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Financial Sector Liberalization and Efficiency: Evidence from Pakistan

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Abstract:

Banking sector of Pakistan has been transformed over the past three decades through liberalization, the Privatization of State-owned commercial banks, entrance of domestic private banks, and the removal of barriers on the entry of foreign banks, the introduction of prudential regulations, merger and acquisitions reforms. The effects of these reforms have measured by ordinary least square (OLS) techniques. The ordinary least square results show that during the first reform period the profitability of the Pakistani banking sector was maximum when banking sector of Pakistan follow the reforms of Privatization and least efficient in the Second reform period.

Keywords: Liberalization, Efficiency, Privatization, performance and Deregulation.

1. Introduction

Several developing and transitions economies liberalize their banking sector during the past three decades (Fanelli and Medhora, 1998). Liberalizing reforms includes Privatization of State-owned banks, new license to Domestic Private Banks, foreign banking facilities, liberalization on interest rate restrictions, the introduction of markets-based securities and the quantitative control on advance lending. The basic aim of these reforms was to enhance efficiency in investment allocation and also to furnish banking services to all the sectors of both the developing and transitions economies. Therefore, developing and transitions economies thinks carefully before liberalizing their banking system because they can avoid the worst effect of liberalization by following regulatory planning. There is nothing with the rules of banks; they have just to be the right kind.

Successful sources of bank Profit are behavior of macroeconomic variables likes savings, real growth rates and investments rates, which may change due to the banking reforms. By following the above reforms, evidence is available in favor of changes in structure, performance and efficiency of banks. For this study

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microeconomic level data used pre and post- reforms of all the banks performing their operation in Pakistan excluding specialized institutions. The micro level data availability is worthy because the differences in the efficiency of banks were owing to governance and ownership. Therefore, we can easily estimate the impact of reforms on revenues, costs, profitability and productivity of the Pakistan banking sector. But in this study, we are examining the impact of these reforms on profitability of the banking sector, during different reforms periods of Pakistan. The approach based on the econometrics methods is used to examine the profit efficiency changes followed in the earlier research by (Berger and Mester, 2003).

2. Literature Review

By following Privatization; Privatized banks show improvement in profit efficiency. While State -owned banks stands least efficient in profit efficiency. New Private domestic banks show highest performance than foreign bank (Patti and Hardy, 2005).Bank Privatization improves bank efficiency, raises competition, improves performance even in poor regulatory environments and gains are also become greater when foreign banks participate in the Privatization process. Privatized banks performance started decline during state-ownership (Clarke, Cull and Shirley, 2005).The efficiency of foreign banks increases when institutions quality and same similarity exist between home and host countries. It also finds that foreign banks operate more efficiently when similarity exists in governance between the home and host countries (Lensink, Meesters, and Naaborg, 2008). Foreign banks outperform in profit efficiency than both the state-owned and domestic private banks (Mamatzakis, Staikouras, and Filippaki, 2008).Post-privatization performance of Private banks, foreign banks and Public banks exceeds their Pre-privatization level performance (Burki and Ahmad, 2010).A study conducted by limi, 2004 results is different with our current study.Pakistani banking sector perfosrmance can increase by following diversification, by operational techniques and also through size. Privatized banks outperformed while state-owned banks are on average. Both the foreign banks and Private banks having less efficiency than Privatized banks but state-owned banks stand least efficient (Limi, 2004).Smaller banks and larger public banks are most efficient than medium sized Chinese banks (Chen, Skulluy, and Brown, 2005).State-owned banks show better performance against domestic Private and Foreign banks in India (Ray and Das 2010). Foreign banks have demonstrated higher efficiency than their domestic banks as showed in earlier studies of developing and transition countries. Foreign banks are more efficient because of the better performance of Greenfield banks (Havrylchyk, 2006). Those banks which have less non-performing loans are most efficient technically. Those banks which have low-risk portfolios are more efficient. In public sector medium- sized banks show having good performance and also operating at higher efficiency technically (Das and Ghosh, 2006). Foreign banks qualified for higher efficiency which shows increase in efficiency than four Australian banks. Foreign banks efficiency has increased by following deregulation reforms and competition also increased by following diversity in banking sector.

