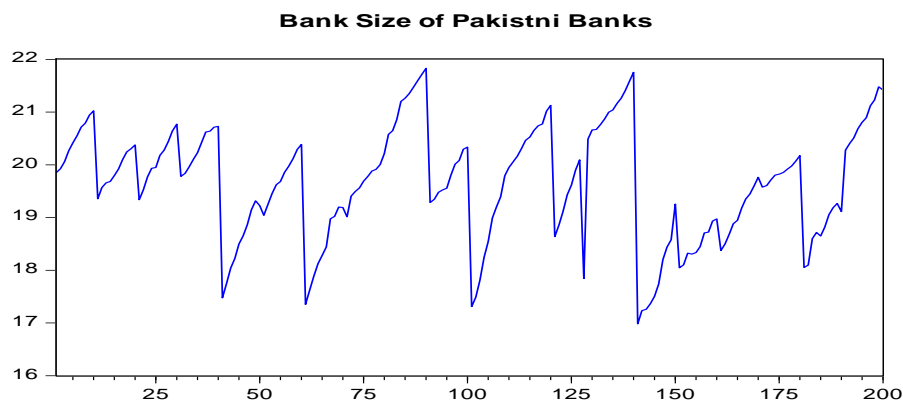
According to the Mid-Year Performance Review,Pakistan's state bankhas released the Pakistani banking sector's performance on 21st October 2019. The banking sector sustained its growth during the first half of 2019 due to an increase in deposits. On the liabilities side, deposit growth enhanced to 6.8 percent from

January to June in 2019, from 5.7 percent compared tothe same period of last year. On the assets side, private sector advances observed a slowdown, while the public sector advances declined because of lower utilization of financing and cut off of the energy sector. Resultantly, the bank's borrowings decreased by 12.7%, and advances to deposit ratio 53.2 in June 2019 compared to 55.8 in December 2018. Overall, the risk profile of the banking sector remained satisfactory and Capital Adequacy Ratio at 16.1%. The benchmark of local and international is 11.9% to 10.5%, respectively.

Table.1 Listed Banks size in Pakistan and China

	Bank size (Total Asset)	
Year	Pakistan (In thousand PKR)	China (In thousand RMB)
2009	5,682,531,018.00	594,319,689.00
2010	6,387,276,900.00	794,863,022.00
2011	7,449,649,906.00	605,720,484.00
2012	8,908,970,306.00	1,038,321,076.00
2013	9,682,144,321.00	823,953,594.00
2014	11,128,494,549.00	1,117,707,606.00
2015	12,983,979,183.00	1,557,913,890.00
2016	13,875,381,631.00	1,350,870,447.00
2017	17,147,218,715.00	1,589,266,873.00
2018	18,834,531,077.00	1,232,719,196.00

Chinese's banking sector

The financial system of China is relying on financial institutions like banks. The banking sector enhances the economic growth of a nation over the past few decades.Forthe last 30 years, the Banking segment of chinamainlyserved as channels for government endowments and funds, but banks started working on commercial bases from the past fewdecades. China's banking sector has been uncertain about productivity because of high loan losses that arethe amount set for provisions. On the other side, government influence many heavily restriction in the process of lending. Risk management practicesare underdeveloped, while the experience in risk management is a little bit, bad debts have increased because of a large percentage of the loans prolonged over the years. Moreover, the profitability, solvency, and capitalization of banks are below the   international   financial   sector   standards.
The Chinese government had started an inclusive reform in banks with the leading objective banking sector transforming in different markets and profitable industry in 1997. The main reform has only restructuring of the big four commercial banks, which is under the State-Owned. These banks have long facilitated to State-Owned Enterprises provide lending and business transaction. China's government has taken actions to register the financial system parallel to the restructuring of State-Owned Commercial Banks (SOCB).

Developments havebrought great challenges for China's banking sector because the environment has rapidly transformed in which they operated; furthermore,productivity and profitability indicators had consequently impacted banks.

In 1978 the initiation of economic policy had announced by the government of China; the financial system of China has been operating by Moan bank. The establishment of monetary and exchange policies were responsible People's Bank of China, including deposit, foreign reserve management, financing of development projects, and loaningactivities for profit-making (Herrero, Gavila, & Santa Barbara, 2006). At present, China's financial sector has contained two controlling bodies and a breather of economicstructure.

The monetary policy of country-made and supervised by China's central bankand responsible for performing other tasks. Now, the Chinese central bank's dutiesareto makea draft and fiscal policy for the Chinese nation; also supervise the Chinese loan flea market,bond, gold market, and foreign exchange;furthermore, give guidance to implement the policies against money-launders. The people's bank of China also announcesa rate of interest for browsers and savers, reserves, and further factors that influence the bank's CEO Education (EC) .

