

# Capital Structure Dynamics and Bank Affiliation of Business Groups: Evidence from Pakistan

Qamar uz Zaman

COMSATS Institute of Information Technology, Sahiwal, Pakistan

Email: qzmalik@gmail.com

## Abstract

**Objective** – An empirical investigation to assess the impact of bank-affiliated business group on firm's capital structure decisions.

**Design/methodology/approach** – A sample of 146 group affiliated firms and subsamples for bank and non-bank affiliated firms was analyzed with random-effect panel regression model to determine the relationship of bank-affiliated business group on firm's capital structure determinants of listed firms in Pakistan using data for 2006-2011.

**Findings** – We have found that bank affiliated firms financing decisions are significantly different from that of non-bank affiliated firms with a common factor of internal capital market. Bank affiliated firm capital structure determinants of growth, asset tangibility, non-debt tax shield and operating risk show significantly different association with choice of leverage compared to non-bank affiliated firms.

**Policy implications** – Our results show that group affiliated firms particularly bank affiliated firms are the reason of market imperfections and have successfully eliminated the market distortions keeping others on a disadvantage. Hence, Policy makers are suggested to improve the regulatory system and its implementation.

**Originality/value** – According to best of our knowledge this is the first study to extend the literature of firm financing decisions in relation to bank-group affiliation in Pakistan.

## Keywords

Capital Structure, Bank Affiliation, Business Groups and Panel Regression

## Introduction

Firm financing decision is key element to achieve the ultimate objective of corporate wealth maximization. Managers normally decide about the financing choice based upon the firm's internal financial capability, external environment and financial market

accessibility. There is an important role and impact of regulatory framework on the firm inclination to debt or equity. Phenomenon of business group having internal ownership ties, concentrated financial and managerial control exists in emerging economy of Pakistan (Gohar, 2013). Business group formulation is achieved to attain efficient access to the capital market, scarce information and realize market control through diversified business portfolio (Perotti & Gelfer, 2001). These business groups subsidize their sister concerns through intra-group fund transfers, internal party transactions, asset acquisition and help each other to guarantee against loans, stimulating an internal capital market (Zhang & Huang, 2013). Furthermore, business groups affect the economic, regulatory, market and corporate environment which are crucial contributors of firm capital structure decision. According to social structure and political economy approach large business groups are able to influence the policy makers, regulators and politicians to gain contractual, financial and information benefits. Concisely, concentrated group ownership is strategized to decrease the effect of market distortions, resource diversion and create market imperfections keeping others on a disadvantage of resource disparity. Such firm specific environment, strategy and presence of internal capital market are observed to affect the capital structure determinants and financing choice (Leff, 1978).

Bank is an integral part of financial market as a financial intermediary with a prime responsibility to inject the public savings into economy. Involvement of bank and group affiliation leads to the preference of private interests over the economic and public interests demonstrating financial control and privilege of its utilization in same hands (Deb, 2010). Some of the groups in Pakistan are affiliated with banks and vice versa by their ownership patterns. Such relationship amongst borrowing and lending firms is supposed to have serious implications for both parties (Freixas & Rotchet, 1997). In addition to cross subsidization and internal capital market in non-bank affiliated business groups, bank affiliated business group firms under the same pyramidal ownership with shared objectives may enjoy direct and readily access to debt market, low cost of financing, reduced information asymmetries, agency conflicts and financial distress. At the same time lesser monitoring cost and access to valuable information may increase the bank involvement and its significance comparative to non-bank affiliated firms. According to Claessens, Fan and Lang (2006) concentrated group ownership leads to greater (minority and majority shareholders) agency cost, resource diversion and dilution of minority rights leading to concentration of wealth. All these group level factors and bank affiliation of business groups are important determinants of firm's financing decision. Such relationship is in conflict with the standard banking practices and thus creates market impurities, resource inefficiencies and issues of governance (Deb, 2010). Group affiliation and exposure of ownership is not likely and is restricted in different countries of the world like; Steagall Act 1933 of US regulations. Likewise, India does not allow more than 10% bank equity holding by non-financial firm. Pakistan is characterized by the weak corporate regulatory system where fund and non-fund based exposure of commercial bank in non-financial firms and business group is limited up to 50% (State Bank of Pakistan, 2009).

Business group and bank affiliation under the same ownership in presence of weak regulatory environment may seriously affect the capital structure dynamics of bank affiliated group firms. This study is an empirical investigation to assess the effect of

bank and business group affiliated firms on their capital structure determinants comparative to non-bank affiliated group firms.

Earlier studies are only based upon group affiliated business firms. This study segregates the group affiliated firms into two subsamples of non-bank and bank affiliated business firms. As per best of our knowledge this the first study to see the capital structure dynamics of group affiliated firms specifically in relation to bank ownership in Pakistan.

The paper is further organized to have literature review and hypothesis development in upcoming section; third part consists of data and methodology; fourth part presents results and discussion and conclusion, implications, limitations and future research dimensions are covered in the last section.