The diversity in banking sector and deregulation reforms is important for promoting efficiency (Strum and Williams, 2008). Private Banks have out -performed over the foreign and state-owned banks in production and production growth, while the new private banks increasing their size and having the priority over the other types of banks in India (Sanyal and Shankar, 2010).

The deregulation and liberalization of banks have raised efficiency scores of all the banks in India despite of their ownership (Ketkar and Ketkar, 2008). Liberalization and Privatization reforms have shown financial health throughout the Pakistan. The efficiency of Privatized banks is less because the poor performance of Allied bank Ltd. (Khalid, 2006). Efficiency of the Pakistani banking sector and Indian is improving by following financial liberalization programmed since 1995. Pakistani and Indians banks are less efficient in earning income than generating earning assets (Ataullah, Cockerill and Ley, 2004).Liberalization improves the efficiency which shows investment funds are distributed in well manner (Galindo, Schiantarell and Weiss, 2007).

3. Research Methodology

3.1 Sample

In this study, we used financial data of all commercial banks except specialized financial banks having their operations in Pakistan. The financial data based on the book values of all the banks taken from various editions of "**Banking Statistics of Pakistan**" issued by the SBP. All those explanatory variables having impact on the profit of the banking sector of Pakistan, for this purpose the sample size is 1981-2008. We divide the sample size into four sub- periods, the first sub period having the year 1981-1992 which is pre-reform period means an earlier period before liberalization, privatization and elimination of restrictions on banks activities. The first reform period 1993-1997, when privatization and liberalization taken effect. The second sub- period is 1998-2002, when other reforms had effect. The third sub – period is 2003-2008, when merger & acquisitions reforms had taken effect. We obtained financial data on all the licensed banks (incorporated in Pakistan and incorporated outside Pakistan). For 1981-1992 sub period, the sample having five Public banks of which two Privatized during 1981-1992, 9 Domestic Private banks, 18 foreign banks , for 1993-1997, sample includes 6 State-owned banks, 2 Privatized, 13 Domestic private banks and 20 foreign banks, for 1998-2002, the sample includes 5 Public , 3 privatized, 14 domestic private banks, 17 foreign banks and for last sample 2003-2008, the sample includes 4 Public, 4 Privatized, 21 domestic private and 7 foreign banks. Total sample includes 68 banks. Macroeconomic level data also taken from the World Bank development indicators web site. All the reforms regarding Privatization, liberalization, ownership and regulatory reforms mentioned in the Banking statistics of Pakistan issued by State Bank of Pakistan.

3.2 Regression Model

To determine how explanatory variables will affect the profitability of all the commercial banks. For this, we include six independent variables i.e. Size, Liquidity, Capital adequacy, Fund sources, GDP, Inflation and one dependent variables Return on assets. For this purpose pooled financial data from 1981-2008 and also OLS regression used on all the data sets for getting results. By this we will determine in which period profit of the banking sector was maximum and also find out the relationship between independent and dependent variables. Based on earlier studies, we are also using the below mention model for the Profitability.

Return on Asset = β0+ β1 (SIZE) + β2 (LQ) + β3 (CA) + β4 (FD sources) + β5 (GDP) + β6 (INF) + ε

3.3 Dependent and Independent variables

We are conducting this research particularly to find out the influence of various variables on the profitability and also in which reform period the profit was at maximum. Return on asset as dependent variable, while Size, Liquidity, Capital adequacy, Fund sources, GDP and Inflation as independent variables.

3.4 Dependent variable

Return on Asset measures nets profit percentage against total assets or profit in per rupee against assets and also show the managerial abilities to use the bank assets in efficient manner for making profit. (Athanasoglou, Brissimis and Delis 2008; Hameed and Bashir, 2003; Alrgaibat, 2010; Mamatzakis and Remoundos, 2003; Sayilgan and Yildirim, 2009;Kosak and Cok,2008). In all the above studies proxy was employed as Profit before tax divided by the total assets.

3.5 Independent Variables

Size (SZ): The natural log of banks total assets proxy has been employed in this study as used by (Pasiouras and kosmindu, 2007). Size shows that those banks which are larger in size are availing the opportunities of economies of scales while small banks showing diseconomies of scales. Therefore, larger banks having higher profitability due to economies of scales (Ramlall, 2009). All the studies find size has positive relation with profitability. A negative relationship between size and china banks profitability also happened a fact noted by the (Habibulah and Sufian, 2009; Goddard, Molyneux and Wilson, 2004; Naceu,2003). We are also expecting that size will be positively related with profitability. Log of assets proxy is used.