State Council established in 2003 that the Chinese government's primary agency is the China Banks-Regulatory Commission (CBRC). This agency playsa role as a bridge between the Chinese government and commercial banks. Supervision of commercial bank's operations is under the China Banking-Regulatory Commission (CBRC). It is also liable to articulate the banking sector's laws and regulatory policies and conductits operations withinthe country and outside the country. The objective is that gives protection to creditors and maintains market self-reliance through sensible and better supervision.

The Chinese bankingindustry isthe of the economy. The Chinese banking industry incorporates three policies about banks, four SOCB, twelve Shared Stock units, City Banks, urban and rural credit companies. The nationalizedmoney-making Banks and Joint Stock Banks are the main two groups, which are captured above 70 % of the banking industry's total assets.

SOCB consists of four financial bodies, The Agricultural Bank of China, The Bank of China,China Construction Bank, Industrial and Commercial Bank of China (ICBC). The Commercial Banks publicly Owned also havea wide branch network with above than 42000 branches and above than seven lackpersonnel(Herrero et al., 2006).

Bank Size of Chinese Banking Sector
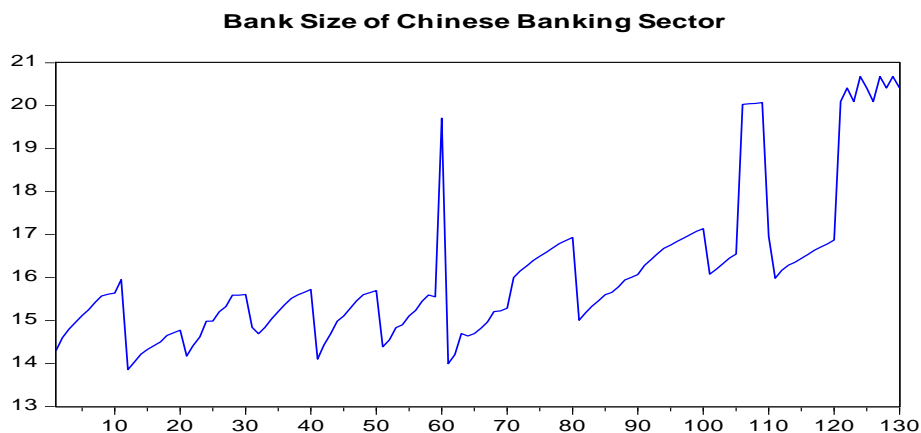
Statement of the problem

Since the world monetarydeadlock and confrontation emerged from2007/08, the bank's size has intensified debatable. Large numbers of organizations have become much large in total assets. Additionally, the literature about banks' productivity and profits showed that banks' size impacted Sistani and Chinese listed banks' profitability study w. This isearlier research work—the number of findings related to profitability determinants of business-related banks. Onuonga (2014) uncovers that the profit and productivity of banks areaffected by intervening factors. Ongore and Kusa (2013) identified factors affecting the financial performance of banks. Kigand (2014) uncovers that the bank's profitabilityand efficiencyareaffected by macro-economic variableliterature clears the research gap by discovering the effect of size on Pakistani and Chinese listed banks' profit andproductivity.
This research report develops the following research questions:

➤ Is CEO educationimpact the profitability of Pakistani and Chinese listed banks?
➤ Are bank specific and macro-economic factors impact the profitability of Pakistani and Chinese listed banks?

Study objectives/ purpose of the study

This research aims to identify the effect of Pakistani and Chinese listed bank's size on profitability. Hence the threshold objective is to:

i. Identify the impact of specific bankfactors onthe profitability of Pakistani and Chinese listed banks.
ii. Identify the impact of macroeconomic indicators on the profitability of Pakistani and Chinese listed banks.

Significance of the Study

Suppose thefinancial bodies and banks profit because of the stable financial system(Morttinen et al., 2005; Borio, 2003). The financial industryand banks accumulate and assign investments, weathers import/export or risk variation.Hence in this way,economic growth is encouraging in-country (Levine, 1997). However, conclude the mention research questions should be imperative factors that determine useful commercial banks, so they increase bank profitability.
Current researchsupports themainresearch by offering new observed proofthat bank size impacts Pakistani and Chinese listed banks' profit. Additionally, this sort of research has not been performed in the Pakistani and the Chinese banking industry.