## Literature Review

Three major theories of capital structure including pecking order theory, agency theory and the tradeoff theory are widely tested involving variants of models in Pakistan. Empirical studies regarding financing decisions of Pakistani firms confirm the support of trade off and pecking order theories (Afza & Hussain, 2011; Sheikh & Wang, 2011; Qureshi & Azid, 2006; Booth et al. 2001).

Business groups subsidize their sister concerns by intra-group fund and profit transfers as well as with the internal party transactions, guarantees against loans and asset acquisition. According to Gohar (2013) business groups in Pakistan have higher level of liquidity and leverage comparative to non-group affiliated firms, and found evidence supporting the presence of cross-subsidization or tunneling effect amongst business groups. Similarly, studies by Chang and Hong (2000); Zhang and Huang (2013) and He et al. (2013) have found evidence regarding internal party transactions and loan guarantee in group affiliated business firms. However, extensive reallocation of funds and use of profitable firms as cash cows is evidenced in bank-led groups of Russia (Perotti & Gelfer, 2001). So, bank affiliated firms are supposed to have greater level of related party transactions and incremental effect of cross subsidization directly affecting the capital structure of affiliated firms.

According to Leff (1976) countries characterized by weak regulatory system have greater market imperfections and group affiliations could decrease the market imperfections and improve the firm performance. Modeling the information and market imperfection problems and its effect on group firm's leverage (Manos, Murinde, & Green, 2007) Manos, Murinde, and Green (2007) observed significantly different decision criteria's supporting the internal capital market argument with higher degree of access to financial markets.

According to theoretical literature firms level of leverage in relation to ownership concentration is decided upon growth opportunities, monitoring cost, risk of bankruptcy and to avoid hostile takeover. The study of Stulz (1988) supported the argument given the level of equity investment. Similarly, Canadian group businesses have higher debt ratios than of non-affiliated firms (King & Santor, 2008). Group affiliated firms may remove information asymmetries, improved access to debt market justifying higher level of leverage (Ghemawat & Khanna, 1998; Dewenter & Warther, 1998). Higher level debt by bank affiliated firms is justified from signalling theory of capital structure as

pessimistic investors consider increasing debt as favourable sign for future progress (Ross, 1977). Conclusively, higher level of debt and lessor monitoring cost and access to valuable information increase the bank involvement and its significance comparative to non-bank affiliated firms.

According to agency theory, conflict of interest between shareholders and managers is an important determinant of firm source of financing. Depending upon the level of control and managerial capability studies regarding group or family control states that it may or may not mitigate agency conflict (Anderson & Reeb, 2003; Faccio, Lang, & Young, 2001). However, In case of bank and business group affiliation common stake serving by bank and its affiliated firms reduce the friction of agency conflict (Gul, 1999). Seemingly, because of presence of bank intermediation and mitigated agency conflict firm could be at a point of indifference between the choice of debt and equity.

Secondly, the conflict of interest between minority and majority shareholders is of vital consideration in group affiliated firms. Pyramidal control may lead to higher agency problems by diverting value from minority shareholders (Claessens et al., 2006). Likewise, Ciamarra (2012) suggested that presence of bank in ownership stakes increase the level of debt, resource misappropriation and decrease the debt level sensitivity, cost of borrowing and debt covenants.

According to political economy theory benefit associated to taxibility of debt and trade off-theory of capital structure becomes irrelevant when business groups gains political affiliations and benefits (Ghemawat & Khanna, 1998). Futhermore, policy distortion theory explains the ability of business groups to influence the policy makers (Ghemawat & Khanna, 1998). The similar evidence are observed by (Ghani, Haroon, & Ashraf, 2011).

Futhermore, Shyu (2013) states that overall group characteristics are important in capital structure decisions than of non-affiliated firms. Overall characteristics includes the diversification strategy and its affiliation with financial institutions. Complex group environment composed of diversified business portfolios particularly direct relationship with financial institutions is partially explained by the existing capital structure theories (Margaritis, 2010). The reduced information asymmetries, increased access to external capital market by accessing the policy makers and internal capital market has serious implications for pecking order theory of capital structure. Secondly, trade-off theory loose its importance because of alternative tax shield through internal party transactions and utilization of plitical influence (Manos, 2007). Third main theory regarding agency conflict also have serious implications because of common stake serving by both debtholder and major shareholder or because of concentrated financial and mangerial ownership (Gul, 1999).

Above discussion implies that group affiliation in general have implications on existing capital structure theories. Bank affiliated firms having readily and direct access to debt market with common objectives in presence of weak regulatory system also have further implication for traditional theories of capital sturcture. However, Earlier studies are only based upon group affiliated business firms. This study seggregates the group affiliated firms into two subsamples of non-bank and bank affiliated business firms.