Liquidity: For Liquidity proxy used loans & Advances divided by total assets. The liquidity proxy shows percentage of total assets of each bank is blocked in loans & advances. The low liquidity ratio shows the bank is more liquid. Positive relationship exists between liquidity and profitability (Sufian, 2011). Negative relationship shown between Liquidity and profitability (Sayilgan and Yildirim, 2009). In several studies Loan to assets proxy is used. But due to availability of data we are employing proxy as Loans & advances divided by total assets. **Capital**

Adequacy: EQTA a measure of capital adequacy for measuring Equity to total Assets proxy is used. Those Banks which have higher capital-Asset ratio represent to the low leverage and low risk. Excess capital can be provided as loan which will increase profitability (Ramlall,. 2009).U.S banks had shown the relationship between capital adequacy and profitability was positive. Tunisian banking industry also found relationship was positive (Naceur, 2003; Pasioras and kosmidou, 2007; Habibulah and Sufian, 2009) .we also expecting the same relationship.
Equity/Total Assets proxy is used.

Fund Sources: Deposits to total assets proxy used regarding Fund sources in this study. A study which show a positive relationship between fund sources and profitability (Fries and Taci, 2005). Fund sources ratio shows that how many percentages of total assets are the borrowed funds from the public. We are expecting the positive relationship between fund sources. Deposits / Total assets proxy is used.

GDP: GDP a macroeconomic variable which measured whole economic activities of an economy (Pasiouras and Kosmidou, 2007). The annual growth rate of GDP has positive and significant relation with profitability (Habibulah and Sufian, 2009) .We are also estimating the relationship will be positive between the GDP and profitability of all banks. GDP growth rate proxy is used.

Inflation: In general, high inflation rates are associated with high loan interest rates and thus high income. The relationship between inflation and profitability among china banks was positive (Habibulah and Sufian, 2009). The relationship was negative between inflation and profitability of banks (Sayilgan and Yildirim, 2009). We are also estimating negative relationships between inflation and profitability. In this study Inflation rate proxy is used.

4. Regression Analysis

In this study we are examining the effect of six independent variables on the Profitability of banks operating in Pakistan except specialized financial institution using four ordinary least square regression models. The above four regression models are using different data according to the reform period under each period. But in our analysis the full sample covered the period from 1981 to 2008. This full sample having four sub-periods 1981-1992, 1993-1997, 1998-2002 and 2003-2008.. Model A use the financial data of Pre-reform period 1981-1992, while Model B use the financial data of first reform period 1993-1997, Model C use the financial data of second reform period 1998-2002 and Model D use the financial data for the third reform period 2003-2008.Table 4.1 shows the regression results of Model A (1981-1992), while Table 4.2 specifies the results of Model B (1993-1997), but table 4.3 depicts the results of Model C (1997-2002) and finally the table 4.4 shows the results of Model D (2003-2008).

Model A (1981-1992) reports the results of regression analysis in which six independent variables are regressed by using the data of all banks except specialized financial institution operating in Pakistan during period 1981-1992.The R square value .071 depicts that profitability was 7.1% dependent on these independent

variables size, liquidity, capital adequacy, fund sources, GDP and inflation. Therefore, Profitability was particularly due to these six variables of banks during 1981-1992. The R square is higher than the adjusted R square i.e. .049. F statistics of OLS model A (1981-1992) shows statistically significant. t values in OLS model of fund sources and inflation positive but fund sources statistically insignificant and inflation statistically significant. While t value of size, liquidity, capital adequacy and inflation are negative but statistically insignificant.

Table 1.2 of Model A (1981-1992) reports coefficient of variable size is negative and statistically insignificant. This shows that during the pre-reform period 1981-1992 the relationship was negative between size and profitability which shows during pre-reform period size of the banking sector was small therefore all banks harnessing the economies of scales. The negative coefficient of liquidity refers to negative relationship between liquidity and profitability. The negative relationship shows statistically insignificant with the t value of -.130. Though negative sign confirms that liquidity position of banking sector was high during 1981-1992.

