Determinants of Interest Spread
in Pakistan

M. IDREES KHAWAJA and MUSLEH-UD DIN

Interest spread of Pakistan's banking industry has been on the rise for the last two years. The increase in interest spread discourages savings and investments, on the one hand, and raises concerns about the effectiveness of the bank-lending channels of monetary policy, on the other. This study examines the determinants of interest spread in Pakistan using panel data of 29 banks. The results show that the share of interest-insensitive deposits in total bank deposits is a key determinant of interest spread, whereas industry concentration has no significant impact on interest spread. Furthermore, the ongoing merger wave in the banking industry will limit the options for the savers, with adverse implications for the interest spread. We argue that to maintain a reasonably competitive environment, merger proposals may be subjected to review by an anti-trust authority.

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1. INTRODUCTION

Interest spread—the difference between what a bank earns on its assets and what it pays out on its liabilities—has been on an upward course during the last few years, reaching as high as 7.14 percent at end of 2007. An increase in the interest spread implies that either the depositor or the borrower or both stand to loose. In the context of developing economies, the lack of alternate avenues of financial intermediation aggravates the adverse impact of increase in spread.[1] Interest spread also has implications for the effectiveness of the bank lending channel. For example the central bank influences the yield on treasury bills (T. bill hereafter) which affects the deposit and lending rates[2]. The change in these rates influences the cost of capital that in turn affects the level of consumption and investment in the economy. If the pass-through of the changes in yield on T. bill rate to the deposit and lending rates is asymmetric then this changes the spread, for better or worse, depending upon the nature of asymmetry. If the increase in spread is

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[1]Peria and Mody (2004) argue that the impact of increase in spread could be severe in developing countries as the capital markets are relatively less developed and a sizable percentage of agents depends on banks for their financial needs.
[2]For a comprehensive discussion on channels of monetary policy, see Mishkin (1995).

due to lower return to depositors then this discourages savings; alternatively if it is due to higher charge on loans, investment decisions are affected. In either case the increase in spread has an adverse bearing upon the effectiveness of bank lending channel of monetary policy and has therefore important implications for the economy[3].

This paper explores the determinants of interest spread in Pakistan focusing in particular on supply interest-insensitive deposits to the banks and industry concentration. A related issue addressed in the paper is the growing trend towards Mergers and Acquisitions (M&As) in the banking industry that is driven in part by the recently introduced Basel Accord II to which Pakistan is a signatory.[4] M&As are likely to limit competition in the industry with adverse implications for the interest spread. Section 2 presents a brief review of the literature on determinants of interest spread. Section 3 spells out the methodology whereas Section 4 presents the empirical findings. Section 5 examines the case for allowing the anti-trust/competition authority to review proposed mergers if the competition stands to reduce below a certain specified threshold level. Section 6 concludes the discussion.

2. REVIEW OF THE LITERATURE

A substantial body of theoretical and empirical literature has explored various determinants of interest spread including: (i) market structure of the industry; (ii) bank specific factors; (iii) macroeconomic variables; and (iv) financial regulations. The industrial organisation literature predicts that an oliogopolistic market structure may result in higher spreads [Samuel and Valderrama (2006)]. Drawing on insights from the literature on industrial organisation, a number of studies have analysed the role of concentration in the determination of interest spread in the banking sector. In particular, the structure-conduct-performance hypothesis, due to Bain (1951), holds that market concentration encourages collusion that in turn enables the firms in the industry to pay relatively less on their liabilities and charge more on their assets, thereby increasing the spread. This implies that if the banks are free to set their own rates, then given market power they will set lending rates at higher levels and deposit rates at lower levels than the competitive environment would allow.

Ho and Saunders (1981) view the bank as 'a dealer', a demander of deposit and supplier of loans, and argue that bank interest margin depends on four factors including the degree of bank management's risk aversion, market structure of the industry, average size of bank transactions, and the variance of interest rates. In addition, the authors reckon that a number of imperfections and regulatory restrictions have an impact upon spread, and consider the probability of loan defaults and opportunity cost of holding mandatory reserves as additional variables that influence the spread.

