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FINANCIAL REFORMS AND NET INTEREST MARGINS IN BANKING IN PAKISTAN:
A PANEL DATA ANALYSIS

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ABSTRACT
In the last decade banking sector emerged as a leading industry in Pakistan and received the significant attention of domestic and foreign investors and Pakistan received huge foreign direct investment (FDI) in the banking sector, several reforms had been introduced in the last few decades. The paper investigated the impact of financial on the net interest margin of Pakistani banks' by using Bank Specific & Macro Specific data over the period 2001-2005, to evaluate the effectiveness of these reforms. It is suggested by the results that financial reforms and financial liberalization are having a positive impact on banking spread in Pakistan's case.

Whereas banking regulation and supervision is having a significant and negative impact. Among Bank Specific Variables Bank size, bank equity & bank concentration is found to have a negative and significant impact on net profit margins. GDP as a macro-specific variable is having a significant and negative impact whereas inflation is affecting the net interest margin (NIM) Positively. This paper suggests that financial reforms and liberalization had failed to reduce the spread yet which can be attributed to high monopoly power, high reserve requirements, high central bank discount rate, and high inflation.

INTRODUCTION:

The financial sector can play a very crucial role in the economic development of a country by stimulating growth and fostering sustainable economic growth. It is intuited that financial reforms increase the efficiency and often result in the convergence of intermediation margins towards those observed in developed countries (Tennant and Folaweow, 2009) by relaxing the entry barriers and strict regulations (Demirguc-Kunt et. al., 2004), (Maudos and De Guevara, 2004) suggested that along with the higher degree of competition, the fall of interest rate risk, credit risk, and cost of operation is also an evident reason behind this convergence. McKinnon (1973) and Shaw's (1973) observed that the financial repression policies adversely affect the efficiency and performance of financial institutions, King and Levine (1993); Levine (1997) and Khan and Sendadji (2000) Study show that the direction of financial liberalization and economic growth are same.

In the last few decades, the banking sector emerged as a leading sector all over the world. During the period of 1970s and 1980s several financial liberalization policies had been adopted in Latin America for enhancing productivity, competition, and efficiency (Hermes et al, 2010) and several other sub-Saharan African countries (Chirwa & Mlachila, 2004), which includes reducing the cost structure, privatization of banks, exchange and payment reforms, liberalizing bank branching policy, debt management reforms, strengthening the Central Bank, etc. Several steps like Privatization of National Commercial Banks, corporate governance, capital strengthening, E-banking, credit rating, reduction of corporate taxation, and human resource development had been taken by the government and State Bank of Pakistan (SBP) to restructure the financial sector.

The first reform in Pakistan was introduced in 1991 when the ban regarding private ownership of banks was lifted later in 1994 an environment of competition was created through the privatization of the two large banks, Allied Bank Limited (ABL) and Muslim Commercial Bank (MCB). This environment was further enhanced in 1995 by easing branch policy and by removing the controls on new bank branches. The second set of reforms was introduced from 1997 to 2000 in which the state-owned bank came under the supervision of the state bank of Pakistan instead of the banking council of Pakistan (Akmal and Saleem, 2008) used the data envelopment technique to find out the efficiency of 30 banks which includes public, private (local) and foreign banks and found that the efficiency of the banks has improved after the year 2000. Whereas, (Hardy and Patty, 2005) found that there was a rise in overall deposit rates and neither there was any strong convergence in all aspects of efficiency after the introduction of several financial reforms. They further came up with the conclusion that reforms allowed banks to expand their underlying revenue performance, and especially the private banks seemed to expand their revenue base.