During pre-reform period 1981-1992, all banks provided loans & advances to public and financial institutions in small quantity, therefore revenues was small and therefore, profitability of all banks was low. Coefficient of capital adequacy is also negative and statistically insignificant. This negative sign means negative relationship due to small amount of capital and reserves during 1981-1992. This shows low profitability of banks. The coefficient of fund sources positive and also statistically insignificant. This positive value shown the positive correlation between fund sources and profitability and which shows deposits were available to banks during pre-reform period due to which funds were available to banks from which revenues generated and positive relationship exist. Table 1.2 show beta value of GDP is - .098. However, GDP statistically insignificant. This negative sign shows that growth of all banks very low during pre-reform period. Therefore, during pre-reform period relationship between GDP and profitability was negative. The coefficient of Inflation is positive and statistically significant. A positive relationship was between inflation and profitability during 1981-1992.

Table 2.1 Model B (1993-1997) shows the regression analysis of independent variable using the financial data of all banks operating in Pakistan during 1993-1997. During first reform period privatization and liberalization reforms take place. The R square value.466 indicates that profitability is 47% dependent on these independent variables i.e. size, liquidity, capital adequacy, fund sources, GDP and inflation. It means profitability was dependent on these six variables of all banks. R square value was slightly higher than the value of adjusted R square i.e. .448. F statistics of model B (1993-1997) shows results are significant at 1% level which indicates the soundness of the regression model. t values of regression statistics of size, liquidity, capital adequacy, fund sources and GDP are positive and statistically insignificant but liquidity statically significant. The t values inflation is negative but

statistically insignificant. Table 2.1 of Model B(1993-1997) shows that coefficient of variable size Positive and statistically insignificant. This shows that during the second reform period 1993-1997 a positive relationship was between profitability and size. This shows that during first reform period when privatization and liberalization reforms take place the size of the banks increase and therefore all banks avail the opportunity of economies of scales. Coefficient of liquidity is positive which means positive relationship between liquidity and profitability. However, this positive relationship is found to be statistically significant. Though positive sign confirms that liquidity position of banking sector was low during 1993-1997.Which shows during first reform period 1993-1997 all banks provided loans & advances to public and financial institutions in large quantity, therefore revenues were larger resultantly profitability of all banks was high. Only liquidity variable is significant then all other control variables. The coefficient of control variable capital adequacy positive and also statistically insignificant. This positive sign indicates the positive relationship was due to large amount of capital and reserves during 1993-1997. Which shows high profitability of banks. The coefficient of control variable fund sources positive and statistically insignificant which means positive relationship was due to the deposits were available to banks during first reform period (1993-1997) due to which funds were available to banks from which revenues generated and positive relationship exist. Table 2.1 having beta value of GDP is .101 with the positive coefficient sign. However, GDP statistically insignificant. This positive sign shows that growth of all banks was very high during first reform period. Therefore, during first reform period relationship between GDP and profitability positive. The coefficient of variable Inflation is negative and statistically insignificant. A negative relationship was between inflation and profitability during 1993-1997.

Table 3.1 of Model C (1998-2002) reports the results of regression analysis in which six independent variables are regressed by using the data of all banks except specialized financial institution operating in Pakistan during 1998-2002 which is second reform period. In this period others reforms happened and affect the banking sector in Pakistan. The value of R square .045 indicates that profitability is 4.5% dependent on independent variables i.e. size, liquidity, capital adequacy, fund sources, GDP and inflation. Therefore, Profitability mainly defined by these six variables of banks during 1998-2002. R square higher than the value of adjusted R square i.e. .013.F statistics of model C (1998-2002) shows that the results are insignificant. Furthermore, t values of regression statistics of fund sources and GDP are positive but fund sources and GDP statistically insignificant, while size, Liquidity, capital adequacy and inflation are negative but statistically insignificant.