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[3]For discussion and empirical evidence regarding the impact of monetary policy on the level of real economic activity see Friedman and Schwartz (1963), Romer and Romer (1989) and Bernanke and Blinder (1992). Also, Samuel and Valderrama (2006) find that wide bank spreads in Barbados may have contributed to low rates of private investment and economic growth.

[4]To ensure financial solvency, the Accord requires that capital of a bank be at least 8 percent of its risk-weighted assets. Accordingly, the State Bank of Pakistan has asked commercial banks to raise their capital gradually to the level of Rs 6 billion till the end of 2009. Some of the banks that have less capital than the required level and/or are facing difficulties in raising capital through equity injection or reinvestment of profits are opting for mergers to bring their capital to the required levels.

Banking mergers increase concentration and may increase efficiency as well. Therefore mergers carry the potential to speed up or slow-down the transmission of change in policy rate to deposit and lending rates thereby affecting spreads. Woodbridge and Williams (2003) based on Australian experience argue that mergers are undertaken because these increase value, either by way of increase in efficiency or increase in bargaining power. The authors recommend that mergers that promote efficiency should be allowed and those that further monopoly power should be restricted. While reviewing the merger approval process in Australia, Woodbridge and Williams note that the process of informal clearance of mergers has led to an unhealthy degree of power in the hands of anti-trust regulator which can be used to extract concessions from the firms that wish to merge.

Berger and Hannan (1989) test the structure-conduct-performance hypothesis for United States and find that banks in highly concentrated markets pay 25-100 basis points less on money market deposit accounts as compared with banks that operate in markets with a lower degree of concentration. However the effect of concentration on long term certificate of deposits (CDs) rates are marginal at best. Heggestad and Mingo (1976) confirm the existence of a statistically significant relationship between concentration and prices in the commercial banking sector of United States. With respect to some specific services, the study finds that concentration-performance relationship is curvilinear implying that the lesser the initial concentration, the greater is the impact of a given increase in concentration on prices. Neumark and Sharpe (1992) implicitly confirm the structure-conduct-performance hypothesis for United States. The authors find that banks in concentrated markets are found slower to raise deposit rates in response to rising market interest rates but faster to reduce these in response to declining market rates, thereby maintaining higher spreads. Corvoisier and Gropp (2001) examine the hypothesis for euro area countries and confirm that the S-C-P hypothesis holds for loan and demand deposit rates but not for savings and time deposit rates.[5] Hannan and Liang (1993) and Bajaras, Steiner, and Salazar (1999), using data for United States and Columbia respectively, also suggest that industry concentration may lead to higher spread.

Prager and Hannan (1998) examine the price effects of US bank mergers that led to a substantial increase in local market concentration, and find that over the 1991-94 period the deposit rates offered in local markets where mergers took place declined proportionately more than in markets without mergers. Sapienza (2002) examines the effect of banking consolidation on banks credit policies in Italy and reports that in case of in-market mergers[6] interest rates charged by consolidated banks decrease if the merger involves acquisition of banks with small market share, but as the local market share of the acquired bank increases the decline is offset by market power. Edwards (1965) examines the impact concentration and competition in banking industry of United States. The author finds that mergers have a greater negative impact upon performance in less concentrated markets and therefore recommends that the regulators should be wary of mergers as much as in less concentrated as they are in more concentrated markets. Given the evidence on the relationship between mergers and deposit/lending rates, the merger proposals need to be carefully examined before giving effect to mergers.

[5]The reason why concentration does not influence savings and time deposit rates is attributed to the fact that such deposits do not require geographical proximity and this allows the agents to shop outside the local market.

[6]Mergers amongst firms operating in the same geographical market.