III. LITERATURE REVIEW

The subject matterwhichobtainedmuch attention in the latest years is the banking sector and profitability. There issignificantwriting materialonbanks' profitability, which has played a magnificent role in enhancingthe bank's profitability as amanagement resource. It is usually categorically stated that if the management quality is better, it acts as a primary factor influencing the profitability of the bank, as demonstrated by many studies that have engrossed the financialstructure of the United States(Young & Rice, 2004; Stiroh & Rumble, 2006; Williams& Bhuyan, 2006; Hirtle & Stroh, 2007).The developed and western-nations banking systems (Ho & Tripe, 2002; Williams, 2003; Pasiouras & Kosmidou, 2007; Kosmidou et al., 2007; Kosmidou & Zopounidis, 2008; Albertazzi & Gambacorta, 2009).

In contrast, some research work has observed the bank's efficiency and profit in developing countries. Trofimov et al. (2018) uncover the profitabilitycontributing factor in the Malaysian banking sector. The sample size is seventeen commercial banks covering the period 1986-1995. The profitability contributing factorissplit up into two sets; the first is inside determinants (CEO Education (EC) , expenses management, and capital adequacy). The second one is outside determinants (ownership, financialsituations,and size of business). The conclusion uncovers expenses management hassubstantialeffectson the bank's profit. But a macroeconomic indicator, a higher interest ratio has decreasedbanks' productivity, and price-rise has a significant constructive impact on banks' profitability.This study confirms that board size coefficient value positive for ROA and negative for ROE but insignificant behavior for the Pakistani banking sector. In the Chinese banking sector, board size's coefficient value positively for ROA and ROE at 10% level. The board composition coefficient shows a negative significance with ROA but insignificantly related to ROE for the Pakistani banking sector. However, in the Chinese banking sector, board composition's coefficient values insignificant for both ROA and ROE (Majeed, Jun, Zia-ur-Rehman, Mohsin, & Rafiq, 2020).

Naceur & Goaied (2005)identifybanks and financial institutions' characteristics, structure, and macro-economic situations impact theTunisian bank's profitability for the period 1980-2000. They uncover that if the bank holdsa large amount of investmentand many overhead expenditures,it enhances the profit and net-interestsurplus. In contrast,the bank's profitability is negatively associated with bank size. Furthermore, it has identified theencouragingconnectionbetweengain and the development ofthe stock market. The empirical findings uncover that the SOCB is less profitable as compared to private banks. The resultreveals that macro-economic situations have a non-significant association with the bank's profitability of Tunisian.

IV. THEORETICAL REVIEW

The stewardship, agency, and inverted U-curve theories clarify the association between bank size and profit. Agency theories uncover that constant conflict between the interests of managers and shareholders. The personal gains are skewed towards the actions and decisions of managers. The manager gains more power and earns higher salaries by increasing the banksize. In the context of this theory, the bank profitabilitywould be negatively affected by banksize. The stewardship approach identified that managers are reliable and do not mismanage the firm's reserve(Davis et al., 1997). The theory of stewardship suggests that managers are better agents of a firm's assets.

The upturned U-curve theory identified that when bank size increases,profitability rises first; therefore, banks become extremely large, leading to profitability beginning to fall. This is finding in saving of cost, which indications more profits. However, the large bank will get the advantage of economic conduction. The opposite opinion is that if the bank size becomes large, the fall of profits will start due to bureaucratic causes, finding a non-linear association between the bank's measure bank andthe bank'sproductivity.

The effect of Bank size on the profitability of banks

In the banking sector, the bank size is to determine the economies and diseconomies of scale. Bank size calculatesthe Natural logof aggregate assets. Pervan et al. (2015) investigate the significant positiverelationshipbetweenbank sizeand bank profitability; 2002 to 2010 in Croatia.

Arellano & Bond (1991) uncover that the bank size is calculated through a log of overall assets by applying the GMM technique. The finding suggests that the bank's size leads to advantages of exploiting cost, those identified that would increase the contribution and improved management efficiency, which leads to increased profitability. The accordance with previous research work uncovers the significant associationbetweenbank size and bank's profit(Adusei, 2015;Flamini et al., 2009; Kosmidou, 2008). The mentioned results were changedfrom Naceur & Goaied (2005) 's conclusion to identify the effect of monetary composition, macro-economic factors, and bank specified variables on the Tunisian bank's profitability, covering the span 1980-2000. The study determined that the bank's size had a negative association with the bank's profitability.Cok &Kosak(2008) the negative association of diseconomies of scales that relationship with substantial banks,particularly after enhanced expansion periods.

Heffernan & Fu (2008) investigate the Chinese bank's profitability by using GMM covering 1999-2006 and uncover that bank size had a non-substantialeffect on oonbankbank's 'snk'sn the fin.The above conclusion is associatedwith the finding of (Goddard2004; Athanasoglou, 2008; Mohsin, 2020).