Figure1: Interest rate and Banking Spread
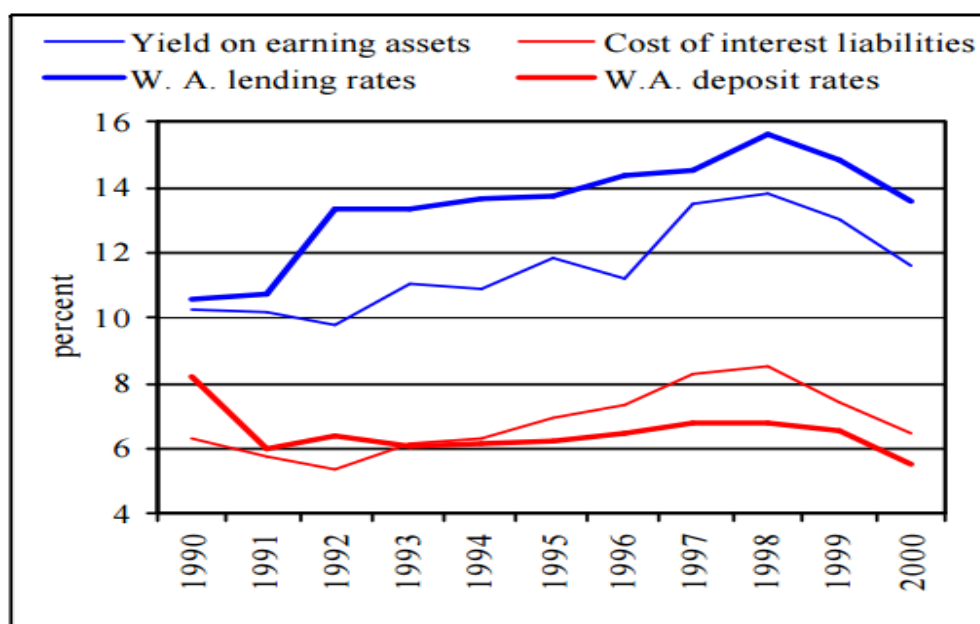
Source: SBP research bulletin

Rehman et. al., (2011) used the data between the periods 1973 to 2008 to find the impact of financial reforms on economic growth. They found a significant positive relationship between the economic growth with a deposit, lending, and saving while inflation and interest rate harm growth. They found a significant impact of financial reforms on the banking sector as well as on overall economic growth.

But few studies held in the last decades suggested several contradictory results; it was evident in few developing countries that even after the implementation of several financial reforms interest rates remained high and failed to converge towards the international standards (Barajas et. al, 1999 and Randall, 1998) even after the adoption of several financial liberalization policies compared to those of developed countries. These studies showing the failure of interest spread to converge towards the developed countries' level suggest that financial liberalization cannot be expected to lead to a significant improvement in the efficiency of the financial system unless bank behavior changes. Hence, it was concluded by several researchers that if case financial reform doesn't improve the financial structure in which banks function, then bank's interest margins will remain high-level. This study will analyze the effect on the level of competitiveness and efficiency and effectiveness of these reforms in Pakistan's scenario.

The current study, consequently, considers the banks and macro-specific determinants of net interest margins (NIM) in the case of Pakistani banks. The result of this study highlights that strong banking regulation and supervision narrow net interest margins, whereas, financial reforms and liberalization had failed to have any negative effect on the interest rate spread of banks.

The Data

This study examines the microdata of 66 Pakistanis' banks over the period 2001-2005. The data for bank-specific variables, such as net interest margins, bank capital, bank concentration, bank credit risk, bank size, ownership of foreign and government banks, and bank age has been attained from the Bank-scope database maintained by Fitch/IBCA/Bureau Van Dijk. Similarly, the data of macroeconomics variables, real per capita GDP growth and GDP deflator has been collected from the database of World Development Indicators (WDI), while data of financial reforms variables have been obtained from the Detragiache, Abiad, and Tressel (2008) data set.[1]

Bank Specific Variables

Net Interest Margins (NIM): Net interest margins (NIM), the dependent variable, measured by the difference between the amounts of interest income received from assets and interest income paid on liabilities.

Bank Capital (EAR): Bank capital is a proxy of equity to total assets ratio which indicates the bank's creditworthiness and potential to compensate any type of losses. The high ratio of equity to asset means a bank is well-capitalized and has a lower level of insolvency costs and the ability to cover any expected risk, thus lowering the additional cost of capital (Berger et al., 1995).

Bank Credit Risk (LAR): It's the ratio of total loans to total assets. The relationship between net interest margins and credit risk is supposed to be positive (Demetriades, and Fielding, 2012; Andrianova et al, 2011 and 2010; Maudos and Fernandez De Guvera, 2004).