Table 3.2 Model C (1998-2002) shows coefficient of size is negative and also insignificant. This shows that during the second reform period 1998-2002 a negative relationship was between profitability and size. This shows that during second reform period size of the banking sector was very small therefore all banks

harnessing the economies of scales and profitability decline of banking sector in Pakistan. The coefficient of liquidity is negative which indicates a negative relationship in 1998-2002.Though negative sign confirms that liquidity position of banking sector was high due to other reforms during 1998-2002. Which shows during third reform period 1998-2002 all banks provided loans & advances to public and financial institutions in small quantity, therefore revenues was small resultantly profitability of all banks was low. The coefficient capital adequacy is negative and also insignificant. This negative sign indicates the negative relationship between capital adequacy and profitability and predicts that this negative relationship was due to small amount of capital and reserves during 1981-1992. Which shows low profitability of banks. The coefficient of control variable fund sources is found to be positive and statistically insignificant. This positive sign refers to the relationship was positive relationship between fund sources and profitability which shows deposits were available to banks during second reform period due to which funds were available to banks from which revenues generated and positive relationship exists. Table 3.2 shows the beta value of GDP is .007 with the positive coefficient sign. Therefore, GDP variable statistically insignificant. This positive sign shows that growth of all banks high during third reform period. Therefore, during second reform period relationship between GDP and profitability was positive. The coefficient of variable Inflation is negative and statistically significant. A negative relationship was between inflation and profitability during 1998-2002.

Table 4.1 of Model D (2003-2008) reported about regression analysis in which six control variables are regressed by using the data of all banks except specialized financial institution operating in Pakistan during period 2003-2008. During third reform period The value of R square .167 which indicates that profitability nearly 17% is dependent on control variables i.e. size, liquidity, capital adequacy, fund sources, GDP and inflation. Therefore, Profitability mainly defined by these six variables of banks during 2003-2008.The R square is also higher than the value of adjusted R square i.e. .142. F statistics of model D (2003-2008) shows results are statistically significant at the level of 1% which proves the soundness of the model. t values of size, liquidity and GDP were positive but all were statistically insignificant but capital adequacy, fund sources and inflation t values were negatives. Capital adequacy was statistically significant and fund sources and inflation were statistically insignificant. Table 4.2 of Model D (2003-2008) shows that coefficient of size variable is positive and statistically insignificant. This shows that during the third reform period 2003-2008 positive relationship was between profitability and size. This shows that during third reform period size of the banking sector was large therefore all banks avail the economies of scales. Positive coefficient of liquidity shows the positive relationship. This positive relationship statistically insignificant. Though positive sign confirms that liquidity position of banking sector was low during 2003-2008. Which shows during third reform period 2003-2008 all banks provided loans & advances to public and financial institutions in large sum, therefore revenues was high resultantly profitability of all banks was high. The

coefficient of capital adequacy variable is negative and statistically insignificant. Which shows a negative relationship was between capital adequacy and also predicts that this negative relationship was due to small amount of capital and reserves during 2003-2008. Which shows low profitability of banks. The coefficient of fund sources is negative and statistically insignificant. This negative sign shows indicates the relationship was negative between fund sources and profitability. This shows deposits were available in very small quantity to banks during third reform period and revenues generated was low therefore negative relationship exist.

Table 4.2 shows the beta value GDP variable is .057. However, GDP statistically insignificant. This positive sign shows that growth of all banks very high during third reform period due to merger& acquisition reforms. Therefore, during third reform period relationship between GDP and profitability was positive. The coefficient of variable Inflation is negative and statistically insignificant which shows the relationship was negative between inflation and profitability during 2003-2008.

5. Conclusion

By doing this study we are investigating the impact of banking reforms on the profitability of banking sector of Pakistan. Therefore, we used pooled data of 68 banks was operating in Pakistan during the 1981-2008. Profitability or ROA is used as dependent variable while size, liquidity; capital adequacy, fund sources, GDP, and inflation as independent variables. we also used different data sets of reforms of banks.We are using four OLS regression models. The regression analysis reveals that banking reforms in forms of Privatization/Decentralization, liberalization, other reforms and merger & acquisition reforms had dramatically effect on the profitability of Pakistani banking sector. Regression analysis show that during privatization reforms the banking sector profit was nearly 47% at maximum level. I will suggest the bank reform policy makers to follow the Privatization reforms for running the operation of banks in Pakistan because regression analysis show that during privatization reforms the profitability of banking sector was maximum against others reforms.

References:

Athanasoglou, P.P., Brissimis, S.N., & Delis, M.D. (2008).Bank-specific, industry specific, and macroeconomic determinants ,of bank profitability. *Journal of international financial markets, institutions, and money*, 121-136.

Alrgaibat, G.A. (2010). The Profitability of the Banking Sector in Hashemite Kingdome of Jordan (1999-2008). *European Journal of Economics, Finance and Administrative Sciences*, 1450-2275.