Eichengreen & Gibson (2001) suggest that if bank size is growing, it's a positive impact on profitability and realized that if more increases, the bank size would negatively impact the bank's profitability. For main banks, growth seemsto improve above average, where it could be efficient with shareholders' interest (Bertay & Huizinga. 2013).

In the existence of an extensive scale of economies, bank size has a constructive relationship with bank profitability(Akhavein et al., 1997). They suggest that probability hasa negativerelationshipbetweena bank's sizeand profitability (Sufian & Habibullah, 2009; Cok& Kosak, 2008).

Goddard et al. (2004) suggest a non-substantialassociationbetweenthe bank and bank size's profitability. However, the literature review context identified bank size's effect on a bank'sprofitability as not decisive. This study built the relationship between bank size and profitability of Pakistani and Chinese listed banks.

V. METHODOLOGY

They identified how the bank's profitabilityis enhanced by banksize showed in this section. Factors to be used in research workdefine the data sources and perform diagnostic tests on data.

Sample Selection

In this research work, annual data of 20 Pakistani listed banks and 13 listed Chinese banks are used. Pakistani listed banks are registered on Pakistan Stock Exchange, andChinese listed banks are registered on the Shanghai stock exchange.

Table.2 Pakistani's listed Banks

Sr#	Banks Name	Sr#	Banks Name
	Allied Bank Limited		JS Bank Limited
	Askari Bank Limited		Muslim Commercial Bank Limited
	Bank Al-Habib Limited		Meezan Bank Ltd.
	Bank Al-Falah Limited		National Bank of Pakistan
	The Bank of Khyber		SAMBA Bank Ltd.
	The Bank of Punjab		Silk Bank Ltd.
	Bank Islami Pakistan Ltd.		Soneri Bank Limited
	Faysal Bank Limited		Standard Chartered Bank(Pakistan) Limited
	Habib Bank Limited		Summit Bank Limited
	Habib Metropolitan Bank Limited		United Bank Limited

Table.3 Chinese's listed Banks

Sr#	Banks Name	Sr#	Banks Name
	Shanghai Pudong Development Bank		The Agricultural Bank of China Ltd.
	Huaxia Bank Co, Limited		Bank of Communication Co, Limited
	China Minsheng Bank Corp, Ltd.		Industrial and Commercial Bank of China
	China Merchants Bank Co, Limited		China Construction Bank Ltd.
	Industrial Bank Co, Limited		Bank of China Ltd.
	China CITIC Bank Corp, Limited		Bank of Beijing Limited
	China Everbright Bank Co, Ltd.		

Sources of Data

Annual statistics of bank-specifiedfactors excreted from Pakistani and Chinese listed banks' yearly statements within the period 2009 to 2018. Macro-economic variables are collected from (WED) world economic development site.

Explanation of variables

Dependent Variables

Return on assets (ROA): The bank's profitabilityis measure by return-on-asset in this study. Return on investment computed as:

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

Bank Specific characteristics

Bank Size (BS): The computed bank size is taking the natural log of total assets.BS can also calculate as natural log total payment of buyers. However, someresearch papers explained as total assets natural log to define the bank size(Sufian & Habibullah, 2009; Adusei, 2015; Bertay & Huizinga, 2013).

Tentative results of bank size on bank's profitabilityare mixed. Therefore, we identified an association betweenbanksize and the bank'sprofitability.

Asset Quality (AQ): It's calculated as the Non-functioning loans over total mortgages or loans. It defines a loan portfolio of a bank (Samad A. et al., 2006). We investigate a definite relationship between asset value anda bank's profitability.

Capital Adequacy (CA): It's calculated overall shareholder equity overthe bank'saggregate assets. The capital adequacy shows the financial leverage of the bank. Higher capital adequacy implies high risk and gives protection from defaulting-risk. Molyneux& Thomton (1993) suggest that capital cost reduces due to the high amount of equity that encouragesits profitability. Many kinds of research findings explained the positive associationbetween extraordinary capital and profit(Berger, 1995; Sufian& Habibullah, 2009; Pervan et al., 2015). We found that capital adequacy has a positive impact on the bank'sprofitability.

CEO Education (EC):CEO Education (EC) used as dummy variabl (Curak et al.,2012). However, we expected that higherCEO Education (EC)would influence the profitability of banks.

Age of bank (AG): Bank age is the entirenumeral years from operation 2018. This will be used to compute the age of the bank. We expect a negative association betweenbank age bankprofitability.