Bank Size (BS): The natural logarithm of total assets has been taken as a proxy for bank size instead of total loans (Maudos and De Guevra, 2004, Shehzad et al, 2010). Demirguc-Kunt and Huizinga (1999); and D'Auriaet al, (1999) used this proxy for bank size. The expected sign between banks' size and net interest margins is negative because bigger banks tend to charge lower net interest margins.

Bank Age (AGE): The time since when the bank got established is taken as a proxy for bank age. This variable has recently been used by Demetriades and Fielding (2012) and Andrianova, Baltagi, and Demetriades (2011), and suggested that old banks have high-level bank interest margins.

Government and Foreign Banks' share: The study used the banking share of foreign banks and govt. banks. The expected relationship between NIM and foreign & government banks could be positive and negative respectively (Claessens et al., 2001).

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[1] The availability of the complete financial data is the main limitation of this investigation, only for five years are available.

Market Variable

Bank Concentration (CONS): The bank concentration analysis the degree of competition in the banking sector of Pakistan and it can be estimated three largest banks' assets are divided by the total asset of all Pakistani banks.[2]

Macroeconomics Variables

GDP deflator and real per capita GDP growth are two main control variables of the macroeconomic environment in which the banking system operates. The positive association between NIM and GDP deflator, High net interest margins are associated with a high rate of GDP deflator, especially with the growing economy (Honohan, 2000).

Financial Reforms and Financial Liberalisation

The financial reforms variable data are obtained from Abiad et al, (2008) database which is categorized into seven different aspects. The first six dimensions contribute towards the measurement of financial liberalization, which includes interest rate controls, Privatization, liberalization of Capital accounts, high reserve requirement and Credit allocation controls, Entry barriers, and market policies related to securities, whereas the seventh dimension is banking prudential regulation and supervision measures the strength of bank supervision and reforms and capital regulation. The first six dimensions' strength is assessed on a four-point scale from fully repressed (0) to fully liberalized (3), where 0,1,2 and 3 indicate fully repressed, partially liberalized, largely liberalized, and fully liberalized respectively. The vividness of the seventh dimension of financial reforms is also caught by the four-point scale zero to 3 and is associated with unregulated and unsupervised, less regulated and less supervised, highly regulated and highly supervised (Abiad, Detragiache and Tressel, 2008 & 2010).

The Theoretical Framework and Empirical Methodology

The relationships of, financial reforms, financial liberalization, banking supervision, and regulation with net interest margins have been explored by using a dynamic two-step system of Generalized Method of Moments (GMM),[3] recommended by Blundell and Bond (1998) and Windmeijer (2005). The GMM technique corrects the potential problem of inconsistency from the empirical model (Arellano and Bond, 1991 and Blundell and Bond, 1998)12. An Autoregressive (AR) test of order one and order two had been conducted along with Sargan Test. The Sargan test is used for the validity of over-identifying restriction in the model and the AR (1) and AR (2) are used for zero or no correlation. In this study, the following model has been used to analyze the relationship between the bank-specific variables, macroeconomic variables, and net interest margins. The regression shows that net interest

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[2] Author use the same rule for bank concentration that is the assets of three largest banks as a share of all banks' assets in an economic system.

[3] The two-step GMM is asymptotically more efficient and suitable than the one-step, and it also reports any possibility of correlation between error term with any explanatory variables of the model (See Baltagi, 2001)

margins are the function of bank-specific, reforms and macroeconomic variables.

$$NIM_{i,t} = \alpha_o + \alpha_1 NIM_{i,t-1} + \beta_1 FIN_t + \beta_2 X_{i,t} + \beta_3 Y_{i,t} + + \mu_i + \upsilon_t + \varepsilon_{i,t} \text{------------}(1)$$

Where, ($NIM_{i,t}$) net interest margins are the dependent variable of the bank *"i"* during the time *"t"* and the lagged value of a dependent variable is represented by $NIM_{i,t-1}$. $Y_{i,t}$ is the vector of the bank-specific variable *"i"* during the time *"t"* (includes bank credit risk, bank size, bank age, bank concentration, and bank capital) which influences bank interest margins. FIN_t explains financial reforms during the time *"t"*. Similarly, macroeconomic determinants (i.e. GDP per capita and deflator) are being indicated by X_t during the time *"t"*. While "μ_i" depict all the unobserved individual's specific effects, "υ_t" time-specific effects and "$\xi_{i,t}$" is the error term.

