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## **What Determines Payment Methods and Deal Amount in Corporate Merger and Acquisitions in Pakistan**

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**PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS**

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## ABSTRACT

The present study examines the determinants of payment mode choice and deal amounts in financial and nonfinancial sectors mergers and acquisitions (M&A) in Pakistan, undertaken during period 2005–2012. The results of nonfinancial sector show a negative and linear relation between managerial ownership and cash financing that supports the risk reduction hypothesis. The bidder firm's financial variables and target firm listing status are also proved to be significant determinants of payment mode. The results of deal price determinants in nonfinancial sector reveal the reduction of agency conflicts in bidder firms and show that main motive behind M&A deals is to achieve a big size and prestige rather than value maximisation. The financial sector results show that ownership structure has no significant impact on payment mode choice in Pakistan M&A. However, bidder firm's cash availability and growth opportunities and target firm characteristics are significant determinant of payment method. The deal price determinants findings show that prices are high in stock financed deals due to signalling impact of stock issuance and basic motive of bidders behind M&A is to acquire a big size in case of financial sector.

*Keywords:* Mergers and Acquisitions; Mode of Payment; Deal Amounts; Ownership Structure; Bidder Financial Characteristics; Target Characteristics

## 1. INTRODUCTION

Mergers and Acquisitions (M&A) are increasingly being used to respond to growing world competition, expansion of global business markets and survival of business firms. Companies around the world are aggressively improving and developing their competence, capabilities and skills by employing the tool of M&A to remain competitive and diversify their business portfolios to increase their profitability. Many top executives and CEOs affirm that “*the bigger is better*” which simply implies higher status, prestige, power and increase in compensation level. Quite often the M&A factor is forgotten for its role in this growth.

Mergers are defined as “Two or more firms’ combination, generally by offering bidding firm’s shares to the stockholders of target firm in exchange of surrender of their own stock”. Simply stated, merger is defined as a combination of more than one distinct entity into one company and the motive behind it is to avail a number of benefits, not just to accumulate the liabilities and assets of two entities. Some of these benefits include economies of scale, economies of scope, access to new technologies, sectors and markets. Acquisitions are defined as “the purchase by one firm of controlling interest in the share capital, or all or substantially all of the assets and/or liabilities, of another company”. Based on the bidder firm’s approach, an acquisition may be hostile or friendly, and can be affected by agreements between the target firm’s majority shareholders and the bidder firm. It can also be affected by acquisition of shares in open markets or by making offers to the whole body of the target firm’s shareholders for purchase of shares [Reddy, Swetha, and Srinivasarao (2012)].

Mergers and acquisitions are major events in the life of a firm. A number of studies have been done to explain this phenomenon. Major studies conducted on the motivation behind merger and acquisitions deals in the late 1970s focussed on issues like market power hypothesis; hubris hypothesis; economy of scale and scope; managerial hypothesis; short and long term performance of bidder and target, merger waves, and choice of mode of payment [Chevalier and Redor (2008)].

The choice of payment mode in merger and acquisition deals has been a subject of a number of previous studies and empirical researches which have focused on developed economies. But there is no research which considers this

issue in a developing economy like Pakistan. So the motivation behind the present study is to examine this issue with reference to Pakistan. Many models and theories related to the payment mode in M&A deals have been developed in the past. One of them is the asymmetric information theory which represents this disequilibrium between the insiders (i.e. managers) and outside parties regarding the company's stock value and available opportunities of investment. Another group of theories deal with control of insiders i.e. managers by outside shareholders. The outside shareholders who own a small part of a company's shares cannot control the managers' actions because of the cost of time and money involved. However, investors owning large number of shares are able to control insiders' actions i.e., they can monitor their investment and financing decisions. Since outsiders cannot evaluate the stock payment to finance the merger deal, the firm's shareholders force the managers to finance the deal amounts in cash rather than stock to avoid the negative impact on the firm's stock valuation [Chevalier and Redor (2008)].

Other studies have examined the impact of the acquirer ownership variables on capital structure decisions of the firm. The focus of these studies is at two opposite hypotheses that explore the relationship between insiders' ultimate control and leverage of the firm [Anderson, Mansi, and Reeb (2003); King and Santor (2008); Ellul (2009); Andre and Amar (2009)]. The first theory is related to risk-reduction motivation which suggests that shareholders of a controlling group will hesitate to use debt as a mode of financing because such leverage increases a firm's risk of bankruptcy, given the undiversified nature of the firm's portfolios and the significant amount that is invested in a group of firms. In comparison, the control motivation theory implies that inside blockholders are more likely to use debt rather than stock as a mode of financing in order to avoid dilution of their control in the firm and also to retain the private incentives associated with it. However, the results of studies are mixed regarding the relationship between managerial ownership and debt financing.

Previous empirical literature suggests that the bidder firm's financial variables also impact the mode of payment. According to Jenson (1986) bidding firms with large amounts of free cash and with sufficient capacity of debt are likely to undertake cash acquisition rather than payments in the form of stock. Other studies [Chaney, Lovata, and Philipich (1991); Martin (1996); Chang and Mais (2000); Faccio and Masulis (2005); Andre and Amar (2009)] consider the impact of the bidder and target firm's characteristic on the mode of payment used to finance the deal. The financial characteristics of the bidder include cash availability, collateral, leverage and the bidder's profitability. Some studies also consider the target firm's characteristics as a determinant of the mode of payment in mergers acquisitions. There are other studies which examine the determinants of the premium paid for mergers and acquisition deals in developed markets. These studies [Diaz and Azofra (2009); Dionne, *et al.*



(2010)] consider the bidder and target firm's characteristics as determinant of deal premiums and include the bidder and target firm's profitability, financial strength variables and characteristics of the deal i.e., whether it is financed with cash or through issuance of stock to target etc.

In the light of previous empirical literature, the present study focuses on investigation of the impact of the bidder and target firm characteristics on the mode of payment choice and deal amounts in corporate mergers and acquisitions in Pakistan. The data used in the study includes the mergers and acquisition events from 2005–2012. There are 56 nonfinancial and 48 financial M&A events which have been analysed separately due to fundamental differences between the structures of the two sectors. The results of nonfinancial sector show a negative and linear relation between bidder's managerial ownership and cash payment, which supports the risk reduction hypothesis. The bidder firm's financial and ownership variables also proved to be a significant determinant of the payment mode in the nonfinancial sector. The financial sector results show that ownership and corporate governance variables have no significant influence on the mode of payment in M&A. The other variables which are significant include the bidder's cash availability and market to book value ratio and target firm characteristics. The amounts paid to finance the M&A deals in both sectors, show that most of the bidder and target characteristics are significant determinants and overall the model is significant in both nonfinancial and financial cases.

The present study contributes to existing literature in several ways. Firstly, most of the studies have been conducted in developed economies like US and UK which have dispersed ownership structures and where most of the firms follow "one share, one vote" rule. But most of the countries of Asia and Europe have ownership concentration by individuals, families, governments or industrial groups [Andre and Amar (2009)]. In case of developing economies like Pakistan, mergers and acquisitions have not yet received much attention. The studies regarding the mergers and acquisitions in Pakistan have mostly focused on financial sector and analysed the pre and post-merger performance. Secondly, there is no study dealing with M&A that explores the role of bidder and target firm's characteristics on payment mode choice.. The present study examines Pakistan's corporate sector in this respect. Thirdly, the study adds to previous academic research by examining the determinants of the payment mode choice. Finally, it also examines the determinants of amounts paid in M&A deals in Pakistan.

The remainder of the study is organised as follows. Section two deals with literature review. The third section deals with sample selection, construction of variables, model development and research methodology in both cases (i.e. mode of payment and deal amount determinants). The fourth section deals with empirical findings and discussion of results. The conclusion, implications of study, and identification of future research areas are discussed in the fifth section.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The issue of corporate mergers and acquisitions is an extensively researched area in developed markets. However, for developing markets like Pakistan, this area has not been seriously investigated. This section reviews the relevant literature divided into different sections and review-based hypotheses.

### 2.1. Mode of Payment in Mergers and Acquisitions

Previous empirical literature has identified a number of factors which explain the financing mode in M&A. Some of these factors are: corporate ownership considerations, bidder's financial variables, investment opportunities, asymmetry of information and sharing of risk between the bidder and the target firms as well as their other characteristics.

#### 2.1.1. Bidder Firm Characteristics

##### *Managerial Ownership Hypothesis*

The theory of management control documented by Harris and Raviv (1988) and Stulz (1988) reveals that managers are hesitant to lose their control in firms and prefer to use cash as a payment mode to finance mergers and acquisitions. Previous studies [Amihud, *et al.* (1990); Martin (1996), Ghosh and Ruland (1998); Yook, *et al.* (1999); Faccio and Masulis (2005); Andre and Amar (2009)] investigate the relation between corporate ownership considerations and the mode of payment in corporate mergers and acquisitions. Managers' preferences for financing the investments are related with their desire to retain control over the firm transactions. Since stock issuance dilutes the managers' control, they prefer to use debt or internal funds for financing acquisitions in order to retain their control over the acquiring firm and to enjoy the personal incentives attached with it.

Amihud, *et al.* (1990) examined the relation between corporate control considerations and the choice of mode of payment in case of corporate investments and acquisitions. The sample consists of companies that appeared in the Fortune 500 companies' list in 1980 and that acquired other companies during the period 1981 to 1983. The results show that the higher the insiders' ownership in the bidder firm, the higher the chances the deal is financed with cash payments rather than by stock issuance. These findings can also be related to information asymmetry between corporate insiders and outside investors. If insiders hold a significant number of shares which they think are undervalued, they are less willing to issue stock for financing acquisitions.

However, Martin (1996) documents a non-linear relation between managers' ownership and the probability of stock issuance to finance M & A. The results reveal that managers are not concerned about dilution of control rights at the high and low levels of their ownership. But at the intermediate

level, they risk losing control over the firm by stock issuance. By using a logistic regression analysis to examine the choice of mode of payment in corporate acquisitions, it is shown that a significant negative relationship exists between insiders ownership and stock financing over the middle level of ownership (between 5 and 25 percent).

Yook, *et al.* (1999) examine the risk reduction and control motivation hypothesis of managerial control to explain the choice of payment mode and also the reaction of market to stock announcement. Their findings show a significant selling by acquiring firm's management before stock issuance as compared to cash financing. This implies the selling of stock by insiders before stock offerings because that will result in decline of stock prices. Moreover, the results show a significant inverse relationship between pre -stock announcement managerial stock selling and abnormal returns gained by offer in the acquiring firms. On the other side, after controlling for previous insider trades, acquiring firms with large managerial holdings are more likely to use cash offers.

In order to reduce the personal risks, managers sometimes avail the projects that are not value maximising [Jensen and MecMing (1976) and Fama and Jensen (1983)]. Managers who are risk averse and are not fully diversified with firm-specific human capital prefer to issue equity rather than cash to lessen their risk. Such managers have a fixed claim in the company's assets and have benefits in transactions that decrease risk even in cases where these transactions are not in the best interests of the shareholders, essentially in the absence of compensation schemes for managers. May (1995) investigates that in the presence of high level firm specific human capital, the acquiring firm's manager tends to avail acquisitions that decrease equity variance. The results show that the risky firm's managers have private benefits for financing merger deals with share issues in order to decrease their own risk by reducing leverage. So, the hypothesis of risk reduction explored the acquiring firms with high variance of return and found that they are more likely to finance merger deals with stock issues.