3. METHODOLOGY AND DATA

To examine the determinants of interest spread for Pakistan's banking industry, we employ a variant of the model used by Peria and Mody (2004). The original motivation is from the dealership model of bank spreads developed by Ho and Saunders (1981), extended by Allen (1988) and Angbazo (1997). These models predict that market structure of the banking sector, macroeconomic variables, operating costs, regulatory costs and the credit risk can affect interest spreads. In addition, we include the share of current and savings account deposits in total bank deposits as an explanatory variable. These deposits are by and large interest-insensitive and the larger is the share of such deposits the less incentive the banks have to offer higher returns on deposits. The use of this variable is especially important in Pakistan's environment where a major chunk of the bank deposits[7] are held in low yield (current and savings) types.
Our model is:

$$y_{it} = \alpha_0 + \beta X_{it} + e_{it} \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad (1)$$

Where y_{it} is interest spread defined as the difference between interest earned on average assets and interest paid on average liabilities, (α_0, β) is a vector of parameters, e_{it} is a stochastic error term, and X_{it} is a vector of explanatory variables that includes:

Industry Variables:

    (i)   Concentration
    (ii) Interest-insensitivity of deposits.

Firm Variables:

    (i)   Market share
    (ii)   Liquidity
    (iii) Administrative cost
    (iv) Non-performing loans
    (v)   Equity.

Macro Variables:

    (i)   Real Output
    (ii)   Inflation
    (iii) Real interest rate.

In accordance with the prediction of structure-conduct-performance (S-C-P) hypothesis we expect a positive sign on concentration. We hypothesise a positive sign on the ratio of interest-insensitive deposits to total deposits. Theoretically, changes in T.bill rate are passed on to the deposit and lending rates of the banks. The greater the share of interest-insensitive deposits the less compelled a bank would be to pass on the increase in T.bill rate to deposits, thereby increasing the interest spread. The remaining variables in Equation (1) are control variables. High liquidity ratio, whether self-imposed or the result of regulations, inflicts a cost upon banks as they have to give up the opportunity of

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[7]As of December 2005, some 81 percent of the deposits were held in Current and Savings accounts.

investing these funds in alternate high yielding assets, like loans. Accordingly the coefficient is hypothesised to have a positive sign. Liquidity is measured as the ratio of banks liquid assets to total assets. If banks intermediation cost (i.e. administrative cost) is high, they are likely to offset it by charging their customers higher spread. Non-performing loan (NPL), which captures credit risk, is expected to have a positive impact on the spread. Holding large equity, whether on a voluntary basis or as consequence of a regulation, is costly and therefore varies positively with spread. To the extent that the market share gets translated into market power, the relationship between market share and spread is hypothesised to be positive. However larger banks may reap scale economies and transfer some of the benefits to their customers in the shape of lower spread. Given the conflicting expectations the ultimate hypothesised sign of market share is held ambiguous.

As interest spreads can be influenced by macroeconomic environment we control for real output, inflation, and the policy interest rate (T. bill rate). Real output growth is included to capture the effect of business cycles discussed by Bernanke and Gertler (1989) who argue that borrowers' creditworthiness is countercyclical in that a slowdown in economic activity affects borrowers' fortunes and hence their creditworthiness. The change in creditworthiness would affect the lending rate and hence the spread. Inflation is included because if inflation shocks are not passed on in equal measure to deposit and lending rates then this would have an impact on the spread. Finally we include the policy rate (T.bill rate) that reflects monetary policy stance; if the changes in policy rate are not transmitted symmetrically to the deposit and lending rates then the spread would be influenced by the policy rate.

Interest Spread is measured as the return on average assets minus the cost of average funds. Return on average assets is worked out as the total interest income earned over average assets. The average assets include average loans and advances plus liquid interest earning investments. All averages have been worked out by taking the balances held at the beginning and end of the year. Average cost of funds is computed as total interest paid by the bank over all borrowed funds (Deposits plus Borrowings). Concentration is measured by Hirschmann-Herfindhal index.