$$NIM_{i,t} \; \alpha_o + \alpha_1 NIM_{i,t-1} + \beta_1 FIN_t + \beta_2 X_{i,t} + \beta_3 Y_{i,t} + \beta_4 FS + \mu_i + \upsilon_t + \varepsilon_{i,t} \text{--------}(2)$$

In model 2, variable 'FIN_t' represents the financial liberalization index as an explanatory variable and analyses its impact on net interest margins. Moreover, in equation (2) we introduce foreign banks' shares.

$$NIM_{i,t} = \alpha_o + \alpha_1 NIM_{i,t-1} + \beta_1 FIN_t + \beta_2 X_{i,t} + \beta_3 Y_{i,t} + \beta_5 GS + \mu_i + \upsilon_t + \varepsilon_{i,t} \text{------} (3)$$

Similarly, in model 3, 'FIN_t' represents the banking regulations and supervision index and analyzed its effect on net interest margins. Further, a variable representing Government's share in the banking sector has also been added as an explanatory variable.

RESULTS & DISCUSSION

Table -1 shows the mean, minimum and maximum characteristics of all variables under consideration. This table provides the detailed statistics of net interest rate margins and all its determinants used in this analysis. The mean value of net interest rate margin is 6.4%, while the mean value of bank credit risk is around 44%. Moreover, the average bank age in Pakistan is 19 years.

Table-1: Summary statistics

Variable	Obs.	Mean	Std. Dev	Min.	Max.
Net Interest Margin (%)	225	6.43	40.48	-25.02	472.87
Bank Size (%)	228	5.46	2.06	0.00	9.37
Bank Equity (%)	230	14.13	14.44	-2.14	97.16
Bank Credit Risk (%)	214	43.54	19.93	0.18	88.12
Financial Reforms	594	11.11	0.57	10.00	12.00
Foreign banks (%)	594	18.43	29.80	0.00	100.00
Govt. Banks (%)	532	7.98	22.86	0.00	100.00
Bank Age	441	19.20	23.81	0.00	142.00
Bank concentration (%)	594	66	11.1	45.00	82.00
GDP per capita Growth (%)	590	4.08	2.15	1.01	7.67
GDP Deflator (%)	590	8.99	6.26	2.46	24.89

Source: Bank scope dataset

variables	1	2	3	4	5	6	7	8	9	10	11
NIM	1.00										
SIZE	-0.064 (-0.337)	1.000									
CAPITAL	0.153* (-0.021)	-0.658* (0.000)	1.0000								
CREDIT RISK	-0.229* (0.000)	0.261* (0.000)	-0.361* (0.000)	1.000							
REFORMS	0.069 (0.300)	0.152* (0.021)	0.084 (0.199)	0.009 (0.889)	1.000						
FS	-0.061 (0.356)	0.265* (0.000)	-0.091 (0.165)	0.226* (0.000)	0.000 (1.000)	1.000					
GS	-0.024 (0.727)	0.506* (0.000)	-0.264 (0.000)	0.023 (0.737)	0.000 (0.997)	-0.104 (0.016)	1.000				
AGE	0.035 (0.612)	0.668* (0.000)	-0.223 (0.001)	0.090 (0.203)	0.041 (0.389)	0.280* (0.000)	0.299* (0.000)	1.000			
CONC	-0.0882 (0.1874)	-0.1977* (0.0027)	-0.0863 (0.1924)	0.0442 (0.5206)	-0.5429* (0.000)	0.0000 (1.0000)	-0.001 (0.9819)	-0.0409 (0.3915)	1.000		
GDP GROWTH	0.094 (0.158)	0.183* (0.005)	0.075 (0.252)	-0.028 (0.679)	0.768* (0.000)	-0.004 (0.905)	-0.002 (0.961)	0.045 (0.343)	-0.869* (0.000)	1.000	
DEFLATOR	-0.048 (0.471)	-0.109 (0.099)	-0.053 (0.423)	0.125 (0.066)	-0.053 (0.192)	0.003 (0.939)	0.001 (0.972)	-0.016 (0.737)	0.318* (0.000)	-0.112* (0.006)	1.000