The two related empirical studies that look at entrenched managers and at corporate governance and managers' investment policies are those of Berger, Ofek and Yermack (1997) and Litov and John (2006) respectively. Contrary to the control motivation hypothesis, Berger, *et al.* (1997) explored that entrenched managers reduce the use of debt in firms. The finding is also consistent with the risk reduction hypothesis. John and Litov (2006) show that better managed firms have riskier investment and low level of debt as compared to badly managed firms, that focus on safe investment. In this regard, firms with entrenched managers and weak corporate governance mechanism select conservative policies of investment and use more debt.

Brailsford (2002) documents that the relationship between managerial ownership and leverage is nonlinear. The results show a negative relation between managerial ownership and the level of leverage,

which implies that lower level of managerial ownership leads to reduction of agency problems and results in high debt level. On the opposite side, higher level of insiders ownership leads to managerial opportunism and ultimately low debt level.

Faccio and Masulis (2005) examine the determinants of payment mode in M & A by using a sample of European mergers over the period 1997 to 2000. The focus of the study is on the trade-off between acquirer firm's corporate control threats and its financial constraints. Similar to Martin (1996), nonlinear association between bidder firm's largest shareholder voting rights and the percentage of cash used for financing merger deals is tested and results confirm the non-linearity hypothesis in case of UK and Irish acquirers. However, results show a positive relation between concentrated ownership structure and percentage of cash financing in case of continental European bidders. The results show that incentives to select cash as a payment mode are high when bidder firm's major shareholders have medium level of control i.e. 20 to 60 per cent. This is especially the case when the acquired firm has concentrated ownership structure.

Andre and Amar (2009) investigate the relation between the family's ultimate control and choice of payment mode in Canadian M&A undertaken during 1998 to 2004. The authors consider the trade-off between risk reduction and control motivation and the percent of cash offering by bidding firm to finance the M&A deals. The findings reveal a positive relation between family control and percentage of cash financing, which means that the ultimate owners do not want to dilute their control by issuing shares. There exists a negative relation between family use of control enhancing techniques, like pyramids structure and dual class shareholdings, and the likelihood of cash financing. Ellul (2009) documents that control motivation of inside block-holders affects the firm's capital structure decisions. By using panel data of 5975 firms from 38 countries, the results of the study show that family-owned firms have high debt ratios than nonfamily owned firms, institutional shareholders do not influence capital structure decisions, debt in family-owned firms is used as an alternate of other control enhancing techniques, like pyramid and cross shareholding structures.

Study of previous literature shows that the relationship between management ownership and payment mode to finance merger and acquisition deals is mixed. Some studies show a positive relation between cash payment and managerial ownership, which validates the control motivation theory while others support the risk reduction hypothesis. So, we develop our hypothesis that:

**Hypothesis 1a:** *Ceteris paribus, there exists a significant relationship between managerial ownership and percentage of cash to finance the M&A deal.*

**Hypothesis 1b:** *Ceteris paribus, there exists a non-linear relationship between managerial ownership and percentage of cash to finance the M&A deal.*

### ***Outside Monitoring Hypothesis***

According to Jensen (1991) active external shareholders are beneficial for firms for their incentives to perform expensive monitoring functions. Blockholders and institutional investors are instances of possible active shareholders. Black (1992) documents that institutional investors perform functions that more closely line up managerial motives with the firm's investors. For instance, institutional investors and external blockholders are in a position to assist the anti-takeover campaigns, to endorse a suitable management recompense system, reinforce the institutions' opinion on firm's board and perhaps to assist the board itself. Furthermore, some institutional investors directly connect with high-ranking executives and hence can affect the terms and conditions of M&A deals. Meanwhile, empirical substantiation shows that stock financed deals usually decrease the wealth of the bidder firm's investors, so the probability of acquisitions being financed with stocks would be low in presence of institutional and external blockholders.

Martin (1996) explores that high level of institutional and outside block holdings considerably reduce the chances of stock financing, even though block holdings by persons unrelated with management do not significantly affect the payment mode, and consequently support the view that institutions perform as external monitors of management behaviour. Following ineffective control challenges, Denis and Serrano (1996) documents that turnover of management is intense among companies with presence of an outside blockholder. However, managers tend to keep their jobs even with poor performance in firms which have no outside investors. Berger, Ofek, and Yermack (1997) show a positive relationship within the leverage ratio and presence of an outside blockholder, which suggests that managers are required to increase the debt level in the presence of an outside monitor.

Goergen and Renneboog (1999) examine the ownership structure in UK firms. The findings reveal that the ownership structure in UK firms on average is dispersed. Institutional investors represent an important group of shareholders but they follow submissive strategies and do not use their voting rights related to shares. Also, the submissive attitude adopted by institutional investors increases the influence of directors, who are the second group of most important investors. Franks, Mayer and Renneboog (1998) reveals that when firm directors have significant ownership and control, they use their voting rights to embed their positions and can hinder monitoring actions taken by other investors. Further, some corporate governance features in the British system, for example proxy voting and one tier structure of the board, support the discretion of directors. So,

the key agency conflicts arising from disperse structure of ownership represent the possible expropriation of stockholders by the board.

Inside block-holders are not the only group with high motivations for control; institutional block-holders also have a comparatively big stake in a firm's shares which may motivate them for a say in the affairs. Yet, institutional block-holders don't have a long-term existence in a firm, their active involvement in management is limited and their monitoring level is also low. Tufano (1996) documents that institutional shareholders (1) have significant ownership in diverse firms and therefore are diversified (2) they do not play active role in monitoring of a firm's management (3) they have incentive arrangements same as atomistic. According to Karpoff (2001) institutional investors' involvement does not lead to any substantial change in governance of firms. From this it may be concluded that institutional block-holders' motivation for control may not be sufficient to put any effective influence on the capital structure decisions of the firms. Also, because of business relations between institutional shareholders and corporate customers, institutions are not going to vote against their corporate customer's management proposals. According to Matvos and Ostrovsky (2008), institutional shareholders have cross-holdings in both the target and acquiring firm's shares, therefore they vote for mergers even when the bidding firm's interests are not being met.

We have mixed findings with regard to the relationship of institutional shareholding and outside block-holders with the mode of payment used to finance an M&A deal. If the outside investors in the firm play an active monitoring role then the relationship between outside block-holders and percent of cash financing in merger deals is positive, otherwise it is negative. The following hypotheses are developed by studying previous literature:

**Hypothesis 2a:** *Ceteris paribus, there exists a significant relation between institutional ownership and percent of cash used to finance M&A deals.*

**Hypothesis 2b:** *Ceteris paribus, there is a significant relationship between outside block-holder and percent of cash used to finance M&A deals.*

### ***Corporate Governance Variables***

The board of directors in a company is a high level corporate body that is accountable for firm management and its operations. It performs a significant role in capital structure decisions. However, the evidence is mixed regarding the direction of relations between capital structure and board size. According to Berger (1997) firms with large board size usually have low debt ratios. The reason behind it is that a large board stresses upon the management to keep low leverage levels low and improve the performance of company.

In contrast, Wen (2002) documents a positive relation between capital structure and board size. The results reveal that large boards follow a high debt level policy in order to improve the firm's value specifically when they face high monitoring by regulatory establishment. It is also contended that large boards can face difficulty in reaching an agreement which eventually can affect the corporate governance quality leading to high debt level. Anderson (2004) documents that the debt cost is usually low for large boards since creditors find monitoring of these firms to be effective by a varied group of experts. So, financing by use of debt becomes a cost effective tool.

In case of Pakistan, Hasan and Butt (2009) explore the relationship between capital structure and corporate governance of listed firms. The data is collected for 58 randomly chosen nonfinancial companies listed at the Karachi Stock Exchange (KSE) during 2002–2005 and a multivariate regression is used with the firm's fixed effect method. The findings show that board size and managers' ownership have a significant negative relationship with debt level. The results show that corporate governance variables i.e., the board size and managerial shareholding perform a significant role in determining the capital structure of companies. Based on previous empirical literature, we have developed the following hypothesis:

**Hypothesis 2c:** *Ceteris paribus, there is a significant relation between bidder firm's board size and percent of cash payments to finance the deals.*

### **Financial Variables**

The bidder firm financial variables include cash availability, collateral and leverage. Hansen (1987) advances a signalling model that foresees that high level of debt in the bidding company induces payment through stocks. Similarly, higher leverage ratio may indicate that an entity is not able to increase debt level and hence must use stock payments. The alternative option is that a high leverage level afore the merger might imply that the nature of the company's assets back it or the firm's management is inclined towards higher use of debt. Hence in case of high leverage in a firm, the use of stock as a payment mode is low.

Chaney, Lovata and Philipich (1991) examine the link between bidder's characteristics and payment mode in mergers and acquisitions. The analysis uses 35 cash and 88 stock mergers and reveals that bidders that employ cash as a mode of payment in mergers have diverse operating and financial features than those using stocks. The results of the study show that bidder companies with higher ROA (return on assets), high leverage and small size are more likely to use cash as a payment mode. Bidder firms that employ stock payments are large with low debt and ROA ratios.

Other empirical studies [Martin (1996); Chang and Mais (2000); Gregory (2000); Faccio and Masulis (2005); Andre and Amar (2009)] explore the relationship between acquirer's financial position and the mode of payment in mergers and acquisition deals. Bidding firms having large sums of money i.e. cash accessibility, are more likely to finance deals with cash. According to Martin (1996) and Gregory (2000) there is a negative relationship between availability of cash and probability of stock financing. On the other hand, Martin (1996) and Chang and Mais (2000) do not document a significant relation between debt and probability of stock financing.

According to Faccio and Masulis (2005) the borrowing ability of an acquirer firm is related with debt ratio and fixed asset ratio. High leveraged acquirers might have problems in raising and using debt for financing M&A deals. So, high leveraged bidder firms will be inclined to use stocks as a payment mode. The findings show a negative relationship between bidder's debt ratio and cash payments in European M&A deals. The results also show that bidder firms having high value of tangible assets would have an ability to use more debt as payment in M&A deals. Andre and Amar (2009) examined the impact of bidder firm's availability of cash and collateral on mode of payment in mergers and acquisition deals, their results show that positive relationship exists between bidding firm's collateral measured by firm's level of fixed assets and the use of cash as a payment mode.

According to Bruslerie (2011), financial conditions variables (i.e. cash availability, collateral, leverage etc.) were not highly significant in the determination of mode of payment in a sample of 528 European Union merger deals over a period of 2000–2010. The financial variables include limits on leverage use and control structure of the acquirer's shareholders. Generally, acquirer firms have inadequate level of current assets; so, cash financing requires external funds. Alshwer, Sibilkov and Zaiats (2011) examine how financially constrained bidders (firms with greater frictions in raising outside capital) are prone to use more stock financing in acquisition transaction than the bidders that are not constrained in their mode of payment decisions. Further, in stock-swap deals, financially constrained bidders with extraordinary valuation of stock pay high deal payments and capture low level of merger gains as compared to acquirers with low valuation.