Macroeconomic Variables

Gross domestic product (GDP):GDPis calculated as the country's economic condition's general position.Various studies found dissimilar findings of macroeconomic variables. Many studies identified counter relationships among the bank's GDP growth and protein & Floros, 2012).Simultaneously,many researchersidentify straight association(Pervan et al., 2015; Sufian & Habibullah, 2009; Salamat et al., 2020). However, we have anticipated that GDP optimistically impacts on bank's profitability.

Inflation (INF): Inflation shows the stability macro-economic and is calculated through the consumer price index. The annual inflation rate is defined in the fisher's equation. Fishers' equation suggests that inflation rates built on marketplaceprospects in upcoming years, those nominalinterest rates are conversant, increasing the difference between interest income and expense (Marinkovic & Radovic, 2014; Naseem et al., 2020). Higher price risesare decreasing the capability to pay back loans, therefore negatively affecting bank profitability. However, we expected that inflation harms the profitability of banks.

Exchange Rate: The local currency of the country valued against US$ is used in this study.

Table.4 Indicator Variables and it's expected sign

Variable	Calculation	Expected sign	Source
Return on Assets (ROA)	Net profit after tax over total assets	Profitability indicator	LB(FS)
Bank-specific Factors/Indicators			
CEO Education (EC)	Dummy variable	(+)	LB (FS)
Bank size (BS)	Ln of total assets	(-)	LB(FS)
Capital Adequacy(CA)	Total equity over total assets	(+)	LB(FS)
Age of bank (AG)	Bank operation start to till 2018	(-)	LB(FS)
Asset Quality(AQ)	Non-performing loans over total loans	(+)	LB(FS)
Macro-economic Factors/Indicators			
Gross Domestic Product Rate (GDP)	Annual GDP	(+)	WED
Inflation (INF)	Growth in a consumer price index	(-)	WED
Exchange Rate (EX)	Local currency against US$	(-)	WED

In this study effect of bank size on profitability was investigated. We also used some other self-determiningvariables that impacton bank's profitability, such asCEO Education (EC) , capital adequacy, quality of the asset, age of bank and macro-economic variables. We employed three theories in this study, stewardship, agency and inverted U-curve approach. The approach of stewardship identified that size of a bank will positively affect theprofitability of banks. The theory of agency suggests that the size of a bank will negativelyaffectthe profit of banks. Therefore, the inverted U-curve forecast thatbanks' profitability will grow firstly asthe size of the bank enhance and then start to fall when the size of the bank becomes tremendously large.

Establishing the associationbetween the bank and bank profitability will help policymaker's express policies to improvethe listed bank's profitability. The modular equationused to estimate is:

$ROA_{it} = \beta_0 + \beta_1 lnBS_{it} + \beta_2 lnCA_{it} + \beta_3 lnAQ_{it} + \beta_4 lnEC_{it} + \beta_5 lnAG_{it} + \beta_6 lnGDP_{it} + \beta_6 lnINF_{it} + \beta_7 lnEX_{it} + \epsilon it$----------------------- (1)

Where BS is the bank size, CEO Education (EC), capital adequacy (CA), asset quality (AQ), gross domestic product(GDP), inflation(INF), an exchange rate (EX) and age of bank (AG), EC is CEO education in years, theresearchersuse the panel-data of Pakistani and Chinese listed banks span period 2009 to 2018.

Empirical results and discussion of Pakistani listed banks
Explanatory statistics
Table 5 illustrates the factual statistics of Pakistani listed banks. Average and standard deviation for return on asset is within the estimated series from2009 to 2018. The average ROA is 0.0133 (median, 0.0097). Additionally, there is an extensive range among minimum and maximum of the return on asset. ROA series from minimum -5.53% to maximum 12.06 % with a median of 0.97% and an average of 1.13 % identified that all observations show above the mean. The positive average of ROA indicates that the Pakistani listed banks are profitable. This finding confirms by Ongore and Kusa (2013) who uncover that return on asset positive effect in their study of Kenyan banks' financial execution determinants.
Secondly, table 5 describes the descriptive of all independent variables that are mean and median values are different from one another identity. Table 5 is concerned about bank-specific variables in the table1 that presented the descriptive information. The BS means of Pakistani listed banks sample is 19.6460 (median, 19.7783) in thousand Pakistani Rupees. Therefore, the natural logarithm is taking for the distribution of BS to normalize for regression models. The average of CA 0.0832 (median 0.0700), LI mean 0.4400 (median 0.4059), AG average 2.8819 (median 2.9444) and AQ mean 0.2150 (median 0.0230) are respectively.
Finally, the summary of the descriptive statistics of the bank's macroeconomic variable showed in Table 5. The average of GDP 3.7910 (median, 3.9450), INF 7.9480 (median, 7.4400), and EX average 97.4712 (median, 101.2597) are respectively.