## Firm specific determinants of capital structure and hypothesis development

Table 1- Brief comparison of capital structure determinants and their relation to firm leverage

Variables	Theoretical relation	Empirical relation	Expected sign for bank affiliated firms	Theories and proxy indicators
Liquidity	-	-	-	Agency theory: agency cost of debt, Trade-off theory; financial distress and business risk
Profitability	-	-	-	Trade-off theory. Pecking order theory; bankruptcy costs
Growth Opportunity	-/+	-	-	Agency theory: agency cost of debt. Trade-off theory: financial distress / Signalling theory: Pecking order theory
Firm size	+/-	-	-	Agency theory: agency cost of debt. Trade off theory: bankruptcy costs and tax. / Information asymmetry Other theories: Political Economy theory and Policy distortion theory
Tangibility	+	+	-	Trade-off theory: financial distress and business risk. Agency theory: agency cost of debt
Non-debt tax shield	-	-	+	Trade off theory: tax Other theories: Political Economy theory, Policy distortion theory and theory of social structure
Operating Risk/Earning Volatility	-/+	-	+	Trade-off theory: financial distress / Agency theory

Firm leverage has been an extensive area of empirical investigation beginning from the seminal work of (Modigliani & Miller, 1958). Subsequently, studies have been conducted on extensive level giving birth to static trade-off, information asymmetry, pecking order, signalling, agency cost, free cash flow, dynamic trade-off and market timing theories of firms capital structure (Ahmadinia, Afrasiabishani, & Hesami, 2012). According to (Harris & Raviv, 1991) measure of leverage is of significant importance from interpretation of response and determinant point of view. We are using market based measure of debt to equity to incorporate the effect of firm value against the value of debt as used by (Zhang, 2013). Table 1 elaborates the theories of capital structure and their expected theoretical and mostly reported empirical relation with firm leverage as provided by (Deesomasak, Paudyal, & Pescetto, 2004).

According to agency theory of Jensen and Meckling (1976) *liquidity* motivates managers to overlook the ultimate firm goals giving a rise to an agency conflict amongst shareholders and debtholders. Whereas, pecking order theory propose that firms with higher liquid assets tend to rely more on their internal resources and are less inclined towards borrowing (Booth et al. 2001). Table 1 reports the theoretical and empirically varified negative relation of liquidity and leverage. Bank affiliations are considered to reduce liquidity constraints, the level of agency conflict and financial distress, postulating less dependence on liquidity and negative relationship with firm leverage.

Regarding *firm size* Harris (1991) states that larger firms tend to have higher debts because of their lower bankruptcy risk, lower monitoring cost and to avail tax benefit. Whereas, greater information asymmetries affect firm financing decision adversely (Baert, 2009). The postulated positive relationship amongst bank affiliated firms is supposed to be of lesser importance because of internal affiliation with the lender and lower cost of information collection, easy access to debt market and direct monitoring by the bank. On the other hand, group affiliated firms have centralized ownership pattern postulating firm size to be negatively associated with leverage.

In case of higher *growth opportunities* higher agency cost lead firms to use internal resources or equity than of debt financing (Jensen & Meckling, 1976). According to Myers and Majluf (1984) firms pursuing growth objectives are tend to have higher amount of debt as a positive signal to investors. Later, Kester (1986) confirmed the findings of signalling effect in association with lending and industry group compositions. In case of bank affiliated growing firm seem to be indifferent reasoned by the presence of centrally controlled ownership of both equity and debtholder or interlocking directorships (Gul, 1999). For bank affiliated firms we postulate a negative relationship amongst growth and leverage.

*Tangibility* is reported to have positive relationship with leverage (He et al., 2013). In case of group affiliated firm higher tangibility allow firms to guarantee each other for possible acquisition of debt (Zhang & Huang, 2013). Higher liquidation value is considered to be collateral for secured debts from lenders point of view (Titman & Wessels, 1988). In presence of strong bank affiliation collateral value of firm tangible assets may not play a significant role to acquire debt financing. In case of bank affiliated group firms we postulate negative association between tangibility and firm choice of leverage based upon the argument of internal capital market to avoid greater bankruptcy risk.

According to Table 1 *Profitability* is hypothesised to have negative relationship with leverage as per earlier theoretical and empirical studies (Titman & Wessels, 1988). Pecking order theory argues that higher profits are the reasons of negative debt requirements as firms tend to use their internally generated funds first and then move for outsider financing. Recent studies of Booth et al. (2001); Margaritis and Psillaki (2010) confirmed the earlier findings. However, group affiliations may be characterized by the element of misappropriation of wealth and conflict amongs majority and minority shareholders. Bank affiliated firms are postulated to respond in the same manner.

*Non-Debt Tax Shield (NDTS)* according to the trade off theory is predicted to have negative association with leverage. Tax benefit associated with debt decrease the cost of financing and depreciation and amortization place an incremental motivation to decrease the cost of financing (Manos et al., 2007). On the other hand, Bradley et al. (1984) has explore positive relationship with firm debt taking ability. Bank affiliated firms may not be more concerned about the cost of debt because of their internal ties with financial institutes and institutional factors of social structure and political economy approach (Gul, 1999). Consequently, we can postulate that such relationship keep the firm on a level of indifference to avail the benefit as substitute of debt based tax shield.