The profitability of bidder firms also impact the payment mode choice in M&A deals. Higher profitability may reveal the capability of a firm to benefit from high tax shields from higher level of debt and depreciation thus leading to cash financed merger deals. While there are other tax shields like operating loss carry forwards which are accessible to companies through stock exchange offerings, tax benefits usually will be higher if cash financing is used. The lower the profitability of bidding firm, the less it is expected that the firm will benefit from extra tax shields; hence, stock financing would be favoured [Chaney, Lovata, and Philipich (1991)].



Zhang, Wang, and Jones (2003) examine the hypothesis that the choice of mode of payment in mergers and acquisitions depends on corporate financial characteristics and factors. The hypothesis is tested by using data on UK mergers and acquisition in the 1990s by employing univariate descriptive analysis, discriminant analysis and multinomial logistic regression. The results reveal that the bidder firm's profitability is positively related to cash payments. The return on the equity of the bidder before acquisition announcement—an important determinant—is negatively related to stock issue as a mode of payment. The higher the ROE of the bidder, the more likely firm is using cash in deals given that cash is in hand.

We see that in previous empirical literature, the bidder firm's cash availability, collateral, and leverage is used to capture the financial variables' impact and return on equity and the impact of profitability on payment mode. Based on this review the following hypothesis is developed:

**Hypothesis 3a:** *Ceteris paribus, greater cash availability with bidder firms increases the likelihood of cash used to finance the deal.*

**Hypothesis 3b:** *Ceteris paribus, the more the bidder firm's collateral, the more it is likely to go for cash to finance the deal.*

**Hypothesis 3c:** *Ceteris paribus, the more is the bidder firm's leverage the less likely it is it will use cash to finance the deal.*

**Hypothesis 3d:** *Ceteris paribus, the more profitable the bidder firms are the more likely they would choose cash financed deals.*

### **Growth Opportunities Hypothesis**

Previous academic literature [Martin (1996); Chang and Mais (2000); Zhang, *et al.* (2003); Faccio and Masulis (2005); Andre and Amar (2009)] shows a positive relationship between a bidder firm's investment prospects and probability of payments in stock form. According to Martin (1996) bidding firms with high investment prospects tend to use stock financing in corporate mergers and acquisitions. Stock financing carries low possible restrictions, hence it gives increased flexibility to managers in their current and future financing and investment decisions. The studies also show that better performance of bidder firm's stocks in market leads to adoption of the stock option [Zhang, Wang, and Jones (2003)].

Sundarsanam and Mahate (2003) examine the impact of different types of acquirer firms (i.e. glamour and value firms) on their payment mode and performance in short and long run. The price to earnings ratio or market to book value ratio are used as substitute to differentiate between glamour and value firms. The results of the present study show that glamour firms (i.e. high growth firms) more probably use equity payments than cash, as their stock is overvalued. In both inter and intra group cases, value bidders use cash financing

intensively as compared to glamour and average position bidders. The reason might be that the managers of value firms know their true status and don't want to issue undervalued stock in order to circumvent dilution of control and retention of earnings for existing stockholders.

Faccio and Masulis (2005) document that high market to book ratio increases an acquirer stock's desirability as an M&A payment. Higher ratios of market to book value are also related with higher level of deductible tax research and development expenses, with low dividends and current earnings. These characteristics of firm decrease an acquirer's need for extra tax shield that lessens the cash attractiveness as a payment mode. Martynova and Renneboog (2008) investigate the acquirer financing sources in European takeovers and acquisitions during 1993–2001, the fifth takeover wave. The results show that acquiring firms have preferences for certain financing sources which rest on bidder and target company features. Bidder firms follow the pecking order theory of financing investment i.e., first use internal funds and raise debt in case of insufficient internal funds. They go for stock issues when shareholders sentiments are positive about company's stock. Firms with strong growth opportunities use equity to finance merger deals rather than debt which can generate debt overhang problem (i.e., using equity even in case of high debt potential). According to Brusler, *et al.* (2011) companies with high growth prospects and higher stock valuation are more likely to stock financing in mergers and acquisitions.

Studies on growth opportunities available to bidding firms show that the higher the growth opportunities available to bidder firm, the higher the chances of stock issuance for finance merger and acquisition deals. So we develop the following hypothesis:

**Hypothesis 4:** *Ceteris paribus, the more growth opportunities available to bidder firm, the less likely that cash financing is used in merger and acquisition deals.*

### **2.1.2. Target Firm Characteristics**

Previous literature in finance also examines the characteristics of target firm as possible determining factor in payment mode choice. The target features include the firm's ownership structure, relative size (substitute for risk sharing and asymmetry of information) and nationality in case of cross border deals etc.

### ***Information Asymmetry Hypothesis***

The significant part of mergers and acquisitions in corporate sector is the accessibility of complete information regarding target firm, especially in case of a public limited target firm. Hansen (1987) models the payment mode choice between target and bidder under information asymmetric condition. The

acquiring firm uses equity rather than cash as a payment mode if target firm knows its value better than the acquirer, compelling the target firm to share in post-acquisition reassessment effects. According to Hansen (1987), the problem of information asymmetry would be large as the size of target firm increases. So, if target firm is a significant addition to bidder firm, stock financing is more likely to be used in mergers.

Yook, *et al.* (1999) examined the role of asymmetry of information and managerial control on payment mode choice in mergers and acquisitions and reaction of the market to acquisition deals. The asymmetric information assumption depends on the argument that insiders have firm specific information which generates this problem. Myers and Majluf (1984) document that stocks are issued in case inside information access is available by bidder's management regarding overvaluation of the firm's stock. Consequent empirical studies [Travlos (1987); Wansley, Lane, and Yang (1983, 1987)] reveal that the market responds negatively to seasoned equity issues but does not respond to other types of financing. In the same way, managers are most likely to finance acquisitions with equity in case of critical private information. The findings of studies also reveal that abnormal returns to investors in bidder companies are considerably negative in equity financed acquisitions, but not in cash financing.

Zhang, Wang, and Jones (2003) empirically examine the hypothesis that choice of mode of payment in mergers and acquisition depends on corporate financial characteristics and factors. The hypothesis is tested by using data on UK mergers and acquisitions in the 1990s and the findings reveal that the relative size of target is one of the important determining factors in payment mode choice. The greater the relative size of target, the more likely the stock offering is used to finance merger deal. Consistent with information asymmetry hypothesis, Faccio and Masulis (2005), Martynova and Renneboog (2008) and Andre and Amar (2009) report a negative relationship within the target's relative size and the percentage of cash payment in M&A deals. The bidding firm's financing decision regarding mergers is influenced by their strategic preferences for particular forms of payment mode. The risk sharing incentives of an equity offer increase with transaction's relative size. Conversely, the use of stock financing decreases when there is a threat of control on bidder side.

The literature on information asymmetry hypothesis shows that the higher the information asymmetry about target firm, the higher are the chances of stock financed deals to share risk with target shareholders. By reviewing the previous literature, we develop the following hypothesis:

**Hypothesis 5:** *Ceteris paribus, the larger the relative size of target firm the lesser is the probability of cash financing in merger and acquisition deals.*

### ***Target Ownership Structure***

According to Faccio and Masulis (2005), stockholders in unlisted target firms are not concerned with an equity stake in acquirer firm because the sale of target firm's assets is limited due to liquidity problems and restructuring. Furthermore, the ownership of private unlisted target firm or a company's unlisted subsidiary is usually highly concentrated. The results reveal that the bidder firm's major stockholder might be averse to stock offers for an unlisted target acquisition because there is the risk of formation of a new block-holder in a bidding firm which threaten their controlling power. The results of the study show a positive relation between acquisition of an unlisted target and the percentage of cash payments used in European M&A. According to Ander and Amar (2009), bidding firms buying unlisted targets are more likely to pay in form of cash. The following hypothesis is developed by reviewing previous empirical literature:

**Hypothesis 6:** *Ceteris paribus, the unlisted target firms are more likely to choose the mode of cash financing in merger and acquisition deals.*

## **2.2. Determinants of Deal Amounts in Mergers and Acquisitions**

The previous empirical studies conducted to analyse the bidder and target firm's abnormal return in M&A deals have revealed mixed findings. Several previous studies regarding mergers and acquisitions have revealed positive abnormal return for target firms but negative or insignificant for bidder firms. On the other side, the literature analysing the impact of acquisition deals on efficiency and profitability is inconclusive. Several studies show that banking institutions which acquire other investment and credit institutes improve their profitability and market to book value ratio [Akhavain, Berger and Humphrey (1997); Cyree, Wansley and Black (2000)]. Other studies do not find substantial returns to be gained from these acquisition deals, as their results do not find the impact of mergers and acquisition on profitability and efficiency to be important [Berger and Humphrey (1992); DeYoung (1993)]. In this framework, literature regarding prices paid for the mergers and acquisitions deals become significantly important, since low profitability in these deals can be a result of high prices paid in merger and acquisition deals, because it would put the stability and solvency of firms at risk.

Shawky, Kilb, and Staas (1996) examine the merger premiums paid in bank acquisitions for 320 deals sample during 1982 to 1990. The findings of the study indicate that high acquisition prices are paid in case of small target firms. Targets with high profitability (i.e., high return on equity before deal), targets with high debt ratios, targets in another locality than the bidder transact through stocks as compared to cash payments.

Previous studies [Cheng, Gup, and Wall (1989); Hakes, Brown and Rappaport (1997)] on determinants of deal prices in corporate acquisition show that well-managed bidders are more likely to improve the target firm's management and attain a high value of firms involved in the deal. So these acquiring firms are more likely to pay high prices for buying the target firms. As the quality of management is not directly examined, some proxies like growth and profitability of the company have been used to check it. The results of the study revealed that the following characteristics of acquiring firms have proved to be significant for determining the premiums: the growth of the main deposits and return on assets (ROA). Moeller, *et al.* (2004) documented that big bidder firms pay high prices as compared to small bidders since bigger firm's managers are more likely to be influenced by hubris.

Diaz and Azofra (2009) examine the premium determinants in banking sector mergers and acquisitions in Europe. The two sets of variables are considered as a determinant of premiums in merger deals (1) Target characteristics (2) Bidder characteristics. The study analyses a sample of 81 European banking M&A during 1994 to 2000. The feature of the bidder firm that may influence the premium for M&A deals includes the potential to pay and improve the target firm's management. However, the bidder firm's characteristics are not significant in the whole sample but are significant when a sub sample of saving and cooperative banks is examined. Furthermore, while analysing the complete sample of acquisition deals, no evidence is found that acquisitions are being made with the purpose of attaining personal incentives by management. Though, when a sub sample of banks is used, it is found that the purpose of M&As has been to achieve a big size and high premiums in case of deals between equals; for bigger firms and for those which show less growth, give rise to big sized entities which are more difficult to be targeted. This shows that managements involved in acquisition deals pursue certain personal incentives.

