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## **A Comparative Analysis of Stock Returns through VaR: Variance-Covariance & Historical Simulation method (Empirical Evidence from KSE-100)**

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**Hassan Raza<sup>2</sup>**

### ***Abstract***

*In the field of risk management, Value at Risk (VaR) is the technique widely used to measure market risk due to volatility in the stock market. One of the most prominent risks in financial risk management is the market risk and its potential impact on both individual and institutional investor as well as their returns which may either be embedded in single or portfolio of asset held by these investors. This Study predominantly targeted & focuses on this particular market risk, which potentially increase the risk level and losses to investor. Study further explores the market risk measurement through Value at Risk and its various methods (parametric & non-parametric). This study computes the VaR on annual basis as well as for 10 years period of listed KSE 100 index. Further, it run a second round of test for assessing the performance of VAR models (Variance Covariance & Historical Simulation) through statistical techniques in order to clarify whether the VAR model is considered best for computing the potential losses of targeted single or portfolio of stocks and finally paper end with conclusion on which VaR model is considered best in given market condition & risk dynamics. Finding shows that variance-co-variance method is best to use for assessment of VaR in a given market hypothesis of KSE-100 that is return of securities follows a normality patterns.*

**Key Words:** *Value at Risk, Market Risk, Financial Risk Management, Parametric & Non Parametric Methods, Back-Testing,*

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## **Introduction**

The field of risk management has gained a significant momentum in last two or three decades due to the emergence of capital stock markets & other different types of investment opportunities available either at domestic or global arena. Every individual, firm or institution when decides to spend or invest money counter some risk which may affect or cause their return or future expected profits to decline. There are various types of risk such as Business, Strategic & financial that exposes the individual & firm toward losses or negative outcome. Business risk is concern with the risk that firm face solely on account of their presence in some particular product market. This type of risk stem from such types of activities as technological innovation, production design & marketing. Strategic risk is a risk that arises from fundamental changes in the economic or political conditions such as expropriation of land. Finally, the most important & targeted in this paper is the Financial Risk, which is caused by movement in the financial markets. In the context of financial risk management financial risk arises through countless transactions of financial nature, including sales & purchases, investments & loans, and various other business activities. It can arise as result of legal transactions, new projects, mergers & acquisitions, the debt financing, uncertainty or adverse movement in the stock markets, energy component of costs, or through the activities of management, stakeholders, competitors, foreign government or weather.

Financial risk in the context of financial risk management philosophy is divided into market risk, credit risk, liquidity risk, operational risk, exchange rate risk, interest rate risk & legal risk. The focus of this paper is mainly on market risk that is the risk arises due to the adverse movement in the prices of financial assets or liabilities over targets time period causing losses to investors. Credit risk is the risk due to the default of counter party on certain transaction or if one party is unable to pay its obligation as result of owing something to other. Liquidity risk resulting from insufficient market activity or when, an investor is unable to realize the cash from its desired assets in case of need. Operational risk is the risk that create a situation where firm is unable to bear the its fixed operating cost or when firm fixed cost reaches position where it is difficult for firm to cover that cost. Operational risk also arises from such events such as inadequate systems, management failures or fraud. Interest rate risk arises due to sudden increases in the rate

of interest rates that exposes one to position where, he is unable to pay the interest & related payments on account of loans & debts. Exchange rate risk arises due a sudden decrease or depreciation in the value of currency and causes one be unable to bear or recover expenses and ran into business failures. Legal risk is the risk that arises when counterparty does not have the authority to engage in transaction. Though these different types of financial risk creates different types of losses for individual and firm and are significant to analyzed in the framework of overall firm risk management. But, the focus of this research paper is on the analysis of market or price risk and its measurement through value at risk approach (VaR).

Market or price risk refers to the risk associated with interest rates, exchange rates & equity prices. A general notion of market risk is the sensitivity of the price of an asset or derivative to a change in the underlying source of uncertainty. For a single stock or portfolio of stock beta is typical measure of risk. For bond, duration and convexity are the common measures& for options Delta & Gama are the index to measure the risk from price movements. Though, these indexes are used in different market conditions & for different financial assets but the Value at Risk (VaR) model is the standardized model used to measure the downside risk of an asset or security through various methods such as Variance Covariance (J.P Morgan Risk Metrics), Historical Simulation & Monte Carlos Simulation.

During the 1990s, Value at Risk or VAR, as it is commonly known-emerged as the premier risk management technique. Probably no other risk management area has generated as much attention and controversy as the VAR itself clasp. VAR as one of the widely used statistical measures of systematic risk is a probability based measure of loss potential for a company, a fund, a portfolio, or a strategy. Any position that exposes one to loss is potentially a candidate for VAR measurement. VAR is most widely and easily used to measure the loss from market risk, but it can also be sued as proxy to measure the loss from credit risk & other types of risks.