Table-2: Pair-wise correlation Matrix of all variable

Table-2 highlights the pair-wise correlation between all variables. Moreover, size, credit risk, concentration, shares of foreign and govt. banks are negatively correlated with net interest margins, while bank equity, reforms, age, and GDP per capita have a positive correlation with NIM. The pair-wise correlation of NIM with reforms 0.0694 suggests that till now financial reforms in Pakistan have failed to have any negative effect on interest rate spread. The estimated results of the model are presented in all columns of Tables 3 to 5.

Table-3: financial reforms, financial liberalization and banking regulation supervision and net interest margin (2001 to 2005)

Variables	I	II	III
NIM_{t-1}	0.6715*** (0.000)	0.6729*** (0.000)	0.6702*** (0.000)
FR	0.2771*** (0.007)		
FL		0.5733* (0.102)	
BRS			-0.3069** (0.088)
CAPITAL	-0.1444*** (0.004)	-0.1641*** (0.003)	-0.1494*** (0.000)
CREDIT RISK	0. 3281** (0.049)	0.0293* (0.071)	0.0528*** (0.000)
SIZE	1.3641** (0.062)	1.1752 (0.123)	0.7174*** (0.001)
CONC	-3.7888*** (0.001)	-2.7175** (0.030)	-5.1545** (0.010)
AGE	0.1693 (0.263)	0.0276 (0.159)	0.0103 (0.487)
GDP GRWOTH	-0.1574** (0.021)	-0.1422** (0.042)	-0.2196** (0.037)
DEFLATOR	.0322** (0.021)	0.0280** (0.047)	.01486 (0.390)
Sargan Test (p-value)	19.097 (0.999)	18.3923 (0.999)	21.2835 (0.999)
AR(1) Test (p-value)	-1.8942* (0.058)	-2.0976** (0.035)	-1.8923* (0.058)
AR(2) Test (p-value)	0.9812 (0.326)	1.2439 (0.213)	.97473 (0.329)

Note: ***, **, and * represent coefficients that are statistically significant 1 percent, 5 percent, and 10 percent level respectively.

The above table analyzes the impact of financial reforms, financial liberalization, and bank supervision and regulation on the net profit of a bank. The analysis is done without considering foreign share and government share.

Financial reforms have a significant positive impact on the net profit of the bank, while model 2 of table-3 depicts an insignificant impact of financial liberalization on NIM (Chirwa & Mlachila, 2004). On the other hand, bank regulation and supervision have a negative impact on net profit at the significance level of 10%. The result shows that the bank credit risk (ratio of net loans and total assets) has a positive and significant impact on the net profit of the bank as greater disbursement of loans to borrowers would help banks to make greater profits.[4] while, Equity shows a negative sign which is according to the theory and it is significant at a 5% level, showing that if the bank has more equity and less liability there is more possibility for the bank to flourish and enjoy the greater profit. The period (Age) of a financial institute also has a significant and positive impact on the net profit of the bank means that as long as the bank stays in a market it builds its goodwill in the market. The greater time spent in the market by an institute, the higher its goodwill will be which increases the number of the customer so as the net profit of the bank (Iftikhar, 2015).

Table - 4 analyzes the impact of financial reforms, financial liberalization, bank regulation, and bank supervision, has in the presence of foreign shares, on the net profit of the banks. The result shows that the foreign share has an insignificant impact on the net profit of the bank. In the presence of foreign shares, the financial reforms have a significant and positive impact on the net profit margins. In the third equation, there is an insignificant impact of foreign share on the net profit of the bank. But in the entire three models, the foreign share had been found insignificant. Bank equity is significantly and negatively impacting the net profit of the bank. Bank credit risk is positively impacting in the presence of foreign share and bank regulation and supervision while it is impacting negatively in the presence of financial liberalization and significant at 5 % level. The size of the bank has a positive and significant impact on the net profit of the bank in the presence of foreign shares. But in the presence of foreign shares with financial reforms and financial liberalization the age of the bank has no significant impact on the net profit of the bank and in the presence of bank regulation and supervision has a significant and negative relationship with the net profit of the bank. GDP has an insignificant impact on the net profit while it has a negative and significant impact on net profit when there is financial liberalization and bank regulation and supervision.