Dionne, Haye and Bergeres (2010) examined in their study the influence of asymmetric information on the premium paid in corporate acquisition. Their results show that informed bidders, who are defined as the bidders having no less than 5 percent of shares of a target firm before the announcement of the deal, pay low premiums as compared to bidders having no significant information. The uninformed bidders suffer from the winner's curse i.e., win by paying high prices and either do not participate in auction or withdraw from it earlier. The results also show that the run up in target share price, triggered by rumors after the deal announcement, causes the revaluation of the target by the bidders. The acquirers are also ready to pay high prices for weak performance target firms because of the possibility of higher gains linked with target firms' constraints. The size of the target and relative size are also negatively associated with prices paid, which supports the theory of integration costs according to

which bidders prefer small targets because of their low absorption costs. Also the bidders opting for public purchase offer or hostile takeover pay generally more to acquire the target firm.

Alexandridis, *et al.* (2012) empirically examine the relationship between deal size and premium paid in merger and acquisition deals in a sample of 3691 US public mergers and acquisitions declared between 1990 to 2007. The authors also examined the relationship between the size of the target firm and gains received by the bidding firms. The results of the study show that bidders of large targets pay significantly lower premiums. The results also show that shareholders see big acquisition deals as more ambiguous because large deals end in greater losses for bidding firms along with sharp increase in uncertainty of returns around the announcement of acquisition. Bidders acquiring big target firms carry on to lose value in the long term as against bidders of small targets that create abnormal positive returns for their shareholders. The findings of the study are not consistent with estimations regarding big deals' failure to realise overpayment risk. Instead, it implies that the complexity of big deals makes it doubtful about any economic incentives despite the evidence of the relationship between acquisition deals and low prices.

But the premiums not only depend on the attractiveness of target firm, which depends on its prospective value, but also on the financial capacity of the bidding firm. Consequently, the present study considers the characteristics of both i.e. the target and the bidder firms for analysing the determinants of deal amounts in M&A events in case of Pakistan. By reviewing previous empirical literature, we develop the following hypothesis concerning deal amount determinants:

**Hypothesis 7a:** *Ceteris paribus, there exists a significant relationship between bidder firm growth opportunities and the deal amount paid in M&A deals.*

**Hypothesis 7b:** *Ceteris paribus, there exists a significant relationship between target firm size and deal amount paid in M&A deals.*

**Hypothesis 7c:** *Ceteris paribus, there exists a significant relationship between cash payment and deal amount paid in M&A deals.*

### 3. DATA AND METHODOLOGY

This chapter discusses the sample selection, variable definition and construction of data, model specification and methodological framework used in the study.

#### 3.1. Sample Selection

The data regarding mergers and acquisitions in Pakistan is obtained from Karachi Stock Exchange and the Competition Commission of Pakistan. The

initial sample consists of 175 mergers and acquisitions in financial, nonfinancial and non-banking financial institutions. However the final sample consists of 104 events (56 non-financial and 48 financial). The non-banking financial sector has been excluded due to nonavailability of complete data. The banking and nonfinancial sector sample has also been reduced to those firms only whose complete data are available. The sample thus includes both financial (banking) as well as nonfinancial sectors whose mergers and acquisitions have been subjected to separate analysis.

The selected sample meets the following selection criteria: (1) observations are from 2005 to 2012; (2) bidding companies are listed Pakistani companies; (3) there are complete deals and represent mergers and acquisitions of substantial interest; (4) companies with single and several M & A during this time period are also considered; (5) target firms are not necessarily publicly listed firms; (6) companies' market data and annual reports are available.

The data for ownership and corporate governance variables is collected from bidder firm's annual reports at end of financial year before M&A deals. The financial variables data is obtained from financial statements of bidder firm at end of year before the acquisition. The data regarding M&A deal amounts is collected from Karachi Stock Exchange (KSE) data portal, Competition Commission of Pakistan and annual reports of firms. The variables used in the study are explained in the following section.

## **3.2. Variable Definition and Construction**

### **3.2.1. Dependent Variables**

#### *Cash Dummy (C\_D): In case of Mode of Payment Determinants*

The percentage of cash and debt used to finance the deals is used as a dependent variable. This is a discrete dependent variable which either takes the value of 0 or 1. Since, our sample includes transactions involving cash only and stock only, the mixed financing deals have been excluded. So our dependent variable is a dummy which takes the value of 1 if the deal is financed entirely through cash and liabilities, and zero if the deal is financed through stock issuance. Therefore, the study will use logit or probit models to explain the probability of cash used in Pakistan M&A.

#### *Deal Amounts (D\_A): In case of Deal Amounts Determinants*

In the second part of the study, we examine the determinants of deal prices in mergers and acquisitions. The dependent variable is calculated by taking the natural log of deal prices involved in M&As.

### 3.2.2. *Independent Variables*

#### **Bidder Firm Variables**

##### *Managerial Ownership (MO)*

A higher level of debt increases the risk of bankruptcy, so management's self-interest in long-run stability of the firms might persuade them to decrease cash payments (including debt) to finance mergers and acquisitions. However, managers' control motivation induce them to use cash rather than issuing stock to circumvent the dilution of ownership and control. Therefore it is hypothesised that there is significant relationship between managerial ownership and percentage of cash payments depending on managers' motivation (i.e. risk reduction or control motivation). Managerial ownership is measured by the percentage of shares held by bidder firm's board of directors declared in the firm's annual reports.

The square and cube of managerial ownership variable is also included to potentially capture the impact of dilution on bidder's inside block-holder, which may not be the same at high and low level of ownership. Information on the ownership and shareholdings pattern is available in annual reports of the companies. Regulation regarding stock markets in Pakistan requires the disclosure of ownership pattern and the details of the shareholders holding more than 10 percent of stock.

##### *Institutional Share Holding (INST)*

Existence of institutional investors in a firm acts as an external monitoring device and helps to raise long-term financing at a reasonable cost. Institutions reduce the company's agency costs and also bring down managerial opportunism. The evidence regarding impact of institutional owners on the payment mode is mixed. The institutional shareholding variable is measured as percentage of shares held by institutions as declared in annual reports' shareholding pattern section.

##### *Outside Block-holder (OBH)*

Outside block holder is measured as a dummy variable which takes the value of 1 if there exists an outside block holder (i.e., non managerial block-holder) and 0 otherwise. The block holder is a shareholder who holds at least 10 percent of shares in a company and the data is collected from annual reports of the firms.

##### *Board size (B\_S)*

The board of directors in a company is a high level corporate body that is accountable for firm management and its operations. It performs a significant



role regarding capital structure decisions. So, it is considered an important variable to study the impact of corporate governance on payment choice in corporate mergers and acquisitions. The board size is measured as the number of members in the board of directors.

*Cash availability ratio (C\_R)*

In accordance with previous literature, cash availability is measured as the ratio of cash plus marketable securities to deal value at the end of the year before the mergers and acquisition deals. This ratio can also be measured by taking the ratio of cash plus marketable securities to total assets of the firm at the end of the year prior to M&A deals.

*Collateral (COLL)*

The collateral is measured as the ratio of the firm's fixed assets to total assets at the end of the year before the mergers and acquisition deals.

*Leverage (LEV)*

Leverage is measured as the ratio of long-term debt to total assets at the end of the year before acquisition deals to capture the firm's financial strength [following Andre and Amar (2009)]. A second measure of leverage is used in case of financial sector which is calculated by the ratio of total debt to total assets at the end of the year before the M&A deals.

*Growth Opportunities (M\_B)*

The growth prospects of the bidder firm are measured through market-to-book ratio that is measured as the ratio of market value of equity plus book value of debt to total assets (book value) at the end of the year prior to deal.

*Profitability- Return on Equity (ROE)*

In the present study return on equity (ROE) is used to measure the firm's profitability and it is calculated by dividing the firm's net profit to market value of equity at the end of the fiscal year before the deals.

*Size of firm (SIZE)*

The size of the firm variable is measured as the natural log of total assets at the end of the year before the mergers and acquisition deals, and data is obtained from annual reports of the firm.

**Target Characteristics**

*Relative Size of the target (R\_S)*

Previous empirical studies used the relative size of target to measure information asymmetry. The relative size is measured as the ratio of deal value

to acquirer market capitalisation plus deal value prior to the merger and acquisition deals.

#### *Target's Ownership Structure (NLT)*

The dummy variable is used to measure the impact of target ownership structure on the mode of payment and it takes the value of 1 if the target firm is an unlisted subsidiary or a stand-alone entity not listed on any stock exchange, and zero otherwise.

### **3.3. Model Development**

The study attempts to examine the determinants of the choice of the mode of payment in M&A decisions. The determinants of amount of deal value are also examined.

#### **3.3.1. Mode of Payments' Determinants**

Theoretical literature suggests that the mode of payment in corporate mergers & acquisitions is influenced by the bidder and target firms' characteristics. Some of the studies have focused on the relation between bidder's managerial ownership and payment mode while other studies have examined the impact of bidder firm's financial variables on the payment mode. There are other studies which examined the impact of target firm's characteristics on payment mode decisions. For example Amihud, *et al.* (1990) and Yook, *et al.* (1999) examine the risk reduction and control motivation hypothesis of managerial control to explain the choice of payment mode in corporate M&A. However, Martin (1996) documents a non-linear relation between managers' ownership and the probability of stock issuance to finance M & A. These studies have been conducted in countries which have a dispersed ownership structure, but the ownership structure in case of Pakistan is concentrated. So in the present study the nonlinearity of managerial ownership with payment mode is tested in a developing economy with concentrated ownership i.e. Pakistan's.

The board of directors in a company is a high level corporate body accountable for the firm's management and its operations. It performs a significant role in capital structure decisions. The present study also considers the corporate governance variables i.e. board of directors, presence of independent directors and the CEO's duality impact on the payment mode, which are not the focus of previous empirical studies conducted in the M&A area. But in the final model only the number of the members of the board of directors is included due to the absence of CEO duality in case of financial sector in Pakistan. The presence of independent directors is also excluded from the analysis due to nonavailability of complete data on the number of independent directors on the board in firms involved in M&A deals.

In the mode of payment determinants model, the bidder and target firm's characteristics are included. The variables are divided into three sections, i.e. the bidder firm's corporate governance variables, its financial variables and target firm's characteristics. The bidder firm's corporate governance variables include the managerial ownership, institutional ownership, outside block-holder and the number of board of directors. The bidder firm's financial variables include cash availability ratio, collateral, leverage, market to book ratio and return on equity (ROE). The target firm's characteristics include its listing status and relative size.

### **3.3.2. *Determinants of Deal Amounts in M&A***

The second part of the study deals with the determinants of deal amounts paid in mergers and acquisitions. The theoretical literature on prices has significant importance since low profitability in these deals can be a result of high prices paid, because it would put the stability and solvency of the firm at risk [Cuervo (1999)].

The well-managed bidders are more likely to improve the target firm's management to attain a high value of the firms involved in the deal, so these firms are more likely to pay high prices for buying the target firms. As the quality of management is not directly examined, some proxies like growth and profitability of the company have been used to check it. In the present study the profitability of the firm is included to test the quality of management.