We view deposit accounts other then deposits of fixed maturities as interest insensitive. Thus the ones considered interest insensitive are current account, savings account and other accounts. The current account does not pay any interest and is thus obviously interest insensitive. On the other hand, the deposits in savings account can also be treated as interest insensitive mainly because typically such accounts are held by small depositors and salaried persons who maintain these accounts to fulfil everyday banking needs rather than to earn interest.[8] The category 'other deposit accounts' constitute a negligible percentage of the total deposits and their inclusion on either side is not likely to alter the results. We consider these as interest insensitive and hence their supply to banks as inelastic.

Market share of each bank is the bank's total deposits as percentage of the total industry deposits; liquidity is measured as the ratio of liquid assets to total assets;

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[8]It is perhaps for this reason that the banks have been reluctant to raise the rate of interest on savings deposits, as has been pointed out in the latest interim monetary policy statement of the State Bank of Pakistan [SBP (2008)].

administrative cost is the ratio of bank's administrative expenses to bank's total assets; non-performing loan (NPL) is the ratio of provisions for bad and doubtful debts to earning assets; and equity is the ratio of bank's equity to total assets. Data on all these variables are from '*Banking Statistics of Pakistan*' published annually by State Bank of Pakistan (SBP). The data on the three macroeconomic variables, viz., real output growth, inflation and monetary policy rate (six-months T. bill rate is used as the policy rate) are from annual reports of SBP.

Panel data of 29 banks (see list in Annex-A) for the period from 1998 to 2005 are employed in the study. As of now the commercial banks number 35, however to have balanced data we have excluded the banks that were non-existent in 1998. Similarly the banks that do not exist today but were operating in 1998 have not been included. The use of panel data allows us to identify and measure the effects that are simply not detectable in pure cross-section or pure time-series data. Models based on panel data can be estimated using either the random effects model or the fixed effects model. The random effects model assumes the exogeneity of all the regressors with random individual effects while fixed effects model allows for the endogeneity of all the regressors with these effects [Baltagi (2001)]. However our interest being only in the aggregate response of the spread to different variables, the common effect model best suits our purpose. Therefore we have used the common effect model.

4. EMPIRICAL FINDINGS

The models are estimated using the Feasible Generalised Least Squares (FGLS) method to account for hetroscedasticity that may be present in view of the large variation in size of banks. As argued by White (1980), this method enables researchers to draw proper inferences even when hetroscedasticity is not completely eliminated.[9] Parameters estimates obtained from Equation (1) are presented in Table 1.

Table 1

Coefficient Estimates of Equation (1)

Dependent Variable: Interest Spread
Sample Size: 203 Observations, Covering 29 Banks and 7 Years
Estimation Method: Feasible Generalised Least Squares (FGLS),
White Heteroscedasticity-Consistent Standard Errors and Covariance

Variable	Coefficient	*t*-statistic
Concentration	–0.002	–1.14
Inelasticity	0.17	4.38
Liquidity	0.03	3.18
Market Share	0.03	3.37
Equity	0.009	0.67
Non-performing Loans	0.02	4.28
Administrative Cost	0.17	2.04
GDP Growth	–0.55	–6.14
Inflation	–0.08	–1.30
Interest Rate	0.23	3.90
R^2		0.64

[9]Given the short time period, the problem of serial correlation is not a cause of concern.

We have also checked the robustness of results by dropping the statistically insignificant variables. First we estimated the model without the variable 'equity' and then without both the 'equity' and 'inflation rate'. The results, reported in Annexure-A, show that the estimated model is fairly robust to changes in specification.