Table 5: Summary of Descriptive Statistics

Variables	ROA	BS	CA	AG	AQ	GDP	INF	EX
Mean	0.0113	19.6460	0.0832	2.8819	0.2150	3.7910	7.9480	97.4712
Median	0.0097	19.7783	0.0700	2.9444	0.0230	3.9450	7.4400	101.2597
Maximum	0.1206	21.8305	0.5023	4.3438	2.7566	5.7900	13.8800	112.2377
Minimum	-0.0553	16.9824	-0.0310	0.0000	-0.0537	0.3600	2.5300	81.8135
Std. Dev.	0.0211	1.0727	0.0584	0.8894	0.4598	1.4356	3.9728	9.6032
Skewness	1.9429	-0.2994	2.9114	-0.2315	3.3463	-1.0134	0.2387	-0.3079
Kurtosis	12.1263	2.5280	17.4660	2.7130	14.7670	3.8830	1.6257	1.8099

Jarque-Bera	819.9086	4.8450	2026.4220	2.4728	1527.1040	40.7282	17.6387	14.9624
Probability	0.0000	0.0887	0.0000	0.2904	0.0000	0.0000	0.0001	0.0006
Sum	2.2600	3929.1970	16.6485	576.3707	43.0019	758.2000	1589.6000	19494.2400
Sum Sq. Dev.	0.0883	228.9763	0.6776	157.4028	42.0641	410.1098	3140.7830	18351.9200
Observations	200	200	200	200	200	200	200	200

Analysis of correlation

Correlation analysis shows in table 6. According to Kennedy (2008), if the coefficient of correlation is above 0.70, sothe problem of multicollinearity exists. However, the positive association among bank's profitability (ROA) and bank size(BS), capital adequacy (CA), CEO Education (EC), age of bank (AG), asset quality (AQ), GDP growth & exchange rate (EX). But the inflation rate is adversely correlated with ROA. So if the bank size increases, the bank's profitability begins to rise. The funding cost is low; when banks have well-capitalized and capitalization rises, banks' profitability rises receptively. Therefore,as banks become more prominentand more established, thebank's profitability begins to rise. That means the confirmation of the learning effect. Inflation (INF) has a negative association with the profitability of banks and return on assets. It means inflation negatively impactsthe bank's profitability.

Table 6: Correlation Matrix

Variables	ROA	BZ	CA	EC	AG	AQ	GDP	INF	EX
ROA	1								
BANK SIZE	0.1913	1							
CAPITAL ADQUACY	0.0611	-0.4275	1						
CEO EDUCATION (EC)	0.2904	-0.1251	0.4289	1					
AGE	0.3206	0.7527	-0.2015	-0.0228	1				
ASSET QUALITY	0.0909	0.0486	-0.1481	0.0249	0.0762	1			
GDP GROWTH RATE	0.2089	0.3663	-0.1914	-0.0342	0.2208	-0.2114	1		
INFLATION RATE	-0.1836	-0.3705	0.2084	0.0206	-0.2237	0.1248	-0.7695	1	
EXCHANGE RATE	0.1629	0.3881	-0.2035	-0.0167	0.2321	-0.1704	0.8631	-0.9140	1

Regression analysis Results

In this portion, we presented the estimation Equation results column first in Table 9. The results show ROA in the first column as a profitability indicator. The random effect and fixed effect methods among choosing to apply the Husman specification test. The presented in table 9 accepted the expected sings among individual and regressors effects. Therefore, the fixed effect estimator is desired for Eq. (2), and the random effect is estimated.

As presented first in Table 9, the bank size estimated coefficient is negatively significant with ROA at a 1% significance level. As accepted the expected signamongbanksizeand profitability indicator of banks. The size and profitability indicator is associated with each other.

We concluded that the relationship is statistically non-significant among capital adequacy with the ROA bank profitability indicator. So that concerning this result the expected sign is rejected that capital adequacy is a non-significant profitability indicator. The observed effect of this study has care resource dependency and agency theories.

CEO Education (EC) has a positive and significant impact on ROA at a 1% level of significance, the profitability indicator of Pakistani banks. In the context of our investigation, the possibility that the profitability of Pakistani listed banks has affected by this prospect. The bank's age (AG) has been positive and significantly affected by return on an asset ata 1% level of significance. Simultaneously, the asset quality (AQ) identifies positively with ROA at a5% significance level. This represents that banks asset is well managed and liability is positive effects on banks return. So there is a positive and significant association between GDP and bank profitability at a1% level of significance. The association between inflation and profitability of banks is negative, but significantly at a 1% level to be found in the study. Therefore, the exchange rate relationship with the bank'sprofitability is negatively but considerably at a 1% level with ROA found in our research.