Previous empirical studies reveal that big bidder firms pay high prices as compared to small bidders since the bigger firm's managers are more likely to be influenced by hubris (i.e. the managers over estimate their ability to improve the firm's performance). Agency problems can also impact the amounts paid in mergers and acquisitions. Such conflicts occur when the managers of the bidder company use their excess cash flows to avail of projects that do not benefit the shareholders. Another implication of agency problem is that the bidder companies with high cash ratios and low market to book ratios encourage aggressive investment and acquisitions and that will lead to payment of higher premiums, which support the notion of managers working for their own interest rather than shareholders. So the bidder firm size is used in this study to measure the managers' motivation behind M&A deals and the bidder's cash availability and market to book ratio are used to measure the presence of agency conflicts in the bidder firm. The target firm's variables are also included in the analysis on account of the price factor. It is also considered if the prices paid are high in case of stock financed or cash financed deals by incorporating deal characteristics.

In the deal amount determinants model therefore, the variables are divided into three parts: bidder variables, target firm variables and deal characteristics. The bidder variables include its cash availability ratio, market to

book ratio, size and ROE. The target variables include its relative size and listing status, and the deal characteristics include its financing mode i.e. whether it is financed by cash or stocks.

### 3.4. Empirical Specification of the Model

#### 3.4.1. *Determinants of the Mode of Payment: Model Specification*

The empirical specification of the model is developed on the basis of the insight drawn from theoretical literature. The independent variables used in the study are those which have either a theoretical or empirical relation with the mode of payment. *The details of the variables are given in the variable definition section.*

The payment mode determinants are divided into bidder and target firm characteristics. Further, the bidder variables are divided into two categories, the corporate governance variables and the bidder's financial strength variables. At the first stage, the model is developed to separately examine the relationship between the bidder and the target firm's characteristics and the mode of payment, and then a combined model is estimated by using the bidder and target firm characteristics. The following section is an analysis of the bidder and the target firm separately.

#### Individual Variables Model Estimation

##### *Impact of Bidder's Ownership Variables on the Mode of Payment*

In this section, the impact of bidder firm's ownership variables is examined on cash payment financing in M&A deals. In equation 1.1 the linear relationship between the managerial ownership and cash financing is considered.

$$C\_D = \beta_0 + \beta_1 MO + \beta_2 OBH + \beta_3 INST + \beta_4 B\_S + u \quad \dots \quad \dots \quad (1.1)$$

##### *Nonlinearity of Managerial Ownership Check*

In order to examine the nonlinearity between managerial ownership and cash payment, the square and cube of managerial ownership is included in the equations.

$$C\_D = \beta_0 + \beta_1 MO + \beta_2 MO^2 + \beta_3 OBH + \beta_4 INST + \beta_5 B\_S + u$$

$$C\_D = \beta_0 + \beta_1 MO + \beta_2 MO^2 + \beta_3 MO^3 + \beta_4 OBH \quad \dots \quad \dots \quad (1.1.1)$$

$$+ \beta_5 INST + \beta_6 B\_S + u \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.1.2)$$

##### *Impact of Bidder Financial Variables on Mode of Payment*

In this model, the impact of bidder firm financial variables is tested on the mode of payment in M&A deals.

$$C\_D = \beta_0 + \beta_1 C\_R + \beta_2 COLL + \beta_3 LEV + \beta_4 M\_B + \beta_5 ROE + u \quad (1.2)$$

### ***Impact of Target Firm Characteristics on Mode of Payment***

Here the impact of target firm characteristics on the mode of payment is separately examined.

$$C\_D = \beta_0 + \beta_1 R\_S + \beta_2 NLT + u \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.3)$$

The target firm variables include the relative size of the target and non-listed target firm.

### ***Combined Variables Model Estimation***

Here the model is estimated by combining the bidder firm ownership and financial constraints variables in order to test the robustness of the results and to check which variables remain significant in the combined variables model estimation.

$$C\_D = \beta_0 + \beta_1 MO + \beta_2 OBH + \beta_3 INST + \beta_4 B\_S + \beta_5 C\_R + \beta_6 COLL + \beta_7 LEV + \beta_8 M\_B + \beta_9 ROE + u \quad \dots \quad \dots \quad \dots \quad (2.1)$$

Again the model is estimated by combining the bidder and target firm's variables to test the robustness of the results.

$$C\_D = \beta_0 + \beta_1 MO + \beta_2 OBH + \beta_3 INST + \beta_4 B\_S + \beta_5 C\_R + \beta_6 COLL + \beta_7 LEV + \beta_8 M\_B + \beta_9 ROE + \beta_{10} R\_S + \beta_{11} NLT + u \quad \dots \quad \dots \quad (2.2)$$

The whole estimation is done separately for both the nonfinancial and financial sectors and the logit model is used for estimation of results due to the presence of discrete dependent dummy variable.

### ***3.4.2. Determinants of Deal Amounts: Model Specification***

The variables used in the study as predictors (independent) are those which have either a theoretical or empirical relation with premium or prices paid in mergers and acquisitions. Both the bidder and target firm characteristics are used to examine the determinants of deal prices in M&A. The bidder firm characteristics include its cash availability, market to book ratio, size and profitability of bidder and target firm characteristics include its listing status and relative size. The cash dummy (1 if deal is financed with cash and 0 otherwise) is also used as a determinant of deal amounts in mergers and acquisitions. The detail of the dependent and independent variables is given in the section on variables definition. *The following model is developed to examine the determinants of deal amounts.*

$$D\_V = \beta_0 + \beta_1 C\_R + \beta_2 M\_B + \beta_3 SIZE + \beta_4 ROE + \beta_5 R\_S + \beta_6 NLT + \beta_7 C\_D + u \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (3)$$

The entire estimation has been done separately for both the nonfinancial and financial sectors and for the estimation the OLS method has been used.

### **3.5. Estimation Technique**

Since the dependent variable in the first part of the present study is a dummy variable taking on the value of 1, if the mergers and acquisition deal is financed through cash and 0 if it is financed through issuance of equity, we use the logit model for the estimation of the model as the normality assumption of error term is absent in the model. In case of deal amount determinants, however, we use the ordinary least squares (OLS) estimation technique.

## **4. EMPIRICAL RESULTS AND DISCUSSION**

In this chapter the empirical results are presented. The summary statistics of the data is presented in section 4.1. In section 4.2 the results of the mode of payment in the merger and acquisition of financial and non-financial sectors are presented and discussed. The determinants of the deal amounts in mergers and acquisitions of financial and non-financial firms are documented in section 4.3.

### **4.1. Descriptive Statistics Analysis**

Table 1 reports the descriptive statistics of both nonfinancial and financial sectors. The mean, median and standard errors are reported for all the variables used in the study. The descriptive statistics show that normality assumption of distribution does not hold because there are differences between the mean and the median values and distribution is skewed. The significance of the difference between the means of the two sectors is also tested by using the t-test.

The difference between the means significance test shows that it is significant in all cases, between nonfinancial and financial sectors, except C\_D, OBH, C\_R, ROE, R\_S and D\_A. The mean value of managerial ownership and institutional ownership is high in case of nonfinancial sector compared to the financial sector and the difference is also significant. The mean values of the outside block holder (i.e. non-managerial), cash ratio, size and leverage are high in case of the financial sector. The nonfinancial sector also has high mean values in case of collateral, market to book ratio and non-listed target. The descriptive statistics reveal significant differences between financial and nonfinancial sectors' mode of payment and deal amounts determinants, requiring separate analysis for both sectors. The correlation matrices between explanatory variables for both sectors are inserted in the appendix.

Table 1

*Descriptive Statistics*

	Nonfinancial Sector			Financial Sector			t-stat
	Mean	Median	Std. Dev	Mean	Median	Std. Dev	
C_D	0.6727	1	0.4735	0.75	1	0.4376	-0.8557
MO	0.2488	0.1804	0.2402	0.0589	0.016	0.1084	5.0442*
OBH	0.8364	1	0.3734	0.9375	1	0.2446	-1.6003
INST	0.1035	0.0619	0.1004	0.0691	0.0179	0.0939	1.7834***
B_S	8.4	8	1.7491	7.8333	8	1.2087	1.8853***
C_R	0.0738	0.0195	0.0954	0.0762	0.0674	0.0235	-0.1721
COLL	0.3898	0.3221	0.2221	0.0218	0.0173	0.0125	11.46*
LEV	0.2331	0.1378	0.2372	0.3366	0.3629	0.0969	-2.8218*
M_B	1.4267	1.0798	1.0123	0.8624	0.9884	0.4747	3.5364*
ROE	0.0731	0.1062	0.6129	0.0012	0.014	0.1703	0.7860
SIZE	16.17	16.18	1.4181	18.69	18.15	1.2986	-9.35*
R_S	0.1495	0.0425	0.2035	0.0932	0.0123	0.1749	1.4944
NLT	0.6545	1	0.4799	0.2292	0	0.4247	4.7324*
D_A	12.57	12.43	1.9120	12.32	12.43	2.2384	0.6047

\*,\*\*,\*\*\* represents level of significance at 1 percent, 5 percent and 10 percent.

#### 4.2. Empirical Results of Determinants of Payment Mode

The following section presents the results of the payment mode determinants and deal amounts in mergers and acquisitions. The payments mode determinants' model is estimated by using both the logit and probit models which does not bring out any important difference in the expected signs. But we report the logit model results in the main text. The descriptive analysis is also done to check the nature of distribution. The correlation matrix between the explanatory variables is also given in the appendix to check the multicollinearity problem. The QML (Huber/White) test is used to correct the problem of heteroskedasticity. Robust standard errors and covariance are reported in cases where there are significant differences in results.

##### 4.2.1. Mode of Payment Determinants; Nonfinancial Sector

The results presented in Table 2 by using the logit model explain the factors that determine the mode of payment used in Pakistan mergers and acquisitions. In the first model (1.1), the impact of ownership variables on cash payment dummy is examined and a linear relation is considered between managerial ownership (MO) and the percent of cash used to finance the deal (C\_D). As the large block- holders are not concerned about control dilution at very low and high levels of control, the intermediate level inside shareholders may lose control through payment by new stocks issuance [Faccio and Masulis (2005)]. Therefore, in second and third part of the model (1.1.1 & 1.1.2), the managerial ownership square (MO<sup>2</sup>) and cube (MO<sup>3</sup>) is included to test the nonlinear relation between inside ownership and mode of payment.

Table 2

*Results of Determinant of Mode for Payment for Non-Financial Sector  
Logit Model Estimation*

Variables	Expected Signs	Model (1.1)			Model (1.1.1)			Model (1.1.2)		
		Co- efficient	Stat-z	p-value	Co- efficient	Stat-z	p-value	Co- efficient	Stat-z	p-value
Intercept		-1.5937	-0.4437	0.6572	-1.5374	-0.4204	0.6742	-1.5263	-0.4208	0.6739
MO	+/-	-4.0190	-2.3155	0.0206**	-6.1292	-1.3344	0.1821	-8.6590	-0.8935	0.3716
MO_2	+/-				3.6705	0.5955	0.5515	13.027	0.4273	0.6692
MO_3	+/-							-8.4146	-0.3255	0.7448
OBH	+/-	-3.0985	-1.9533	0.0508**	-2.9844	-1.9242	0.0543***	-3.0025	-1.8736	0.0610***
INST	+/-	7.3574	2.0953	0.0361**	7.4874	2.1657	0.0303**	7.9760	1.9790	0.0478**
B_S	+/-	0.6689	1.2666	0.2053	0.6611	1.2103	0.2262	0.6637	1.2251	0.2205
LR stat		20.70			20.90			20.96		
Pr(LR stat)		0.0004*			0.0008*			0.0019*		
McFadden										
R-square		0.30			0.30			0.30		

Note: The. \*, \*\*, \*\*\* represent the level of significance at 1 percent, 5 percent and 10 percent. Tests are one tailed in case of directional hypothesis. The errors are hetero adjusted robust standard errors.