*Operating risk or volatility* is a financial distress indicator expected to negatively affect the firms financing choice of debt. Higher level of debt has its imbeded probability of financial uncertainty and increases the cost of bankruptcy (Jensen & Meckling, 1976). Consequently, higher volatility of earnings inversly affect the firms debt taking ability and decrease the chances to meet the maturing debt commitments. The earlier evidences reveal that firms with higher earning volatility may be supported and subsidized by the group associated firms (Zhang & Huang, 2013). Such a conglomerate of non-financial firms and financial banks would not affect the firm capital structure choices keeping indifferent with increasing or decreasing earning volatility. Consequently, we postulate that bank affiliated firm financing decisions might not take such negative effect of volatility in presence of internal debt market, cross subsidization, market imperfection and concentrated control.

## Data and Methodology

We seek to determine the effect of bank and business group affiliation and its effect on the capital structure determinants. The data for this study is obtained primarily from a publicly available database maintained by Securities & Exchange Commission of Pakistan (SECP), Karachi Stock Exchange (KSE) and SBP, regarding financials of KSE listed firms from 2006 to 2001 for Pakistani listed firms. Our sample consists of 146 group affiliated companies which is further divided into two subsamples. First subsample consists of 92 non-bank affiliated group firms which are obtained from earlier research and confirmed from their respective group websites. Second subsample consists of 54 bank affiliated group firms, manually obtained and confirmed from their group websites and the book "Who Owns Pakistan". According to our study there are 9 bank affiliated business groups in Pakistan. Only non-financial affiliated firms are part of our sample. Mudaraba company affiliated groups are not the part of our bank-affiliated firms.

Variables	Definition
DeE (Dependent)	Leverage: Total liabilities/market value of equity
LnTA	Size: Natural logarithm of the total assets
ProF	Profitability: EBIT/total assets
OpeR	Operating Leverage or SD of EBIT/total Assets
GrO	Growth Opportunity: Annual growth rate of the total assets
LiQ	Liquidity: Current Ratio
TanG	Tangibility: Net fixed Assets to Total Assets
NDTS	Non-Debt Tax Shield: Depreciation and Amortization /Total Assets
BaG	Bank Affiliation: Dummy 1 for bank-affiliated and 0 for non-bank affiliated business group

Our sample size represent 82% of the overall group affiliated firms of Pakistan. Group bank affiliation is measured and defined based on pyramidal ownership structure, cross directorship confirmed manually from their annual reports. We have used a dummy of 1 for bank affiliated groups and 0 for non-bank affiliated group firms. The following firm specific characteristics are used to proxy the capital sturcture determinants. According to nature of data (longitudinal data set) consisting of a list of companies for set of year based observations panel data regression analysis is most suitable. Panel regression is divided into two parts fixed and random effect regression models. According to Hausman Specification Test value of (chi-sq = 871.64) we accept our null hypothesis claiming that random effect exists and have determined the random effect panel data regression model appropriately measuring our data characteristics. Our econometric model is based upon panel data random effect GLS regression model used to test the capital structure dynamics, of bank and non-bank affiliated business groups.

Our panel data random effect regression Model is:

$$DeE = \beta_0 + \beta_1(LnTA) + \beta_2(ProF) + \beta_3(TanG) + \beta_4(GrO) + \beta_5(NDTS) + \beta_6(LiQ) + \beta_7(OpeR) + \beta_8(BaG) + \alpha_i$$

## Results and Discussion

### Descriptive Statistics

Table 2 shows descriptive statistics which mainly accounts for values of mean and standard deviation of dependent variable DeE and independent variables LnTA, TanG,

ProF, GrO, OpeR and LiQ for overall group affiliated, non-bank affiliated and non-bank affiliated firms in Tire I, II and III respectively. Our statistical analysis show mean value of debt to equity 1.68 for bank affiliated group firms comparative to 1.71 and 1.78 for non-bank and overall affiliated firms. Log value of total assets proxied for firm size shows a diverse size of firms from the mean value of 14.816m ranging from minimum to maximum value. The results show even stronger assessment on the basis of maximum value comparison of our subsamples.