Empirical results and discussion of Chinese's listed bank
Statistical Description
Table 7 describes thestatistical descriptionof the Chinese listed banks.Average and standard deviation for return on asset is within the estimated series from2009 to 2018. The average ROA is 0.1653 (median, 0.1592). Additionally, there is an extensive range among minimum and maximum of the return on asset. ROA series froma minimum of 0.78 % to a maximum of 158.90 % with a median of 16.53 % and an average of 15.92 % identified that capital adequacy is below the mean other. All observations fell above the mean. The positive average of ROA indicates that the Chinese listed banks are profitable. This finding confirms by Ongore and Kusa (2013) who uncover that return on asset positive effect in their study of Kenyan banks' economic performance determinants.

Secondly, table 7 describes thedescriptive statistics of independent factors that are mean and median values are different from one another identity. Table 1 shows the bank-specific variable that's descriptive information presented in table 7. The BS means of Chinese's listed bank's sample is 16.0780 (median, 15.6011) in thousand Chinese RMB. Therefore, the natural logarithm is taking for the distribution of BS to normalize for regression models. The average of CA 0.0772 (median 0.0646), LI mean 0.4961 (median 0.5008), AG average 41.8886 (median 26.5000) and AQ mean 0.2942 (median 0.2933) are respectively.

Finally, the summary of the descriptive statistics of banks' macroeconomic variables is showed in Table 7. The average of GDP 7.9530 (median, 7.5350), INF 2.2260 (median, 2.0350), and EX average 6.4982 (median, 6.5479) are respectively.

Table 7: Summary of Descriptive Statistics

Variables	ROA	BZ	CA	AG	AQ	GDP	INF	EX
Mean	0.1653	16.0780	0.0772	41.8846	0.2942	7.9530	2.2260	6.4982
Median	0.1592	15.6011	0.0646	26.5000	0.2933	7.5350	2.0350	6.5479
Maximum	1.5890	20.6783	0.9457	111.0000	0.6342	10.6400	5.5500	6.8325
Minimum	0.0078	13.8550	0.0358	14.0000	0.1047	6.6000	-0.7300	6.1450
Std. Dev.	0.1331	1.7135	0.0976	30.3549	0.1152	1.3523	1.4957	0.2482
Skewness	9.4643	1.4948	7.8853	1.2388	0.6559	0.7823	0.3356	-0.1502
Kurtosis	102.3034	4.4963	65.3134	3.0476	3.5597	2.1844	4.0558	1.4723
Jarque-Bera	55355.4500	60.5397	22379.9000	33.2622	11.0173	16.8648	8.4789	13.1306
Probability	0.0000	0.0000	0.0000	0.0000	0.0041	0.0002	0.0144	0.0014
Observations	130	130	130	130	130	130	130	130

Correlation analysis

Correlation analysis shows in table 8. According to Kennedy (2008), if the coefficient of correlation is above 0.70, multicollinearity problems exist. However, thepositive association betweena bank's profitability(ROA) and bank size(BS), asset quality (AQ), GDP growth & exchange rate (EX). Therefore thenegative association among capital adequacy (CA), age (AG), and inflation rate (INF). So, if bank size increases, the bank's profit begins to rise. The funding cost is low; when banks have well-capitalized and capitalization rises, banks' profitability rises receptively. Therefore as banks become established, the profitability begins to rise. That means the confirmation of the learning effect.

Capital adequacy (CA), age (AG), and inflation (INF) have a negative correlationwitha bank'sprofitability and return on asset. It's mean these variables negativelyimpact on bank'sprofitability.

Table 8: Correlation Matrix

Variables	ROA	BZ	CA	EC	AG	AQ	GDP	INF	EX
ROA	1								
BANK SIZE	0.1788	1							
CAPITAL ADQUACY	-0.1907	-0.0100	1						
CEO EDUCATION (EC)	0.0153	-0.1506	0.0123	1					
AGE	-0.1425	0.1183	-0.0381	0.2654	1				
ASSET QUALITY	0.0771	0.0888	-0.1268	-0.3067	-0.1357	1			
GDP GROWTH RATE	0.2102	-0.2398	0.1166	0.2039	-0.0856	-0.0154	1		
INFLATION RATE	-0.0757	-0.0483	-0.1066	-0.0625	-0.0088	0.0557	0.2865	1	
EXCHANGE RATE	0.0258	-0.0224	0.1166	0.2378	-0.0066	-0.0771	0.3001	-0.2797	1

Regression analysis Results

In this portion, we presented the estimation Equation results in Table 9. The results show ROA in the second column as a profitability indicator. The random effect and fixed effect methods among choosing to apply the Husman specification test. The presented in table 9 accepted the expected sings among individual and regressors effects. Therefore, the fixed effect estimator is the desired equation and the random effect is estimated.