As shown in model (1.1) of Table 2, the results indicate a negative and significant relation between managerial ownership and cash payment. However, when a nonlinear relation is tested (model 1.1.1 and 1.1.2) between these two variables, the results do not document a nonlinear association between the managerial ownership level and the likelihood of cash payment. The results seem to imply that as managerial ownership increases, the managerial blockholders become more concerned about the risk reduction hypothesis to avoid increasing the firm's risk and the probability of the firm's bankruptcy. Managerial owned firms generally have undiversified investment portfolios because they put a large part of their money in a group of firms. Managerial owners and their heirs also hold executive positions in the firm and represent the board of directors, so their human capital is closely linked to a particular group [Anderson and Reeb (2003)]. Based on the assumption that the undiversified nature of insider-owned firms' human capital and investment portfolio, Ellul (2008) documents that managerial stockholders may be hesitant to use debt financing as a payment mode in order to avoid an increase in firm's risk of bankruptcy. In Pakistan's context, the managerial controlled firms are usually those whose majority stock is held by insiders or family owned firms [Cheema, Javid, and Iqbal (2009)]. Managers-owned firms are always against the risk of bankruptcy and therefore refrain from using high debts. The managers of risky firms benefit from financing the deals with equity to decrease their private risk through reduction in debt. Therefore, the hypothesis of risk reduction finds that bidders with high variance in return are more likely to finance deals with equity.

The negative linear relationship between managerial ownership and the probability of cash payment do not support the results of the previous empirical studies [Amihud, *et al.* (1990); Yook, *et al.* (1999); Chang and Mais (2000)]. Most of these studies have been conducted in US and UK where there is



dispersion of ownership and most companies respect the 'one share, one vote' rule; whereas in Pakistan ownership is concentrated. It is also documented that in Pakistan, most commercial banks are conservative in their credit policies and prudential regulations described by the State Bank of Pakistan (SBP) make it very difficult for banks to be aggressive in their credit policies. However, our findings support the results of earlier studies [Friend and Lang (1988); Ellul (2008); Brailsford (2002)] which document that inside-owned firms use low debt when inside control is high enough to ensure complete control on the firm. However, our results do not document a nonlinear association between managerial control and cash payment in M&A.

The results of model (1.1) in Table 2 also show that the outside block holder is negatively and the institutional shareholder is positively related with the likelihood of cash payments and the results prove to be significant. Previous research has mixed evidence regarding the relationship of these variables with the mode of payment in mergers and acquisitions. The positive relationship between institutional ownership and cash payments shows that the existence of institutional investors in a firm acts as an external monitoring device and helps to raise long-term financing at a reasonable cost. Institutions reduce the company's agency costs and also bring down managerial opportunism. The positive relationship is consistent with earlier studies [Jensen (1991); Martin (1996)] and also indicates that institutions act as outside monitors of managerial behaviour. The negative significant relationship of outside block-holder with cash payments is consistent with Short, Keasey, and Duxbury (2002) and implies that these investors are more concerned with the dilution of ownership of insiders in the firm rather than increased monitoring of the firm by creditors (in case of cash payments). The positive relationship between the board size and cash payment is consistent with Wen (2002) who documents a positive relationship between capital structure and board size but does not prove to be significant.

Consistent with previous research related to mergers and acquisitions, the findings in model (1.2) of Table 3 shows that several financial variables are significant. Consistent with the investment opportunities hypothesis, the results of the study document a negative relationship between the bidder's market to book ratio and the probability of cash financing. These results are in confirmation with the earlier studies [Martin (1996); Chang and Mais (2000); Faccio and Masulis (2005); Andre and Amar (2009)]. The results support the argument that bidder firms are more likely to issue equity as a payment mode when their stock is overvalued as compared to when it is undervalued and the firms with growth prospects are more likely to use stock financing because equity gives more discretion over funds as compared to the use of debt. Debt also requires firms to pay cash as interest so they do not have cash available for investment in poor projects: debt therefore increases the value of a firm with poor investment prospects. However, the discretion related with stock financing is valuable for companies with good investment prospects [Myers and Majluf (1984); Jung Kim and Stulz (1995)].

Table 3

*Results of Determinant of Mode for Payment for Non-Financial Sector  
Logit Model Estimation*

Variables	Expected signs	Model (1.1): Bidder Ownership			Model (1.2): Bidder Financial #			Co-efficient	Stat-z	p-value
		Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value			
INTERCEPT		-1.5937 (3.5915)	-0.4437	0.6572	2.6915 (0.9647)	2.7898	0.0053*	-0.0568 (0.6002)	-0.0946	0.9246
MO	+/-	-4.0190 (1.7357)	-2.3155	0.0206**						
OBH	+/-	-3.0985 (1.5863)	-1.9533	0.0508**						
INST	+/-	7.3574 (3.5113)	2.0953	0.0361**						
B_S	+/-	0.6689 (0.5281)	1.2666	0.2053						
C_R	+				0.0709 (0.0522)	1.3595	0.0870***			
LEV	-				-4.4004 (1.5735)	-2.7965	0.0026*			
M_B	-				-0.4199	-1.3132	0.0945***			
ROE	+				-3.9610	-2.1605	0.0153**			
NLT	+							1.3314	2.0370	0.0208**
R_S	-							-0.2068	-0.1265	0.4496
LR stat		20.70			16.14			5.14		
Pr(LR stat)		0.0004*			0.0028*			0.0766***		
McFadden R-square		0.30			0.23			0.07		

*Note:* The .\*, \*\*, \*\*\* represent level of significance at 1 percent, 5 percent and 10 percent. Tests are one tailed in case of directional hypothesis. The errors are hetero adjusted robust standard errors.

In case of bidder firms' financial variables, a positive relationship is found between bidder cash availability and probability of cash payment. These results are consistent with Andre and Amar (2009) and show that bidder firms having a lot of cash availability are more likely to finance their merger and acquisition deals with cash and the result is significant. According to present study results, leverage of bidder is negatively related with the likelihood of cash payments and result is significant. The results are consistent with Faccio and Masulis (2005), who report a significant and negative relationship between debt and cash payments in mergers. This reveals that high levered bidder firms have difficulties in raising debt and using proceeds for financing investments. Thus, high levered firms are more likely to pay through stocks. The explanatory variable collateral has high correlation with leverage, which causes the problem of multicollinearity, therefore the collateral is excluded from the bidder firm's financial variables due to its low correlation with the dependent variable as compared to leverage.

Return on equity (ROE) is negatively related with the likelihood of cash payments in our results and is also significant, which is contrary to prior research which documents a positive relationship. But this result can be justified on the grounds that high return on equity will lead the firm to issue stocks to finance their acquisitions. Higher returns lead to higher earnings per share which

will lead to higher prices of the firm's stock (by using price earnings multiplier approach to value the firm's stock). Therefore profitable firms prefer to issue stocks as compared to debt. There is a risk that earnings can be diluted by issuing more stocks but this can be justified by our previous result which documents a negative relationship between managerial owners and cash payments. This would mean that inside owners are more concerned with the risks rather than dilution of their rights.

The results presented in model (1.3) of Table 3 show that the mode of payment is also related to target features. In confirmation of the asymmetric information hypothesis [Hansen (1987)], the results show a negative relationship between the target firm's relative size and the percentage of cash payment. The results show that the bidding firms buying big targets are more likely to use equity in order to share overpayment risk with target firm's shareholders. But the relationship between the target firm's relative size and cash payments is not significant. The target listing status has a significant influence on the payment mode in M&A. The results are in confirmation with earlier studies [Faccio and Masulis (2005); Andre and Amar (2009)] and reveal that investors of unlisted targets are more likely to use cash given the concentrated and illiquid portfolio holdings by target firms. Similarly companies selling their subsidiaries are motivated by financial concerns or their desire to reorganize towards the firm's core competences, and this finding also reveals that the acquirer may be hesitant to use equity in order to evade the creation of a block-holder which threatens the bidder firm's control and private incentives related with it.

To check the robustness of the results, combined estimation is done for both the bidder's financial and ownership variables into one model (model 2.1, Table 4). The results of the model show that the outside block holder, cash availability, leverage, market to book ratio and return on equity are proved to be significant but the managerial ownership and institutional ownership become insignificant. Since most of the variables are significant in the revised model it proves the results are robust. The same model (model 2.2, Table 4) is estimated by including target firm variables but the results are the same as found in the previous regression. This also indicates the robustness.

#### ***4.2.2. Mode of Payment Determinants: Financial Sector***

The same analysis is carried out in financial sector mergers and acquisitions and the mode of payment determinants, but the results are different due to difference in the structure of financial versus nonfinancial firms. The results of the model (1.1) in Table 5 show that ownership and corporate governance variables do not prove to be significant in case of financial sector M&A. The ownership variables are not significant because the level of managerial and institutional ownership is low in banks, which do not exert any influence on the financing decisions of corporate acquisitions. Due to the insignificant level of managerial ownership in the financial sector, the

Table 4  
*Combined Variables Model Estimation*  
*Logit Model Estimation*

Variables	Expected signs	Combined Model Estimation (2.1)			Combined Model Estimation (2.2)		
		Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value
INTERCEPT		-1.6081	-0.4146	0.6784	-2.0762	-0.5766	0.5642
MO	+/-	-2.0183	-0.8743	0.3819	-1.7210	-0.6753	0.4995
OBH	+/-	-3.2349	-1.9160	0.0554***	-2.8713	-1.7280	0.0840***
INST	+/-	6.9923	1.4228	0.1548	7.4111	1.3347	0.1820
B_S	+/-	0.8574	1.4161	0.1568	0.7889	1.4235	0.1546
C_LR	+	0.1310	1.7215	0.0426**	0.1436	1.4590	0.0723***
LEV	-	-3.2745	-1.6286	0.0517***	-3.3047	-1.7000	0.0445**
M_B	-	-0.6170	-1.3782	0.0840***	-0.6091	-1.5144	0.0649***
ROE	+	-4.1702	-1.9124	0.0279**	-4.0941	-1.7147	0.0432**
NLT	+				0.4566	0.3801	0.3519
R_S	-				1.5350	0.3203	0.3744
LR stat		28.64			28.98		
Pr(LR stat)		0.0004*			0.0013*		
McFadden							
R-square		0.41			0.42		

QML (Huber/White) hetero robust standard errors reported in parenthesis. \*, \*\*, \*\*\* represent level of significance at 1 percent, 5 percent and 10 percent respectively. Tests are one tailed in case of directional hypothesis.

nonlinearity of managerial ownership is not tested. The corporate ownership structure in Pakistan reveals that the promoters and directors' ownership share is quite limited i.e., on an average less than 11 percent in the banking sector in Pakistan. The associated companies are the dominant group of shareholders, through which families control the financial sector, holding around 39 percent share on an average in the share capital of selected banks. The institutional investors (including mainly banks, DFIs, financial institutions, modaraba and mutual fund companies) have dominant presence in fertiliser, pharmaceutical, sugar and cement sectors and have only a moderate level of presence in banks [Research Department, Institute of Cost and Management Accountants of Pakistan (ICMAP) (2011)]. Since, most of the banks are controlled by dominant groups (e.g. Ibrahim, Nishat and Dawood Habib groups etc.) through the associated companies, the existence of major outside shareholders does not play a significant monitoring role in the firm. These facts therefore support our results regarding the insignificant impact of ownership and corporate governance variables on the mode of payment in Pakistani mergers and acquisitions.