The variables of our interest are the share of interest-insensitive deposits in total deposits and industry concentration. Interest-insensitive deposits have a positive and significant impact on spread whereas concentration does not cause a statistically significant influence upon interest spread. We argue that the availability of interest-insensitive deposits leaves little incentive to the bankers to adopt competitive practices and therefore the concentration ratio, which captures the level of competition, fails to exercise an influence upon spread. To elaborate, it is important to note that interest-insensitive deposits constituted as much as 81 percent of the total industry deposits in 2005 (Table 2). On the other hand, fixed deposits as percentage of total deposits have been declining with the decline in interest rate [Fixed Deposits (column 3), T.bill rate, (column 5)], thus pointing towards the elastic/interest sensitive nature of fixed deposits. The decline in fixed deposits has in turn led to an increase in the composition of interest-insensitive deposits. With the disintermediation of fixed deposits from the banking system, the banks, being left largely with interest-insensitive deposits, were not too inclined to pay attractive returns on deposits, hence the rise in spread.[10] It is also apparent from Table 2 that the composition of deposits in 1998 had a clear tilt towards interest-insensitive deposits. This tilt continued to aggravate during most of the data span. The average interest spread (column 4) increased by 2.14 percent in 2005 owing to a 2.86 percent increase in interest earned on earning assets but only a 0.72 percent increase in the cost of bank funds (that mainly includes interest paid to depositors).

Table 2

Deposit Supply Elasticity and Interest Spread (Percent)

Year	Inelastic: Current + Savings + Others	Elastic: Fixed Deposits	Interest Spread	Six Months T. Bill Rate
1998	67	33	7.38	11.87
1999	69	31	7.68	10.10
2000	71	29	7.82	10.96
2001	75	25	8.69	7.93
2002	77	23	6.75	4.32
2003	85	15	4.84	1.64
2004	83	17	4.51	3.73
2005	81	19	6.65	8.25

Source: Banking Statistics of Pakistan [SBP (Various Issues)].

[10]It is no coincidence that the period (i.e. 2002-04) during which the percentage of fixed deposits was very low, real estate prices in Pakistan were on the rise and had skyrocketed by 2004. This indicates that at least some part of the fixed deposits withdrawn from the banking system had probably ended up in real estate market. This also points towards the lack of alternate depository avenues.

The observed negative relationship of interest spread with real output (Table 1), is in accordance with the business cycles effect discussed by Barnanke and Gertler (1989). As mentioned earlier, according to the authors, during recession the creditworthiness of the borrower declines and therefore he can borrow only at a higher interest rate, and this raises the spread. Therefore we observe a negative relationship between spread and real output. The positive relationship of the spread with liquidity is due the fact that as the liquidity increases, the bank's appetite for deposits decreases therefore the bank pays less on deposits thereby raising the spread.

The commercial banks during the nineties and initial years of the ongoing decade were burdened with non-performing loans. The situation was so grave that the government had to create a separate corporation to which the non performing loans of the banks were transferred to clean the balance sheets of the banks and thereby make these viable for privatisation. The non-performing loans had increased the intermediation cost of the banks. This got translated into higher spread. Hence the positive relationship of interest spread with non-performing loans.

The positive relation of the interest spread with administrative cost implies that as the profitability of the bank decreases due to increase in non-performing loans or administrative cost, the bank recoups the losses by increasing the spread, that is, either charging more on loans or paying less to depositors or some combination of the two. Finally the positive relationship of the spread with market share implies that higher market share gets translated into higher market power thereby enabling the bank to raise the spread to the detriment of its customers. Its noteworthy here that we hypothesised an ambiguous sign on market share because increase in market share may allow the bank to reap scale economies and thereby allow the bank to transfer some of the benefits to its customers in the shape of lower spread. The fact that the sign on market share is not negative implies that scale economies perspective is not valid in case of Pakistan's banking industry.

5. BANK MERGERS

In recent years, there has been a growing trend towards Mergers and Acquisitions in the banking sector. Austin (2002) argues that poorly conceived or badly executed M&As can present risks to the participating banks, the banking system and other economic sectors [Austin (2002)]. M&As on the one hand allow the merging banks to reap scale economies thereby improving efficiency, on the other hand these tend to lessen competition. Given the adverse impact of M&As on competition, merger proposals in number of countries are scrutinised and at times even blocked if the degree of competition is expected to fall below a certain threshold level due to merger/acquisition. We find that concentration ratio in banking industry is close to the conventional threshold level of 1000 and any further decrease in competition due to mergers may call for review from anti-trust perspective.