Table 2- Descriptive Statistics

Tire I Overall Group Affiliated Firms								
Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Observations
DeE	1.711	1.680	79.280	-76.820	5.733	-1.528	94.006	874
LiQ	1.317	0.970	15.360	-0.287	1.478	4.529	29.199	874
LnTA	14.816	14.816	19.025	3.664	1.660	-1.516	13.239	874
GrO	139.437	117.513	1031.100	0.029	85.454	4.718	38.894	874
TanG	48.687	49.215	97.151	1.760	21.513	-0.107	2.502	874
NDTS	3.358	3.071	54.648	0.943	2.711	9.570	163.376	874
OpeR	5.652	3.197	92.468	0.243	7.987	5.529	51.172	874
ProF	34.348	2.544	780.400	-412.821	941.662	29.478	870.635	874
Tire II Bank Affiliated Group Firms								
Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Mean Comparison t-statistic		Observations
DeE	1.681	1.630	28.080	-52.800	4.890	-0.190*		324
LiQ	1.478	0.895	15.360	0.040	1.900	-3.031		324
LnTA	15.033	14.908	18.023	12.429	1.388	-3.580		324
GrO	128.694	115.213	427.075	29.401	55.274	-1.668		324
TanG	48.672	48.130	95.848	1.760	19.461	3.928		324
NDTS	3.500	3.240	24.606	0.943	2.042	0.718*		324
OpeR	5.586	3.233	81.160	0.429	8.096	-0.810*		324
ProF	2.905	1.539	108.163	-50.597	13.757	0.956*		324
Tire III Non-Bank Affiliated Group Firms								
Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Mean Comparison t-statistic		Observations
DeE	1.729	1.680	79.280	-76.820	6.181	-0.190*		550
LiQ	1.221	0.990	10.550	-0.287	1.150	-3.031		550
LnTA	14.688	14.789	19.025	3.664	1.790	-3.580		550
GrO	145.766	119.779	1031.100	0.029	98.521	-1.668		550
TanG	48.696	49.693	97.151	4.356	22.652	3.928		550
NDTS	3.275	2.921	54.648	0.969	3.035	0.718*		550
OpeR	5.691	3.102	92.468	0.243	7.930	-0.810*		550
ProF	52.871	2.873	780.400	-412.821	187.014	0.956*		550

\*Mean comparison of bank and non-bank affiliated firms are not equal at 95% confidence interval

We can observe that bank affiliated firms use lower amount of debt as compared to non-bank affiliated firms. Bank affiliated groups show higher level of liquidity, growth opportunities and size but lower level of profits than of all other group affiliated firms. However, growth, profitability, and tangibility show higher level deviation from mean values across all samples. According to mean comparison of bank and non-bank affiliated firms t-statistics, DeE, NDTs, OpeR and ProF are having significantly different mean values. Drawing from our statistical analysis we have found that bank affiliated firms use less amount of debt comparative to non-bank affiliated firms with higher level of liquidity indicating lower liquidity problem and financial distress. However, significantly different level of mean value of profitability of bank and non-bank affiliated firms may be explained by the argument of misappropriation of wealth amongst majority over minority shareholders. However, bank affiliated firms confront lower amount of earning volatility comparative to non-bank affiliated firms indicating lower cost of bankruptcy. Conclusively, our descriptive statistical analysis signifies the study of bank and non-affiliated firms separately for the firms capital structure determinants.

## Regression Results and Discussion

Analysis is divided in three parts based on our sample of overall group affiliated and sub samples of non-bank affiliated and bank affiliated firms. Table II presents cross sectional panel data analysis consisting parameter estimates (test statistics) showing significant but inconsistent results across subsamples of non-bank and bank affiliated business groups. F-statistics demonstrates significantly good fitness of panel data random effect regression models. As per column 3 our t-statistics of (2.20) demonstrate that bank affiliation is significantly related with the firm's choice of financing. Internal association, centrally controlled and cross ownership thus have significant affect on the firms capital structure determination decisions and motivate to keep lower level of debt comparative to equity financing.

From agency theory point of view higher level of debt restrains the managerial discretion and help to mitigate the agency conflict. Furthermore, joint ownership of banks and non-banking institutions affects the role of bank intermediation comparative to stand alone banks leading to market imperfection positively affecting its affiliated firms. Affiliated banks would have direct control, less information cost with an added advantage of direct financial market access for the affiliated firms.

Liquidity exhibits consistent results over all subsample with the postulated negative association with firm choice of debt financing. As per pecking order theory firms with higher level of liquidity first employ their internal resources to restrict managerial discretion. As per coefficient statistics (-0.668) bank affiliated group firms are evident to be less dependent on liquidity level as of other subsamples. Ownership interlocking and relationship with bank are not neglectable factors to understand our results. Thus, regression results provide clear support to our postulation that bank affiliated firms have less dependence on level of liquidity.

As observed from Table 3, column 1 and 2 overall and non-bank affiliated firms have tendency to increase their level of debt with the increase in growth opportunities. Column 3 shows negative and highly statistically significant association of between growth and firm choice of debt. In accordance to agency theory our results show that

bank affiliated firms have lesser cost of debt. The argument of lower financial distress compared to non-bank affiliated group firms is justifiable in light of trade-off theory of capital structure. So hypothesis of bank affiliated growing firm seems to be indifferent reasoned by the presence of centrally controlled ownership of both equity and debtholder or interlocking directorships is falsified. However, our results are in accordance with the trade-off theory.