Table 5 (model 1.2) reports the results of the impact of bidder financial variables on cash payments. The results show that cash availability and market to book ratio have a significant impact on cash payment. Cash ratio has a positive relationship with cash payments and the results are consistent with the

Table 5  
*Results of Determinant of Mode for Payment for Financial Sector*  
*Logit Model Estimation*

Variables	Expected signs	Model (1.1): Bidder Ownership			Model (1.2): Bidder Financial #			Model (1.3): Target Side		
		Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value
INTERCEPT		0.3105	0.0856	0.9318	10.02	0.7933	0.4276	1.7172	3.4598	0.0005*
MO	+/-	-3.8603	-0.7945	0.4269						
OBH	+/-	1.0837	0.6746	0.4999						
INST	+/-	2.4806	0.5290	0.5968						
B_S	+/-	-0.0163	-0.0493	0.9607						
C_R	+				58.72	2.3651	0.0090**			
LEV	-				-4.8745	-0.4150	0.3391			
M_B	-				-8.7780	-1.8275	0.0338**			
ROE	+				1.3128	0.4762	0.3169			
NLT	+							41.94	61.43	0.0000*
								(0.6827)		
R_S	-							-9.7619	-2.7317	0.0031*
								(3.5735)		
LT (STAT)		3.29			20.51			21.11		
Pr(LR)		0.5112			0.0004*			0.0000*		
McFadden										
R <sup>2</sup>		0.06			0.38			0.39		

Note: The \*, \*\*, \*\*\* represent level of significance at 1 percent, 5 percent and 10 percent. Tests are one tailed in case of directional hypothesis. The errors are Hetero adjusted robust standard errors.

findings of the earlier studies [Faccio and Masulis (2005); Andre and Amar (2009)] which indicate that firms with more cash availability are more likely to use cash as a mode of payment. Market to book ratio shows a negative significant relationship with cash payments in M&A. This result is also consistent with earlier studies [Faccio and Masulis (2005); Andre and Amar (2009)] which document that firms with more growth opportunities are more likely to issue stocks to finance the investments in order to have more discretion on the amount and use of funds. The variables like collateral, leverage and return on equity have the expected signs but they are not significant. The variable collateral has been removed from the results because it does not improve the value of the coefficient of determination and the significance of results. Leverage is also insignificant because banks are in the business of collecting deposits (which form a large part of its debt) and issuing loans to individuals and companies out of them. So, an increase in leverage does not mean that banks are issuing equity to finance their corporate acquisitions.

Table 5 (model 1.3) also reports the impact of target characteristics on the mode of payment. The results show that the relative size is negatively related with the likelihood of cash payment and the result also proves to be significant. This result is consistent with the earlier studies [Hansen (1987); Martin (1996); Faccio and Masulis (2005); Andre and Amar (2009)] and shows that the acquiring firm use stock rather than cash as a mode of payment in merger and acquisition deals; if the target knows its value better than the acquirer, this forces the target to share in any post acquisition revaluation effects. The target

listing status has a significant influence on the payment mode in M&A. The results are in confirmation with earlier studies [Faccio and Masulis (2005); Andre and Amar (2009)] and reveal that investors of unlisted targets are more likely to use cash given the concentrated and illiquid portfolio holdings by target firms.

The robustness of results is tested (Table 6, model 2.1 and 2.2a, 2.2b) by combining the bidder firms financial variables and the target firm's characteristics and re-estimate the results (The ownership variables are not included in model 2.2 due to their insignificant impact in case of financial sector). The results again show that cash ratio, target relative size, non-listed target and market to book ratio have a significant impact on payment mode. These results imply the robustness of the estimates in the combined model estimation.

Table 6  
*Combined Variables Estimation in Case of Financial  
Sector Mode of Payment*

Variables	Expected Sign	Combined Model Estimation (2.1)			Combined Model Estimation (2.2a)			Combined Model Estimation (2.2b)		
		Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value	Co-efficient	Stat-z	p-value
INTERCEPT		11.86	0.8538	0.3932	12.3132	0.7921	0.4283	21.62	1.3506	0.1768
MO	+/-	-0.4032	-0.0739	0.9411						
OBH	+/-	9.0555	1.0270	0.3044						
INST	+/-	-0.9638	-0.1266	0.8993						
B_S	+/-	-0.5573	-1.0412	0.2978						
C_R	+	60.82	1.7487	0.0401**	68.10	2.3444	0.0095**	96.22	2.3138	0.0103**
LEV	-	-10.59	-0.5685	0.2848	-2.6890	-0.1950	0.4227	-11.14	-0.7484	0.2271
M_B	-	-9.7709	-2.0155	0.0219**	-14.03	-2.6065	0.0045*	-14.90	-2.5028	0.0061**
ROE	+	2.8103	0.8410	0.2001	0.4589	0.1626	0.4354	-1.9985	-0.7664	0.2217
NLT	+				44.86	20.31	0.0000*			
R_S	-							-38.83	-2.5970	0.0047*
LR stat		26.43			28.50			37.60		
Pr(LR stat)		0.0009*			0.0000*			0.0000		
McFadden										
R-square		0.49			0.53			0.70		

Note: The. \*, \*\*, \*\*\* represent level of significance at 1 percent, 5 percent and 10 percent. Tests are one tailed in case of directional hypothesis. The errors are hetero adjusted robust standard errors.

#### 4.3. Determinants of Deal Amounts in Mergers and Acquisitions

The determinants of the deal amounts model are estimated by using the least square regression model for both sectors separately. The correlation between the explanatory variables is checked to solve the problem of multicollinearity. The White test is used for correction of heteroskedasticity problem and robust standard errors and covariance are reported in case of significant differences found in results.

#### **4.3.1. Nonfinancial Sector Results**

Table 7 presents the results of the determinants of deal amounts paid in mergers and acquisitions for the nonfinancial as well as the financial sector. The results regarding the nonfinancial sector show that C\_R is negatively and M\_B ratio is positively related to deal prices in mergers and acquisitions and significant in both cases. The results of both of these variables show that no agency problems exist in the nonfinancial sector, because agency problems can also impact the amounts paid in mergers and acquisitions. Such conflicts happen when the managers of the bidder company use their excess cash flows to avail of projects that do not benefit the shareholders [Jensen (1986)]. Another implication of the agency problem is that bidder companies with high cash ratios and low market to book ratios encourage aggressive investment and acquisitions that will lead to payment of higher premiums, which supports the case of managers working for their own interest rather than the shareholders' [Gondhalekar, Sant and Ferris (2004)]. But our results suggest the opposite relation, which indicates the reduction of agency conflicts in case of nonfinancial firms. One reason for this might be an increased ownership of insiders (i.e. directors and executives) who align the interest of the shareholders (outsiders) with the management (insiders).

Another reason that explains the negative relation between cash availability of the bidder and the deal amount paid for the target firm is that the target companies prefer cash payment due to information asymmetry in share exchange payment (i.e. overvaluation of bidder firm's stock). So, the target firm's preference for cash payment leads to lower prices received in mergers and acquisitions as compared to payment by stocks. The positive relation between the market to book ratio of the bidder and the deal amount is justified on the grounds that the bidder firm with more growth opportunities is more likely to finance deals through stock payments. Since the information asymmetry is high when the bidder pays through stocks, prices are high for high growth bidding firms compared to low growth bidding firms. The results show a positive and significant relation in both bidder and target firms' relative size cases with deal amounts paid in stocks. This result supports the notion that if the bidder is financially strong, has a large size and is able to bring a more efficient, value creating management team to improve the target firm's operations and management, then the bidder pays higher prices for the target. The bidder firm's size and relative size of the target firm also justify the payment of a high price for the target firm, when the purpose of the acquisition is not value maximisation but achieving a bigger size [Diaz and Azofra (2009)].

The results show a negative and insignificant relation between the return on equity and the deal amounts, which shows the absence of the hubris hypothesis. The price paid for mergers and acquisitions is also influenced by the bidder's hubris hypothesis [Roll (1986)], measured by the bidder firm's return

on stock, which states that managers who exaggerate their self-confidence try to overestimate their ability to manage the target firm, which leads to payment of higher prices for the target [Hayward and Hambrick (1997)]. However our results do not support this hypothesis in case of nonfinancial firms.

The results show a negative and significant relation between non-listed target firms and the amount paid in M&A. The results imply that bidder firms are paying less in case of acquiring non-listed targets, which can be justified on the grounds that the non-listed target firms' formation costs are low as compared to listed target firms'. The result is also consistent with Isa and Lee (2011), who report that bidders acquiring public companies are motivated by personal incentives like increase in their status and prestige, so they are willing to pay extra. They report that bidders tend to overpay in case of public listed companies as compared to private targets. The coefficient on the cash dummy (1 in case of cash payment and 0 in case of stock) is positive and does not prove to be significant.

Table 7

*Results of Determinants of Deal Amounts in Mergers and Acquisition:  
OLS Model Estimation*

Variables	Non Financial Sector (3)			Financial Sector (3)		
	Coefficient	Stat-t	p-value	Coefficient	Stat-t	p-value
INTERCEPT	-1.7157	-0.7987	0.4284	12.464	3.3850	0.0016*
C_R	0.0067	-4.2599	0.0001*	-0.0002	-10.799	0.0000*
M_B	0.6061	3.5814	0.0008*	-0.1438	-0.1891	0.8510
SIZE	0.8124	6.1591	0.0000*	0.0198	0.0854	0.9324
ROE	-0.0263	-0.0922	0.9269	3.8233	2.3826	0.0220**
R-S	5.6505	5.9487	0.0000*	7.1287	5.0396	0.0000*
NLT	-0.7779	-2.0036	0.0508**	0.3683	0.7053	0.4847
C_D	0.0463	0.1199	0.9051	-1.1828	-2.2106	0.0328**
F-atat (p value)	17.43 (0.000)			14.67(0.000)		
Durbin Watson	2.04			1.70		
Adjusted R <sup>2</sup>	0.68			0.67		

Note: The. \*, \*\*, \*\*\* represent level of significance at 1 percent, 5 percent and 10 percent. Tests are one tailed in case of directional hypothesis. The errors are hetero adjusted robust standard errors.