Ataullah, A., Cockerill. T & Ley, H. (2004).Financial liberalization, and bank efficiency: a comparative analysis of India and Pakistan .*Applied Economics*, vol. 36, 1915–1924.

Boehme, E., Nash, R.C. & Netter, J.M (2005). Bank privatization in developing and developed countries: Cross-sectional evidence on the impact of economic and political factors. *Journal of Banking & Finance*, 1981–2013.

Boubakria, N., Cosset J.C& Guedhamic, O. (2005). Liberalization, corporate governance, and the performance of privatized firms in developing countries. *Journal of Corporate Finance*, 767– 790.

Brown, M., Maurer, M.R., Pak, T. & Tynaev, N. (2009).The impact of banking sector reform in a transition economy: Evidence from Kyrgyzstan. *Journal of Banking & Finance* 33, 1677–1687.

Burki, A.A,& Ahmad, S. (2010).Bank governance changes in Pakistan: Is there a Performance effect? *Journal of Economics and Business*,129–146.S

Clarke, G.R.G., Cull, R. & Shirley, M.M. (2005). Bank privatization in developing countries: A summary of lessons and findings. *Journal of Banking & Finance*,1905–1930.

Chen, X., Skulluy, M. & Brown, K. (2005). Banking efficiency in China: Application of DEA to pre- and post-deregulation eras: 1993–2000. *Journal of China Economic Review*, 229–245.

Das, A. & Ghosh, S.(2006). Financial deregulation and efficiency: An empirical analysis of Indian banks during the post reform period. *Review of Financial Economics*,193–221.

Fries, S. & Taci, A. (2005) Cost efficiency of banks in transition: Evidence from 289 banks in 15 post-communist countries. *Journal of Banking & Finance*, 55–81.

Fanelli, J.M & Medhora, R.M (1998).Financial reforms in developing countries .MacMillan Press, London.

Goddard, J. Molyneux, P. & Wilson, S.J (2004).The Profitability of European Banks: A Cross-Sectional and dynamic panel Analysis. The Manchester School, vol.72, 1463–6786, 363–381.

Galindo, A., Schiantarelli, F. & Weiss. A. (2007).Does financial liberalization, improve the allocation of investment? Micro-evidence from developing countries. *Journal of Development Economics*, 562–587

Havrylchyk, O. (2006).Efficiency of the Polish banking industry: Foreign versus domestic banks. *Journal of Banking & Finance,* 1975–1996.

Iimi, A. (2004). Banking sector reforms in Pakistan: economies of scale and scope, and cost complementarities. *Journal of Asian Economics*, 507–528

Kosak1, M. & Cok2, M. (2008).Ownership structure and profitability of the banking sector: The evidence from the SEE region, vol. 26 . 1 93-122.

Ketkar, W.k & Ketkar, S.L. (2008). Performance and Profitability of Indian Banks in the Post Liberalization Period. Presented at *The World Congress on National Accounts, and economic Performance Measures for Nations*.

Khalid, U. (2006).The Effect of Privatization, and Liberalization on Banking Sector Performance in Pakistan.*SBP Research Bulletin* Vol.2

Lensink, R., Meesters, A. & Naaborg, l. (2008). Bank efficiency, and foreign ownership: Do good institutions matter?. *Journal of Banking & Finance,* 834–844.

Mamatzakis. E., Staikouras, C. & Filippaki, A.k. (2008). Bank efficiency in the new European Union member states: Is there convergence?. *Journal International Review of Financial Analysis*, 1156–1172

Mamatzakis, E.C. & Remoundos P.C. (2003). Determinants of Greek Commercial Banks Profitability, 1989-2000. Vol. 53.

Matthews, K. (2010). Banking Efficiency, in emerging Market Economies. *Published by the state bank of Pakistan.*

Naceur, S.B. (2003). Determinants of the Tunisian banking industry profitability: panel evidence. *ERF Research.*

Pasiouras, F. & Kosmidou, K. (2007). Factors influencing the Profitability of Domestic and Foreign commercial banks in the European Union. *Research in International Business and Finance,* 222–237

Patti, E.B. & Hardy, D.C. (2005). Financial sector liberalization, bank privatization, and efficiency: Evidence from Pakistan. *Journal of Banking & Finance* 29, 2381–2406.