Firm size show consistent negative and highly significant relationship with leverage across overall and subsamples. Contrary to others bank affiliated firms show lower (-0.1176) dependence on size in choice of capital structure.

Table 3- Random Effect Panel Data Analysis

Variables	Non-Bank		
	Overall 1	Affiliated Groups 2	Bank Affiliated Groups 3
Bank Affiliated	-	-	2.590582*** (2.76)
Liquidity	4306*** (-18.18)	-1.4488*** (-24.36)	-0.66812*** (-24.99)
Size	3170*** (-2.82)	-0.39016*** (-3.07)	-0.11759*** (-3.2)
Growth	1708*** (4.05)	0.12756*** (2.7)	-0.45871*** (-4.99)
Tangibility	0.0084 (0.04)	-0.35871** (-1.57)	-0.0159 (-0.06)
Tax Shield	0.6204 (0.55)	-0.2741 (-0.86)	0.68097 (0.27)
Operating Risk	1185*** (3.90)	-0.47568 (-0.78)	0.61334*** (4.58)
Profitability	0943*** (-4.88)	-0.12010*** (-7.33)	-0.16500*** (-9.67)
Constant	7174*** (5.47)	4.5653*** (9.48)	4.76195*** (8.17)
R-sq	0.5378***	0.5144***	0.4879***
Chi-Sq	407.98		379.27

\*Significant at 10% level

\*\*Significant at 5% level

\*\*\*Significant at 1% level

Moreover, the negative coefficient sign could possibly be explained based by the argument that larger firm size with bank affiliation decrease the cost of information and bankruptcy. Our descriptive analysis bank affiliated firms are larger in size compared to

non-bank affiliated firms. Furthermore, according to policy distortion theory it is also argued that large firms have the ability to influence the policy makers (Gul, 1999). So, we can say that large bank affiliated firms show reduced information asymmetries and lower cost of bankruptcy having direct association with lending institute.

Presented in column 2 of table 3 non-bank affiliated firms are observed to have higher and significant dependence on the tangibility. According to both agency and trade-off theory of capital structure firms level of leverage increase with the level of asset tangibility. But the negative and significant relationship is observed for non-bank affiliated group firms supporting the presence of internal fund transfers and cross subsidization. However, bank affiliated firms show negative and insignificant dependence of capital structure on firm asset tangibility. Such relationship depicts that bank affiliated firm financing decision does not depend upon the asset tangibility. Accepting our hypothesis that bank affiliated firms capital structure choice seem to be indifferent with the level of tangible assets because of multiple effects of industry group relations and lending group association. Our results signifies that firm leverage decision is not affected by the level of tangible assets in presence of bank affiliation but are important for non-bank affiliated business groups.

Group affiliated firms financing choice is observed to have insignificant relationship with non-debt tax shield. Non-bank affiliated group firms demonstrate  $-0.2741(-0.86)$  negative and theoretically justified relationship. On the other hand, bank affiliated firms show positive and insignificant  $0.680(.27)$  relationship between tax shield and leverage. According to political economy theory large group firms can access the political authorities to gain certain benefits. So, in light of political economy theory and our test statistics bank affiliated group firms seem to be less concerned about utilization of tax benefits from depreciation and amortization. Based on above grounds we accept our hypothesis that bank affiliated firm leverage decision is not affected based upon the non-debt tax shield.

Firms with higher earning volatility have higher operating risk preventing firm to take further debt. However, according to agency theory higher level of debt may mitigate the cost of agency between shareholders and managers. Our findings regarding non-bank affiliated firms show negative but insignificant relationship between operating risk and leverage having higher level of debt than of bank affiliated group firms. . However, non-bank affiliated firms insignificance to earning volatility and leverage decision is an indication of cross-subsidization. On the contrary, bank affiliated firms have significantly different situation based on estimated value of  $0.6809(4.58)$  showing highly significant and positive relationship. Such relationship depicts that bank affiliated firm financing decision is affected by financial distress but the retained level of debt is there to mitigate the agency conflict. Furthermore, in particular scenario of bank affiliated firms concentrated ownership and common stake serving justify the positively significant relationship of operating risk and choice of leverage according to agency theory. So, for bank affiliated firms we accept our hypothesis that earning volatility is positively associated with firm leverage.

Profitable firms are considered to use internal funds avoiding higher levels of debt having a firewall against the potential cost of bankruptcy. According to our descriptive statistics bank affiliated firms show lower level of profitability compared to non-bank affiliated firms. Whereas, our regression results show highly significant relationship between firm

profitability and leverage across all subsamples. In particular case of bank affiliated firms lower level of profits with highly significant association with debt reveals that concentrated control and reallocation of funds keep minorities on a disadvantage. Such situation favors our argument that bank affiliated firms are characterized by resource misappropriation, giving rise to conflict of interest between major and minority shareholders.