In the United States, mergers and acquisitions, besides being approved by the Fed, require approval by another agency that specifically looks into mergers. Additionally, the anti-trust division of the department of justice issues advisory reports on competitive aspects of all bank mergers and is empowered to bring suit against merger proposal that it believes will have significant adverse impact on competition. As of now, the scrutiny and

the approval of the banking mergers in Pakistan fall under the sole jurisdiction of the State Bank of Pakistan, the regulator of banks. Neither the criteria employed for the purpose are easily available, nor an institutional mechanism exists to seek public opinion or take into account grievances of the stake holders, especially those of depositors. It is worth mentioning here that a proviso of the code *Good Transparency Practices for Financial Policies by Financial Agencies* developed by IMF[11] says that

> Financial policies should be communicated to the public in an open manner, compatible with confidentiality considerations and the need to preserve effectiveness of actions.

According to Austin (2002) the objective of the review by the anti-trust authorities is

> "a determination of whether, within the identified geographic and product markets, the effect of transaction will be to substantially lessen competition".

Typically, the likely affect of M&As on competition is tested by employing a measure of industry concentration. More often the concentration is measured in terms of the Herfindahl-Hirschman Index (HHI). The HHI measures industry concentration in terms of relative size of the competitors. Adding the squares of market shares of all banks in the industry, yields the HHI. The credit market share or deposit market share is used as a measure of the market share. The HHI approaches zero when market is served by large number of players of equal size and it goes to 10,000 in case of a perfect monopoly. Under the merger guidelines published by anti-trust division of United States, an industry, other then banking, with post-merger HHI below 1000, is considered un-concentrated; between 1000 and 1800, as moderately concentrated and above 1800 as highly concentrated. In industries, other then banking, a merger generating a raise of 50 points or more in HHI in a highly concentrated industry raises significant concerns. However in banking industry, the US department of Justice allows an increase of 200 points. In US, the higher than normal threshold concentration levels for banking industry are meant to take into account the competitive effect of limited purpose lenders, that are alternate to banks, such as credit unions, saving and loans association and other non-depository institutions. However in Pakistan the competition to banking industry from other Depository/Lending institution being non-existent, as emphasised by our finding regarding the main determinant of interest spread, one cannot convincingly argue for applying a concentration ratio higher than that applicable to other industries. We feel that research avenue exists for developing our own threshold concentration level based upon specifics of the industry. But for the moment, given the absence of financial intermediaries that serve as alternate to banks, we take the general US criteria, that is, HHI above 1000 points and raise of 50 points due to merger as the condition that would call for review of M&As proposal by anti-trust/competition authority (see Annex-B for an illustration of HH Index).

The actual trend of banking industry's concentration based on HHI is presented below (Table 3).

[11]International Monetary Fund, *Code of Good Practices on Transparency in Monetary and Financial Policies: Declaration of Principles*, (September 26, 1999), and related Factsheet titled *Transparency in Monetary and Financial Policies* (March 2001).

Table 3

Banking Industry: Concentration

Year	Concentration* Ratio (HHI)
1998	1,385
1999	1,446
2000	1,403
2001	1,320
2002	1,200
2003	1,112
2004	1,030
2005	912

* Based on market share of deposits.

Though the industry concentration had been on a declining course (Table 3) but it is still close to the threshold level that should invite review from antitrust perspective. A merger or two can push the concentration above the threshold level of 1000. Whatever the concentration level it is useful to examine the cause of decline in concentration. This cause is apparent from a look at the trend of market share composition, presented below in Table 4.