#### 4.3.2. Financial Sector Results

Table 7 also presents the results of the determinants of deal amounts paid in mergers and acquisitions for the financial sector. The results show that the C\_R and M\_B ratios are both negatively related to deal prices in M&A. The results prove to be significant only in case of C\_R, but the coefficient of C\_R is almost equal to zero. The reason for the negative relation between cash availability of the bidder and deal amount paid for target is that the target companies prefer cash payment due to information asymmetry in case of share exchange payment (i.e. overvaluation of



bidder firm's stock). There is a signalling impact of issuing equity, which states that bidder firms are most likely inclined to issue stock when their equity is overvalued in the market. So, the target firm's preference for cash payment leads to lower prices paid by bidders in M&A compared to when payment is in the form of stocks. The negative relation between the market to book ratio of the bidder and deal amount is not proved to be significant.

The results show a positive relation in both the bidder's and relative size of the target firms with deal amounts paid in mergers and acquisitions. However, the results are significant in case of only relative size of target firms. The relative size of target firms justifies the payment of a high price, when the purpose of the acquisition is not the value maximisation of the firm but achieving a bigger size. This aim, which is called "too big to fail" in Anglo-Saxon literature, has been one of the main reasons for major mergers in banking sector in the 1990s and justifies payment of high prices for mergers between similar entities and for mega-mergers [Diaz and Azofra (2009)]. The big and profitable institutions in their wish to grow aggressively are thus more willing to pay higher premiums for M&A deals [Hakes, Brown, and Rappaport (1997)].

The results show a positive and significant relation between return on equity and the deal amounts, which shows the presence of the hubris hypothesis. The price paid for mergers and acquisition is also influenced by the bidder's hubris hypothesis [Roll (1986)], measured by the bidder firm's return on stock, which states that managers who exaggerate their self-confidence try to overestimate their ability to manage the target firm, which leads to higher payment for the target [Hayward and Hambrick (1997)]. Our results also support this hypothesis in case of financial firms.

The results show a positive and insignificant relationship between non-listed target companies and the amount paid in M&A. The relation between the C\_D and the deal amount is negative and proves to be significant, which implies that the deals financed with cash are associated with lower prices. The significance of the mode of payment (cash or stock) can be explained according to two hypothesis (1) financial synergies (2) overvaluation. The financial synergy hypothesis [Shawky, Kilb, and Staas (1996); Hakes, *et al.* (1997)] implies that deals financed with stocks can create greater financial synergies than cash financed deals, because the latter may imply liquidity constraints. This implies that the deal price is high if it is financed with equity. The relation between the deal price and the payment mode can also be explained according to overvaluation hypothesis [Myers and Majluf (1984)]. This depends upon the existence of information asymmetry regarding the bidder's company, as insiders (i.e. directors etc.) have more information than the rest of the parties. However, stock payment would be considered as a negative signal by the market, due to the presence of asymmetric information. The share value of the bidder would therefore decline and the price would be high for M&A deals paid in the form of equity rather than in cash.

The overall analysis shows that bidder firm ownership and financial variables are significant determinants of the mode of payment in corporate M&As in the nonfinancial sector. The managerial ownership theory supports the existence of risk reduction hypothesis and the relation between managerial ownership and cash financing proves to be linear. The target firm's non-listed status is also a significant determinant of the mode of payment. In the financial sector ownership and corporate governance variables have no significant influence on the mode of payment, while the other variables which are significant include cash availability ratio, market to book value ratio and target firm characteristics. The results pertaining to determinants of deal amounts in both sectors show that most of the bidder and target firm characteristics have significant influence on deal prices and overall the model is significant in both cases.

## 5. CONCLUSION

Mergers and acquisitions (M&A) are major events in the life of a firm. A number of studies have been conducted to explain this phenomenon. Major studies that were conducted on the motivation behind merger and acquisitions deals in the late 1970s focused on issues like market power hypothesis; hubris hypothesis; economy of scale and scope; managerial hypothesis etc., short and long term performance of bidder and target firms, merger waves, and choice of mode of payment [Chevalier and Redor (2008)]. Mergers and acquisitions in Pakistan have not yet received much attention. As per the available literature, no study was found to explore the role of bidder and target firms' characteristics in the mode of payment choice. Thus, the present study is an attempt to fill this gap by examining the bidder firm's ownership, financial and corporate governance variables and the target firm's variables' impact on the mode of payment choice in the corporate sector M&A deals in Pakistan.

The results of the study show that bidder firm ownership structures have a significant impact on the mode of payment in the nonfinancial sector of Pakistan. The managerial ownership has a negative and linear relation with cash payments in M&A, which validates the dominance of risk reduction hypothesis. The results also imply the validation of outside monitoring hypothesis i.e., the institutional investors are concerned with greater leverage (part of cash payment) in the firm and thus with increasing its monitoring by outside creditors. However, outside block-holders are not actively playing their role in monitoring of firms and do not have long term presence in the firm. The bidder firm's financial variables prove to be significant determinants of payment mode in M&A deals. The positive relation of non-listed target firms with payment mode implies that shareholders of unlisted target firms are more likely to accept cash payments given the concentrated and illiquid portfolio holdings by target firms. This finding also reveals that the acquirer may be hesitant to use equity in

order to check the creation of a block-holder which might threaten the bidder firm's control and the private incentives related with it.

The same analysis was conducted in the financial sector where the results show that ownership and corporate governance variables do not have a significant impact on cash payments in M&A deals. Corporate ownership structure in Pakistan shows that the promoters' and directors' ownership share is quite limited, on an average less than 11 percent in the banking sector [Research Department, Institute of Cost and Management Accountants of Pakistan (ICMAP) (2011)]. Since, most of the banks are controlled by dominant groups—Ibrahim, Nishat and Dawood Habib—through associated companies, the existence of major outside shareholders does not play any significant monitoring role in the firm. The results regarding the impact of bidder firm's financial variables on cash payments show that cash availability and market to book ratio have a significant impact. The results regarding the impact of target firm's characteristics on the mode of payment are different for listed and non listed firms. For the former, relative size is negatively related and for the latter positively to the likelihood of cash payment. These results are also significant.

The results in the case of the determinants of deal amounts in the nonfinancial sector show that cash to deal ratio is negatively and market to book ratio is positively related to deal prices and the results are also significant. The results regarding both of these variables show that there are no agency problems in the nonfinancial sector, because agency problems can also influence the amounts paid in mergers and acquisitions. Such conflicts happen when the managers of the bidder company use their excess cash flows to avail projects that are not beneficial to the shareholders [Jensen (1986)]. The results show a positive and significant relation in case of both bidder and target firm size in relation to deal amounts, which implies that the purpose of acquisition is not value maximisation but size enhancement [Diaz and Azofra (2009)]. The result also shows that bidder firms are paying less for acquiring non-listed targets as these have low formation costs compared to listed target firms

The results regarding the deal amount determinants model in financial sector show a positive impact of the bidder's return on equity and target firm's relative size. These results justify the payment of high price when managers are influenced by hubris (i.e. they overestimate their ability to manage the firm) and the purpose of the acquisition is not value maximisation of the firm its size enhancement [Diaz and Azofra (2009)]. The relation between cash payment and the deal amount is negative and significant, which implies that deals financed with cash are associated with lower prices. This depends on the existence of asymmetric information about the bidder company, considering insiders (i.e. directors etc.) have more information than the other stake holders. If insiders of the bidder firm know that their shares are overvalued, they will be more willing to pay by stocks. So the price is higher for mergers and acquisitions paid in stocks than for those paid in cash.

The present study has the limitation of small sample size due to nonavailability of complete data. However, the results validate the previous studies and also support the practical working in Pakistan where the empirical studies regarding M&As mainly focus on the pre and post profitability analysis. There are therefore many issues related to M&A which are still unexplored. For example, there is no evidence regarding the valuation impact of M&A on bidding firms' price of shares. The impact of the firm's dividend policies is also examined on the mode of payment by considering whether the two firms involved in M&A follow similar or different policies of dividend. Since the M&A activity provides information about the bidding firm's management quality, it will therefore guide the executives' compensation committee on managerial remunerations. The present study can also be extended to examine the impact of mergers and acquisition on the directors and executive' pays and compensation.

## APPENDIX

**Table A1**

*Nonfinancial Sector Correlation Matrix*

	C_D	MO	OBH	INST	B_S	C_R	COLL	LEV	M_B	ROE	SIZE	R_S	NLT	D_A
C_D	1													
MO	-0.32	1												
OBH	-0.20	-0.39	1											
INST	0.32	-0.25	-0.05	1										
B_S	0.23	-0.21	0.16	0.08	1									
C_R	0.18	-0.25	0.13	-0.17	0.32	1								
COLL	-0.17	0.22	0.08	-0.28	0.19	0.14	1							
LEV	-0.31	0.34	0.11	-0.38	-0.02	0.00	0.61	1						
M_B	-0.13	-0.01	0.11	-0.27	0.29	-0.03	0.16	0.07	1					
ROE	-0.19	0.21	-0.09	0.03	0.00	-0.06	0.04	-0.12	-0.06	1				
SIZE	0.22	-0.23	0.05	0.01	0.37	0.34	-0.08	-0.31	0.06	-0.04	1			
R_S	-0.11	0.16	-0.21	-0.06	-0.20	-0.25	0.11	0.14	-0.02	0.19	-0.42	1		
NLT	0.31	-0.30	-0.22	-0.03	-0.03	0.21	-0.09	-0.19	0.09	-0.18	0.22	-0.31	1	
D_A	-0.03	0.07	-0.08	-0.19	0.11	-0.23	-0.07	-0.15	0.33	0.10	0.30	0.43	-0.24	1

**Table A2**

*Financial Sector Correlation Matrix*

	C_D	MO	OBH	INST	B_S	C_R	COLL	LEV	M_B	ROE	SIZE	R_S	NLT	D_A
C_D	1													
MO	-0.21	1												
OBH	0.25	-0.48	1											
INST	0.02	0.50	0.07	1										
B_S	-0.00	-0.21	-0.25	0.04	1									
C_R	0.15	0.07	0.09	0.25	-0.00	1								
COLL	0.01	0.41	-0.22	0.52	0.03	0.06	1							
LEV	-0.32	0.22	0.04	0.36	-0.27	0.26	0.42	1						
M_B	-0.43	0.12	0.05	0.19	-0.22	0.40	0.12	0.82	1					
ROE	0.25	0.01	-0.01	0.11	0.23	0.45	-0.33	-0.06	-0.01	1				
SIZE	0.34	0.00	0.09	0.24	-0.15	0.44	0.06	0.42	0.28	0.61	1			
R_S	-0.59	-0.15	0.03	-0.13	-0.02	-0.30	0.11	0.11	0.01	-0.36	-0.32	1		
NLT	0.31	-0.19	0.14	-0.24	-0.09	0.46	0.01	0.18	0.14	0.31	0.45	-0.17	1	
D_A	-0.37	-0.17	-0.09	-0.12	0.15	-0.05	-0.07	0.08	0.07	0.06	0.04	0.66	-0.03	1

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