As presented first in Table 9 in column second, the bank size estimated coefficient is negative and significant, with ROA significant at the level of 1%. As accepted the expected symbol between size and profitability pointer of banks. The bank sizeand the bank'sprofitability indicator are associated with each other.

We concluded that the relationship is negatively statistically significant among capital adequacy with the ROA bank profitability indicator. Thus, the expected sign is accepted that capital adequacy is significantly correlated with profitability indicators. The observed result of this study has notcare about resource dependency and agency theories.

CEO Education (EC) (LI) has a negative and non-significantly impact on ROA Chinese banks. In this context of our investigation, the possibility is that Chinese listed banks' profitability has not been affected by this prospect. The age (AG) of the bank has been negative and non-significant affected by ROA. At the same time, the asset quality (AQ) is positively correlated with ROA at a 5% significance level. This represents that banks asset is well managed and liability is positive effects on banks return. So, there is a constructive andsubstantialassociationbetweenbanks' GDP and profitability at a 1% level of significance. The associationbetween inflation and profitis positive and significant at the level of 10% found in the study. Therefore, the exchange rate relationship with banks' profitability is negative but significant at a 1% level with ROA found in our research.

Independent variables	Pakistani listed banks	Chinese's listed banks
	ROA	ROA
CONSTANT	0.1301	0.6506
	(2.2054)	(10.2476)
	[0.0286]	[0.0000]
BANK SIZE	-0.0050***	-0.0119*
	(-1.5787)	(-5.4508)
	[0.1161]	[0.0000]
CAPITAL ADQUACY	0.0039	-0.2598*
	(0.1575)	(-8.7237)
	[0.875]	[0.0000]
CEO EDUCATION (EC)	0.0134*	-0.089
	4.5880	(-1.6573)
	[0.0000]	[0.1004]
AGE	0.0107*	-0.0002
	(3.0723)	(-1.2787)
	[0.0024]	0.2038
ASSET QUALITY	0.0042**	0.0647**
	(2.0818)	(2.1295)
	[0.0387]	[0.0355]
GDP GROWTH RATE	0.0047*	0.0101*
	(4.4640)	(4.5998)
	[0.0000]	[0.0000]
INFLATION RATE	-0.0012*	0.004***
	(-2.6615)	(1.7502)
	[0.0084]	[0.0829]
EXCHANGE RATE	-0.0007*	-0.0527*
	(-2.7977)	(-6.5113)
	[0.0057]	[0.0000]
Sample size	200	130
Number of banks	20	13
F-Statistics	15.0117*	32.5669*
	[0.0000]	[0.0000]
Within R-squared	0.3860	0.7069
Hausman test	6.0747	10.9784

	[0.2990]	[0.0268]

Parentheses contain t-statistic and square bracket on P-value

* 1% level of significance, ** 5% level of significance and *** 10% significance level

VII. CONCLUSIONS/INTERPRETATIONS

Present research work identifies the bank size and itsimpacton Pakistani and Chinese listed banks' profitability. The bank sizeaffectsthe profit and productivity of the bank. This phenomenonwas examined by implying a structure that incorporated the bank-specified variables and macro-economic factors. We used annual longitudinal data in this study of Pakistani and Chinese banks covering the period 2009 to 2018.

Empirical finding uncovers that bank sizeinfluences the profitability of Pakistani as well as Chinese listed banks. Bank size has a negative but significantly influencesthe profitability of banks. GDP has a positive and substantialimpact on the profitability of Pakistani and Chinese listed banks. The inflation affectsbanks' productivity negatively to Pakistani listed banks;on the other hand, the inflation impact on bank's profitabilityis positively and significantly of Chinese listed banks. The implication is that listed banks in Pakistan and China projected inflation, and the rates ofessential services regulate consequently. The exchange rate has negatively but statistically significantly affectedthe bank's profit and efficiency of Pakistani and Chinese listed banks.

The general context of results inthe present study has identified that bank size, CEO Education (EC) , bank age,and asset qualities affect Pakistani-listed banks' profitability. Therefore, banksize, capital adequacy, and asset qualities impact the profitability of Chinese listed banks. However, we have found that GDP positive, but inflated prices and exchange rates negatively and statistically significantly impact Pakistani-listed banks' profit. While the GDP and inflation are positive, the exchange rate negatively and substantially influences theChinese listed bank's profitability.

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