Table 4

Deposit Market Share

	Five Major Domestic Banks	Banks Established in Private Sector since 1991
1998	74.4	10.6
1999	76.9	10.4
2000	75.1	11.9
2001	72.2	14.8
2002	68.9	17.7
2003	66.2	20.7
2004	62.4	24.4
2005	57.8	29.0

Source: Worked out from Banking Statistics in Pakistan [SBP (Various Issues)].

It is clear from Table 4 that the five major banks, that have been in the market for a long time and were protected from competition due to restricted entry till 1991, have lost a significant part of their market share to private banks with opening up of the banking industry to the private sector. (The share of foreign banks, not shown in the table, has not seen a significant shift).

Using an actual case from Pakistan's banking industry, as an illustration, we make the point that taking into account pre- and post-concentration ratios is important while approving bank mergers. In year 2001 United Bank Limited (UBL), then a nationalised bank, was put up for sale under the privatisation programme. Muslim Commercial Bank (MCB) that had already been privatised by then, made a bid for UBL and its bid being the

highest, the sale was initially approved but was later withdrawn given concerns raised in the print and electronic Media. Based on the market share enjoyed by the two banks, we present below what the pre and post merger concentration ratios (HHIs) would have been, had the proposed acquisition gone through.

The figures given in Table 5 indicate that had the proposed acquisition materialised, the industry concentration, measured by HHI would have gone up 219 points which is much more than the 50 points criteria argued earlier. The second condition of the criteria is that the post merger concentration ratio should be more than 1000 points. The table shows that this condition is also fulfilled. Thus given our criteria the proposed acquisition of UBL by MCB should have attracted review by anti-trust/competition authority and the merger should not have been allowed had the sponsors failed to satisfy the authority that there are socially beneficial factors that would offset the adverse impact of reduced competition. This is the practice in countries where the mergers fall under the jurisdiction of anti-trust authority.

Table 5

Banking Industry Concentration HHI: Pre- and Post-proposed Acquisition of UBL by MCB in 2001

	Deposits (Rs in Bill.)	Market Share (Deposit) (%)	Contribution to HHI (Square: Col. 3)
Pre-merger			
MCB	155	10.93	120
UBL	141	9.94	99
All Banks	1,418		
MCB and UBL			219
HHI (Industry)			1320*
Post-merger			
MCB-UBL (Merged)	296	20.87	436
All Banks	1418		
HHI (Industry)			1539**
Increase in Industry Concentration due to Merger			219

*Shown in Table 3.
**Worked out separately taking into account deposit market share of 29 banks (list at Annex C).

Once it is agreed upon that bank mergers need to be subjected to review from anti-trust perspective the issue arises that which agency should conduct the review; the regulator (central bank) or some anti-trust/competition authority. Austin (2002) argues that regulator's interest in preserving the stability of the banking system leans towards greater concentration while public's objective of maximising its return calls for a competitive banking industry. As central bank is a party to the conflict, it is not appropriate for it to conduct review from anti-trust perspective. However, the central bank is still the most suitable authority for looking into mergers from other perspectives like financial soundness.

The middle ground then is that the central bank should accord merger approval while at the same time the anti-trust authority should have the power to block mergers if these carry the potential to reduce competition below a certain specified degree.

6. CONCLUSIONS

This study has investigated the determinants of interest spread of the banking industry in Pakistan, and has explored whether there exists a case for bringing banking mergers and acquisitions under the purview of anti-trust authority. Given the specific features of banking industry in Pakistan such as the non-existence of financial intermediaries that can serve as an alternative to banks for small savers, we included interest-insensitivity of deposit supply to banks as a determinant of interest spread. The results show that interest-insensitivity of deposit supply has a positive and significant impact on spread whereas concentration does not cause a statistically significant influence upon interest spread. We argue that the very high level of interest-insensitive deposits leaves little incentive to the bankers to adopt competitive practices and therefore the concentration ratio, which captures the level of competition, fails to exercise an influence upon spread. We feel that the emergence of alternate financial intermediaries is essential for lowering the spread. Meanwhile, the regulator can perhaps play some role in lowering the spread.