## Multiple Regression Analysis

To analyse the association of our proxied variable for bank affiliation (BaG), amongst leverage and capital structure determinants, we have regressed independent variables individually and jointly. Table 3 demonstrate nine regression models to assess the joint association of bank affiliation and liquidity, size, growth, tangibility, tax shield and operating risk on uni-veriate basis. Our results reveal that group-bank affiliation is positively and statistically associated with the firm leverage. According to value of calculated test statistics growth, size and profitability are not significantly related with leverage regressed in combination of group-bank affiliation. So, our earlier results are confirmed regarding the association of bank for the firm capital structure determinants.

Table 4- Significance of Bank Affiliation and Individual Predictor with Leverage

Multiple Regression Analysis									
Variables	1	2	3	4	5	6	7	8	9
Bank Affiliated	1.1269*** (8.29)	1.5424*** (14.97)	2.7442*** (2.37)	1.2488*** (7.45)	0.7865*** (3.84)	0.7747*** (5.09)	1.0562*** (7.64)	1.0833*** (7.77)	2.5905*** (2.76)
Liquidity		-0.2810*** (-11.52)							0.3208*** (-12.77)
Size			-0.1075* (-1.4)						-0.06588 (-1.04)
Growth				-0.0009* (-1.2)					0.00167** (-1.87)
Tangibility					0.0070** (2.18)				0.0040* (1.32)
Tax Sheild						0.1005*** (4.96)			0.0734*** (3.34)
Operating Risk							0.0702*** (2.91)		0.1151*** (4.34)
Profitability								0.0153 (1.07)	0.02693** (-1.76)
Constant	1.200898 (22.25)***	2.30294 (9.98)***	0.204432 (0.3)	0.757916 (5.63)***	1.274178 (7.39)***	1.309626 (10.35)***	1.248911 (10.27)***	1.490125 (11.85)***	3.589787 (5.8)***
Chi-Sq	68.68	0.3331	71.24	73	76.56	94.68	77	72.44	379.27
R-Sq	0	269.05	0.0129	0.0516	0.0526	0.0244	0.0075	0.0516	0.4879
*Significant at 10% level			**Significant at 5% level			***Significant at 1% level			

## Conclusion

Motivated by integration of bank intermediation role and business group affiliated firm dynamics we seek to determine the effect of such relationship on the firm's financing decisions. As per the best of our knowledge this is the pioneer empirical investigation in Pakistan to extend the literature of capital structure in this dimension. Random effect panel regression is used on the manually extracted data set of listed bank and non-bank affiliated firms of Pakistan for the year 2006-2011. We have found that bank affiliated firms financing decisions are significantly different from that of non-bank affiliated firms with a common factor of internal capital market. Moreover, bank affiliated firms are larger in size, having lower level of debt, profitability and risk with an added advantage of direct and readily access to capital market. Bank affiliated firm capital structure determinants of growth, asset tangibility, non-debt tax shield and operating risk show significantly different association with choice of leverage compared to non-bank affiliated firms. Group affiliated firms are determined to have implications of political and policy influence on their financing choice by removing market distortions, keeping others on a disadvantage. Furthermore, bank affiliated group are found to have agency conflict between shareholders and management as well as conflict of interest between major and minority shareholders.

## Policy Implications

The study provide empirical evidence about the market imperfections, and ability of larger groups to mitigate the effect of market distortions keeping their personal interests ahead of general public interest. Policy makers are supposed to formulate and strengthen the regulatory system to mitigate the effect of such market imperfections.

## Limitations

We had a limitation of limited firm year observations and time whereas, a more detailed time series analysis would have helped to understand the gravity of issue.

## Future Research

There is need to further study this issue by incorporating the multiple leverage measures on the overall firm value. Country wise cross sectional study with the similar regulatory environment would be novel addition to the literature. Level of group-firm affiliation and regulatory developments over the years and its impact on firm leverage choice are of important empirical consideration.

## Bibliography

Afza, T., & Hussain, A. (2011). Determinants of Capital Structure across Selected Manufacturing Sectors of Pakistan. *International Journal of Humanities and Social Science*, 1 (12), 254-262.