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[4] (See Demirguc-Kunt and Huizinga (1999); Claessens et al (2001); and Maudos et al (2004))

Table-4: financial reforms, financial liberalization and banking regulation supervision and net interest margin in the presence of foreign share (2001-2005)

Variables	I	II	III
NIM$_{t-1}$	0.6679*** (0.000)	0.6721*** (0.000)	0.6660*** (0.000)
FR	0.3958* (0.015)		
FL		0.6499* (0.098)	
BRS			-0.6010** (0.039)
FS	0.0176 (0.305)	0.0044 (0.770)	0.0204 (0.175)
CAPITAL	-0.0985 (0.112)	-0.1909*** (0.001)	-0.0292** (0.025)
CREDIT RISK	0.0519*** (0.000)	0.0386** (0.027)	0.0166** (0.033)
SIZE	1.7891** (0.012)	1.1106 (0.190)	1.1265*** (0.000)
CONC	-6.0349** (0.013)	-4.4763** (0.032)	-2.2430 (0.268)
AGE	.0365 (0.187)	0.0400* (0.073)	0.0684** (0.031)
GDP GROWTH	-0.3214** (0.019)	-0.2807 (0.042)	-0.2479*** (0.001)
DEFLATOR	0.04559*** (0.001)	0.0206 (0.153)	0.0312** (0.013)
Sargan Test (p-value)	17.946 (0.999)	18.067 (1.000)	20.624 (1.000)
AR(1) Test (p-value)	-1.894* (0.058)	-2.105** (0.035)	-1.986** (0.047)
AR(2) Test (p-value)	0.981 (0.326)	1.174 (0.240)	1.108 (0.267)

Note: ***, **, and * represent coefficients that are statistically significant 1 percent, 5 percent, and 10 percent levels respectively.

In table 5, we analyzed the impact of financial reforms, financial liberalization, and banking regulation and supervision in the presence of government share. The result shows that the government share has a significant impact on the net profit of the bank. In the presence of government share the financial reforms has a significant and positive impact on the net profit margins. Financial liberalization also impacts positively and significantly at the 10% level. Bank equity and bank concentration have a negative and significant impact on the net profit of the bank which is the same as in the presence of foreign shares. On the other hand, bank size has a

positive and significant impact on the net profit of the bank. Age of the bank has found positive relation with NIM and also significant at 10% level. Age and inflation have no significant impact on the bank's profit while GDP has a negative and significant impact on the net profit of the bank.

Table-5: financial reforms, financial liberalization and banking regulation supervision and net interest margin in the presence of government share (2001-2005)

Variables	I	II	III
NIM_{t-1}	**0.6706***** **(0.000)**	**0.6685***** **(0.000)**	**0.6719***** **(0.000)**
FR	**0.7608***** **(0.001)**		
FL		**0.7654*** **(0.069)**	
BRS			**-0.5427*** **(0.076)**
GS	**0.0452 **** **(0.045)**	0.0200 (0.389)	-0.00251 (0.900)
CAPITAL	**-0.1705 **** **(0.027)**	**-0.1357**** **(0.029)**	-0.0589 (0.162)
CREDIT RISK	0.0167 (0.450)	0.0136 (0.517)	0.0130 (0.194)
SIZE	**2.2276 ***** **(0.002)**	**1.9351**** **(0.028)**	**1.2106***** **(0.000)**
CONC	**-6.3224 **** **(0.021)**	-2.0140 (0.343)	-2.0478 (0.196)
AGE	0.0380 (0.637)	0.3857 (0.484)	0.0557 (0.142)
GDP GROWTH	**-0.2800 **** **(0.018)**	-0.1223 (0.253)	**-0.2085**** **(0.011)**
DEFLATOR	0.0142 (0.380)	0.0109 (0.536)	**0.0298***** **(0.005)**
Sargan Test (p-value)	17.1923 (1.000)	15.3498 (1.000)	20.4645 (1.000)
AR(1) Test (p-value)	**-1.713*** **(0.086)**	**-1.7841*** **(0.074)**	**-1.8505 *** **(0.0642)**
AR(2) Test (p-value)	1.0287 (0.303)	1.1324 (0.257)	1.1293 (0.2588)

Note: ***, **, and * represent coefficients that are statistically significant 1 percent, 5 percent, and 10 percent level respectively.