Ramlall, I. (2009).Bank-Specific, Industry-Specific and Macroeconomic Determinants of Profitability in Taiwanese Banking System: Under Panel Data Estimation .*International Research Journal of Finance and Economics*, 1450-2887.

Sanyal, P. & Shankar (2010). Ownership, competition, and bank productivity: An analysis of Indian banking in the post-reform period. *International Review of Economics and Finance.*

Sayilgan, G & Yildirim, O (2009). Determinants of Profitability in Turkish Banking Sector: 2002-2007.*International Research Journal of Finance and Economics*,1450-2887.

Sufian, F &. Habibullah, S.H (2009). Bank Specific and macroeconomic determinants of bank profitability: Empirical evidence from china banking sector. *Higher Education Press and Springer-Verlag*, Front. Econ. China, 4(2): 274–291.

Sufian, F. (2011). Profitability of the Korean banking sector: panel evidence on bank specific and macroeconomic determinants. *Journal of Economics and Management*, vol.7, 43-72.

Sturm, J.E & Williams, B. (2008). Characteristics determining the efficiency of foreign banks in Australia. *Journal of Banking & Finance*, 2346–2360.

Table: 1.1 Model A (1981-1992)			
R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
.267a	**0.071**	**0.049**	**0.0153**

Table: 1.2 ANOVA Model A (1981-1992)					
Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Regression	.005	6	.001	3.254	.004a
Residual	.059	254	.000		
Total	.064	260			

Table: 1.3 Coefficients & Significance level of Model A (1981-1992)					
Variables	**Unstandardized Coefficients**		**Standardized Coefficients**	**t-value**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	.036	.010		3.493	.001
Size	-.004	.001	-.193	-2.585	.010
Liquidity	-.001	.011	-.009	-.130	.897
Capital adequacy	-.031	.023	-.085	-1.328	.185
Found sources	.007	.008	.067	.886	.376
GDP	-.126	.078	-.098	-1.609	.109
Inflation	.139	.040	.226	3.453	.001

Table: 2.1 Model B (1993-1997)			
R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
.682a	.466	.448	.03192

Table: 2.2 ANOVA Model B (1993-1997)						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
	Regression	.164	6	.027	26.857	.000[a]
	Residual	.188	185	.001		
	Total	.353	191			

Table: 2.3 Coefficients & Significance level of Model B (1993-1997)						
Variables		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
	(Constant)	-.009	.028		-.306	.760
	Size	5.466E-14	.000	.011	.199	.842
	Liquidity	.068	.021	.377	3.280	.001
	Capital adequacy	.103	.056	.123	1.830	.069
	Found sources	.028	.012	.258	2.215	.028
	GDP	.264	.152	.101	1.734	.085
	Inflation	-.239	.251	-.054	-.953	.342

Table: 3.1 Model C (1998-2002)			
R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
.213a	.045	.013	.04256

Table: 3.2 ANOVA Model C (1998-2002)						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
	Regression	.015	6	.003	1.414	.211a
	Residual	.324	179	.002		
	Total	.340	185			

Table: 3.3 Coefficients & Significance level of Model C (1998-2002)						
Variables		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
	(Constant)	.088	.043		2.065	.040
	Size	-.011	.006	-.169	-1.823	.070
	Liquidity	-.010	.025	-.030	-.387	.700
	Capital adequacy	-.018	.016	-.085	-1.137	.257
	Found sources	.031	.025	.119	1.254	.212
	GDP	.407	.392	.077	1.040	.300
	Inflation	-.635	.300	-.165	-2.113	.036

Table: 4.1 Model D (2003-2008)			
R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
.408a	.167	.142	.02479

Table: 4.2 ANOVA Model D (2003-2008)						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
	Regression	.025	6	.004	6.740	.000a
	Residual	.124	202	.001		
	Total	.149	208			

Table: 4.3 Coefficients & Significance level of Model D (2003-2008)						
Variables		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
	(Constant)	.023	.015		1.481	.140
	Size	2.900E-13	.000	.006	.094	.925
	Liquidity	.004	.015	.019	.253	.800
	Capital adequacy	-.054	.015	-.343	-3.568	.000
	Found sources	-.006	.012	-.041	-.450	.653
	GDP	.075	.117	.057	.640	.523
	Inflation	-.084	.044	-.171	-1.917	.057