- Ahmadinia, H., Afrasiabishani, J., & Hesami, E. (2012). A Comprehensive Review on Capital Structure Theories. *The Romanian Economic Journal* , 15 (45), 3-26.
- Almeida, H. V., & Wolfenzon, D. (2006). A Theory of Pyramidal Ownership and Family Business Groups. *The Journal of Finance* , 61 (6), 2637-2680.
- Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: Evidence from the S&P500. *Journal of Finance* , 58 (3), 1301–1328.
- Baert, L., & Vennet, R. V. (2009). *Bank Ownership, Firm Value and Firm Capital Structure in Europe*. Socio-economic Sciences and Humanities, European Commission Working Paper D.2.2. FINES.
- Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital Structures in Developing Countries. *Journal of Finance* , 56 (1), 87-130.
- Byun, H.-Y., Choi, S., Hwang, L.-S., & Kim, R. G. (2013). Business group affiliation, ownership structure, and the cost of debt. *Journal of Corporate Finance* , 23, 311-331.
- Chang, S. J., & Hong, J. (2000). Economic performance of group affiliated companies in Korea: Intragroup resource sharing and internal business transactions. *Academy of Management Journal* , 43 (3), 429–448.
- Chen, C. N., & Chu, W. (2012). Diversification, resource concentration, and business group performance: Evidence from Taiwan. *Asia Pacific Journal of Management* , 29, 1045-1061.
- Ciamarra, E. S. (2012). Monitoring by Affiliated Bankers on Board of Directors: Evidence from Corporate Financing Outcomes. *Financial Management* , 665-702.
- Claessens, S., Fan, J., & Lang, L. (2006). The benefits and costs of group affiliation: evidence from East Asia. *Emerging Markets Review* , 7 (1), 1-26.
- Deb, A. T. (2010). Business Group Ownership of Banks: Issues and Implications. *IEG Working Paper No. 308* .
- Deesomasak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: evidence from Asia Pacific region. *Journal of Multinational Financial Management* , 14, 387-405.
- Dewenter, K. L., & Warther, V. A. (1998). Dividends, asymmetric information, and agency conflicts: Evidence from a comparison of the dividend policies of Japanese and U.S. firms. *Journal of Finance* , 53 (3), 879–904.
- Faccio, M., Lang, L. H., & Young, L. (2001). Dividends and expropriation. *American Economic Review* , 9 (1), 54–78.
- Freixas, X., & Rochet, J. (1997). *Microeconomics of Banking, Massachusetts*. The MIT Press.
- Ghani, I. W., Haroon, U., & Ashraf, J. (2011). Business Groups Financial Performance: Evidence from Pakistan. *Global Journal of Business Research* , 5 (2).
- Ghemawat, P., & Khanna, T. (1998). The nature of diversified business groups: A research design and two case studies. *The Journal of Industrial Economics* , 46 (1), 35–61.
- Gohar, R. (2013). Cross Subsidization and its Effect on Pakistani Business Group's Affiliated Firm Performance. *Journal of Applied Finance & Banking* , 3 (3), 207-217.
- Gul, F. A. (1999). Growth opportunities, capital structure and dividend policies in Japan. *Journal of Corporate Finance* , 5 (2), 141–168.
- Harris, M., & Raviv, A. (1991). The Theory of Capital Structure. *The Journal of Finance* , 46 (1), 297-355.

- He, J., Mao, X., Rui, O. M., & Zha, X. (2013). Business groups in China. *Journal of Corporate Finance* , 22, 166-192.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* , 3 (4), 305-360.
- Kester, W. C. (1986). Capital and Ownership Structure: A Comparison of United States and Japanese Manufacturing Corporations. *Financial Management* , 15 (1), 5-16.
- King, M. R., & Santor, E. (2008). Family values: Ownership structure, performance and capital structure of Canadian firms. *Journal of Banking and Finance* , 32, 2423-2432.
- Leff, N. (1976). Capital markets in the less developed countries: the group principle. In *Money and Finance in Economic Growth and Development* (McKinnon, R. ed.). New York: Marcel Dekker.
- Leff, N. H. (1978). Industrial Organization and Entrepreneurship in Developing Countries: The Economic Groups. *Economic Development and Cultural Change* , 26 (4), 661.
- Manos, R., Murinde, V., & Green, C. J. (2007). Leverage and business groups: Evidence from Indian Firms. *Journal of Economics and Business* , 59, 443-465.
- Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance* , 34, 621-632.
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review* , 48 (3), 261-297.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* , 13 (2), 187-221.
- Perotti, E. C., & Gelfer, S. (2001). Red barons or robber barons? Governance and investment in Russian financial-industrial groups. *European Economic Review* , 45 (9), 1601-1617.
- Qureshi, M. A., & Azid, T. (2006). Did They Do It Differently? Capital Structure Choices of Public and Private Sectors in Pakistan. *The Pakistan Development Review* , 45 (4), 701-709.
- Ross, S. (1977). The determination of financial structure: the incentive-signaling approach. *Bell Journal of Economics*, Vol. 8 No. 1, pp. 209-43. , 8 (1), 209-43.
- Sheikh, N. A., & Wang, Z. (2011). Determinants of capital structure An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance* , 37 (2), 117-133.
- Shyu, J. (2013). Ownership structure, capital structure and performance of group affiliation: Evidence for Taiwanese group affiliated firms. *Managerial Finance* , 39 (4), 404-420.
- State Bank of Pakistan. (2009). *Prudential Regulations for Corporate/Commercial Banking* . Bank Policy and Regulation Department.
- Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance* , 43 (1), 1-19.
- Vennet, R. V. (2009). Bank ownership, firm value and firm capital structure in Europe. *FINESS Seventh Framework Programme: Working paper D.2.2* .
- Zhang, T., & Huang, J. (2013). The value of group affiliation: evidence from 2008 financial crisis. *International Journal of Managerial Finance* , 9 (4), 332-350.