In all three equations, it had been found that financial reforms and financial liberalization are positively impacting the net profit margin whereas, bank regulation and supervision have a negative effect. As far as the bank-specific variables are concerned, bank equity and bank concentration have been found

to affect the NIM negatively and significantly except in the presence of foreign share bank equity have an insignificant effect on NIM.

CONCLUSION:
Financial reforms in Pakistan are advanced and efforts to build an effective regulatory system continue. The objective of the study aims to analyze the impact of financial reform, bank-specific and macroeconomic variables on net interest margins by using bank-level data of Pakistani's banks during the period 2001–2005.

Thus, these findings suggest that effective banking regulation and supervision policies have played an important role in reducing net interest margins, which shows the competitiveness of the banking system in Pakistan. Additionally, the empirical finding of this study also reveals that bank credit risk and bank age have a positive and significant impact on bank interest margins. The high ratio of credit risk indicates that banks charge high-interest margins to avoid any future risk.

The empirical results provided evidence that financial liberalization and financial reforms had failed to have any negative effect on NIM. The reason behind this upward trend in spread rates is the upward movement of financial costs, provision of doubtful debts (Brock and Suarez, 2000), financial taxation (Saunders and Schumacher, 2000), the bank discount rate (Randall, 1998), and high and variable inflation (Demirguc-Kunt and Huizinga,1999; Brock and Suarez, 2000)

To sum up, this paper describes that to promote efficiency and innovation in the financial system, effective banking regulation and supervision are necessary. The policy implications include that deregulation of interest rate controls, removal of entry barriers, low financial taxation, and strengthening of the regulatory and supervisory environment margins could reduce bank interest margins by increasing competition, efficiency, and stability of the banking system in Pakistan.

REFERENCES
Abiad, A., Detragiache, E. And Tressel, T., (2008). *A New Database of Financial Reforms.* IMF Working Paper WP/08/266.
Abiad, A., Detragiache, E. And Tressel, T., (2010). *A New Database of Financial Reforms*. IMF Staff Papers, 57(2), 281-302.
Akmal and Saleem, (2008). Technical efficiency of the Banking Sector in Pakistan. SBP Research Bulletin Volume 4.
Andrianova, S., Baltagi, B.H., Demetriades, P.O. and Fielding, D., (2010). *The African Credit Trap.* University Of Leicester, UK, Working Paper No. 10/18, 1-31.
Andrianova, S.,Demetriades, P.O. andShortland, A.,(2010). *Is Government Ownership of Banks Really Harmful To Growth?* University of Leicester, Discussion Paper in Economics with No. 09/11.
Andrianova, S., Baltagi, B.H., Demetriades, P.O. and Fielding, D., (2011). *Why Do African BanksLend So Little?* University of Leicester Working Paper 11/19.

Andrianova, S., Baltagi, B.H. and Demetriades, P.O., (2011). *Loan Defaults in Africa.* University of Leicester Working Paper # 11/36, 1-22.

Arellano, M. and Bond, S., (1991). *Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations.* The Review of Economic Studies, 58(2), 277-297.

Baltagi, B.H., (2001). *"Econometric Analysis of Panel Data".* 2nd Edition. John Wiley and Sons, Chichester.

Barajas, A., Steiner, R. and Salazar, N., (1999). *Interest Spreads in Banking in Colombia, 1974-96.* IMF Staff Paper No. 46, 196-224.

Berger, A.N., Herring, R.J. and Szegö, G.P., (1995). *The Role of Capital in Financial Institutions.* Journal of Banking and Finance, 19(3–4), 393-430.

Blundell, R. and Bond, S., (1998). *Initial Conditions and Moment Restrictions in Dynamic Panel Data Models.* Journal of Econometrics, 87(1), 115-143.

Brock, P.L. and Suarez, R.L., (2000). *Understanding The Behaviour Of Bank Spreads in Latin America.* Journal of Development Economics, 63(1), 113-134.