Secondly, the study has explored the question of whether or not the on going M&As in Pakistan's banking industry should fall under the jurisdiction of anti-trust authority. Given that current level of industry concentration is close to the threshold level found in literature for initiating such review, we feel that there is a case for bringing M&As under anti-trust review with the anti-trust authority having the power to block M&As if these are considered inimical to public interest.

ANNEXURE-A

Table A-(1)

Coefficient Estimates of Equation (1): (Excluding Equity)

Dependent Variable: Interest Spread
Sample Size: 203 Observations, Covering 29 Banks and 7 Years
Estimation Method: Feasible Generalised Least Squares (FGLS) White Heteroscedasticity-Consistent Standard Errors and Covariance

Variable	Coefficient	t-statistic
Concentration	−0.001	−1.21
Inelasticity	0.17	4.5
Liquidity	0.03	3.40
Market Share	0.02	2.22
Non-performing Loans	0.03	4.65
Administrative Cost	0.17	2.15
GDP Growth	−0.57	−6.51
Inflation	−0.08	−1.35
Interest Rate	0.23	3.90
R^2		0.66

Table A-(2)

Coefficient Estimates of Equation (1): (Excluding Equity and CPI)

Dependent Variable: Interest Spread
Sample Size: 203 Observations, Covering 29 Banks and 7 Years
Estimation Method: Feasible Generalised Least Squares (FGLS) White
Heteroscedasticity-Consistent Standard Errors and Covariance

Variable	Coefficient	*t*-statistic
Concentration	–0.002	–1.24
Inelasticity	0.16	4.01
Liquidity	0.03	3.60
Market Share	0.02	2.27
Non-performing Loans	0.02	4.63
Administrative Cost	0.17	2.14
GDP Growth	–0.65	–13.40
Interest Rate	0.17	3.57
R^2		0.66

ANNEXURE-B

The computation of Herschman-Herfindhal (HHI) index is described below.

Assume that the six banks indicated in the table below constitute the banking industry. Each of the four of the banks in the industry enjoy 20 percent share of the market. The two other banks are relative smaller with 10 percent share each of the market. We show below what happens to the HHI in case of merger of two large banks, A & B (with share of 20 percent each), a large bank and a small one, D & F (with share of 20 percent and 10 percent respectively) and two small banks E & F (with market share of 10 percent each). It is evident from the table that merger between two large banks is potentially more harmful from competitive market perspective, as it increases concentration by 800 points while merger between two small banks causes an increment of 200 hundred points in concentration.

	Market Share (%)	Concentration Ratio Post-merger Scenarios: Banks			
		Pre-merger HHI	A&B HHI	D&E HHI	E&F HHI
A	20	400	–	400	400
B	20	400	1600	400	400
C	20	400	400	400	400
D	20	400	400	900	400
E	10	100	100	–	400
F	10	100	100	100	
HHI		**1800**	**2600**	**2200**	**2000**

ANNEXURE-C

Banks Included in the Sample

1	Allied Bank of Pakistan
2	Askari Bank Limited
3	Al-Habib Bank Limited
4	My Bank Limited
5	First Woman Bank
6	Habib Bank Limited
7	Alfalah Bank Limited
8	Metropolitan Bank Limited
9	Muslim Commercial Bank
10	National Bank of Pakistan
11	Prime Bank Limited
12	Soneri Bank Limited
13	Union Bank Limited
14	United Bank Limited
15	Faysal Bank Limited
16	Bank of Punjab
17	Khyber Bank Limited
18	PICIC Commercial Bank
19	AL-Baraka Limited
20	ABN Amro
21	American Express Bank
22	Oman Bank Limited
23	Tokyo Bank
24	Citi Bank
25	Deutsche Bank
26	Habib Bank A.G. Zurich
27	Hong-Shinghai Bank
28	Rupali Bank
29	Standard Chartered Bank

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