Chirwa, E. W. and Mlachila, M. (2004). *Financial reforms and Interest Rate Spreads in the Commercial Banking System in Malawi.* IMF Staff Papers, 51(1), 96--122.

Claessens, S., Demirgüç-Kunt, A. and Huizinga, H., (2001). *How Does Foreign Entry Affect Domestic Banking Markets?* Journal of Banking and Finance, 25(5),891-911.

D'auria, C., Foglia, A. andReedtz, P.M., (1999). *Bank Interest Rates and Credit Relationships in Italy.* Journal of Banking and Finance, 23(7), 1067-1093.

Demetriades, P.O. and Fielding, D., (2012). *Information, Institutions and Banking Sector Development in West Africa.* Economic Inquiry, 50(3), 739-753.

Demirguc-Kunt, A. and Huizinga, H. (1999) *Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence.* World Bank Policy Research Working Papers, WPS1900

Demirgüç-Kunt, A., Laeven, L. and Levine, R., (2004). *Regulations, Market Structure, Institutions, and the Cost of Financial Intermediation.* Journal of Money, Credit and Banking, 36(3 Ii), 593-622.

Hardy and Patti (2001). *"Bank Reform and bank efficiency in Pakistan".* IMF Working Paper WP/01/138.

Hermes, N. And Nhung, V.T.H., (2010). *The Impact of Financial Liberalization on Bank, Efficiency: Evidence from Latin America and Asia.* Applied Economics, 42(26), 3351-3365.

Honohan, P., (2000). *How Interest Rates Changed Under Financial Liberalisation: A Cross-Country Review.* World Bank Policy Research Working Paper No. 2313.

Iftikhar, S. F., (2015). *Financial Reforms and Financial Fragility: A Panel Data Analysis*, International Journal of Financial Studies, 3, 84-101.

King, R. and Levine, R., (1993). *Finance And Growth: Schumpeter Might Be Right.* The Quarterly Journal of Economics, 108(3), 717-737.

Khan, M. andSenhadji, A.S., (2000*). Financial Development and Economic Growth: An Overview.* IMF Working Paper 00/209.

Levine, R., (1997). *Financial Development and Economic Growth: Views and Agenda*. Journal of Economic Literature, 35(2), 688-726.

Maudos, J. and Fernández De Guevara, J., (2004). *Factors Explaining the Interest Margin in the Banking Sectors of the European Union.* Journal of Banking and Finance, 28(9), 2259-2281.

Mckinnon, R.I., (1973). "*Money and Capital in Economic Development".* Brooking Institution, Dc.

Randall, R. (1998), "Interest Rate spreads in Eastern Caribbean" IMF working paper 98/59 (Washington International Monetary Fund).

Rehman, Fatima and Ahmed (2011). An Empirical Analysis of Financial Reforms in   Pakistan: Does it Affect Economic Growth? International Journal of Trade, Economics and   Finance, Vol. 2, No. 4.

Saunders, A., Schumacher, L. and Schiff, J.M., (2000). *The Determinants of Bank Interest Rate Margins: An International Study.* Journal of International Money and Finance, 19(6), 813-832.

Shaw, E.S., (1973). *"Financial Deepening in Economic Development*". Oxford University Press, 1-260.

Shehzad, C. T., De Haan, J. and Scholtens, B., (2010). *The Impact of Bank Ownership Concentration on Impaired Loans and Capital Adequacy*. Journal of Banking and Finance, 34(2), 399-408.

Tennant, D. and Folawewo, A., (2009). *Macroeconomic And Market Determinants of Interest Rate Spreads in Low and Middle Income Countries.* Applied Financial Economics,19(6), 489-507.

Tressel, T. and Detragiache, E., (2008). *Do Financial Sector Reforms Lead To Financial Development? Evidence from A New Dataset*. IMF Working Papers   WP/08/265.Available   at   SSRN: http://ssrn.com/abstract=1316733, 1-42.

Windmeijer, F., (2005). *A Finite Sample Correction for the Variance of Linear Efficient Two-Step GMM Estimators*. Journal of Econometrics, 126(1), 25-51.