Value at risk (VaR) measures the worst expected loss under normal market conditions over a specified time interval at a given confidence level. As a standard “VaR answers the question: how much can I lose over X% probability over a preset horizon” (J.P Morgan, Risk Metrics –Technical model) another way of describing VaR is the lowest

quintile of the potential losses that can occur within a given portfolio during a specified time period. The basic time period  $T$  and the confidence level (the quintile)  $q$  are the two major parameters that should be chosen in a way appropriate to the overall goal of risk measurement. The time horizon can differ from a few hours for an active trading desk to a year. When the primary requirement is to satisfy external regulatory requirements, such as bank capital requirements, the quintile is very small (for example, 1% of worst outcome). However, for internal risk management model used by company to control the risk exposure, the typical number is around 5% or at 95% confidence level.

One commonly used measure of price risk of an investment in some financial asset is the standard deviation of the price of that asset. But if one is particularly interested in the maximum downside risk one is exposed to, the so called value at risk, VaR for short, might be a more suitable instrument. It was made popular by US investment bank J.P Morgan, who incorporated in their risk management model Risk Metrics toward which we will come later in the paper. Loosely speaking, the value at risk of an asset or portfolio of asset is the maximum loss that may be suffered on that portfolio in the course of some holding period, during which the composition of portfolio remain unchanged. The length of this holding period is short term, usually one day, one week to a year. So the value at risk for an investor is the maximum amount of money he or she may lose over the holding period of an investment. A VaR is also relates to some confidence level, typically in the range of 95% to 99%. So, VaR doesn't really pertain to the maximum loss that may be incurred, but it tells the worst portfolio result that happens once every so many days.

Three aspects need to be kept in mind when judging the value at risk of an asset or portfolio of an asset. In the first place, we need to know the initial value of an investment. For analytical purposes, initial or market value of an asset or portfolio of an asset is usually normalized to some currency units or multiples. A second element is the holding period to which VaR pertains. And finally, the confidence level is of importance. Evidently the higher the confidence level, the larger the value at risk (VaR) of asset or portfolio. By varying the confidence level, one is able to explore a whole risk profile.

VAR in fact is a probability based measure of loss potential. This means that VAR is the loss that would be exceeded with a given probability over specified time period but with

this perspective the VAR has underline the three important elements that must be disparagingly take into the consideration while applying VAR. First, VAR is the loss that would be exceeded as it is empirically tested & evaluated. Second, VAR is associated with given probability. It is the loss that would be exceeded with a given probability. Thus we would state that there is a certain percent chance that a particular loss would be exceeded. Finally, VAR is designed for specific time period. Therefore, the loss that would be exceeded with a given probability is a loss that that would be expected to occurs over a specified time period. There is a big difference among potential losses that are incurred daily, weekly, monthly, quarterly, or annually. In this research paper we should actually apply this particular framework of three main elements and targeted time period based on annual because this time period is more consistent with their performance reporting cycle.

According to Culp, Mensink and Neves (1998), VAR can be adopted for the use in asset management, large portfolio management and for the estimation of market risk in the long term horizon. In their study, they explore the application of VAR to asset management and portfolio risk management specially focusing on how the asset manager can potentially predict the amount of potential losses over specific trading period and how much is financial value of VAR loss at 95% & 99% confidence level. Though, these studies are targeted over the develop markets but their applicability to certain degree or in greater context extended on the emerging market models like Pakistan. In another relevant study, Dowd, Blake and Cairns (2004) tackle the problem of the estimation of VAR over longer time horizon. In their research they offer a different; however a rather straightforward, approach that avoids the inherited problems associated with risk return linear relationship, as well as those associated with attempting to extrapolate the day to day volatility forecasts over long horizons. Set against this background, the objective of this paper is to is to describe the whole strategic process of constructing different portfolios, calculation of their returns over define time period, on the basis of their mean return & variance then we find out the value of risk through different VAR methods, including the VAR model itself testing, and to the greater extent to test out the applicability of VAR model in emerging stock market models like Pakistan. Despite the fact that, many research studies have already been completed and many are in process on

the VAR testability and applicability on emerging markets but no studies in this particular area have explored the VAR calculation on quarterly basis and VAR Model itself testing in terms of true and perfect predictor of portfolio losses due to market risk exposures. This study not only test the VAR as model in terms of its accuracy & predictability of measuring the amount of losses from market risk but also tests & explores the various methods used in VAR calculation and their appropriateness keeping in view the market & portfolio specific return volatilities.

### **Review of the Literature**

Value at risk becomes such a vibrant & dynamic topic since 1990's that numerous studies are conducted to analyze its different methodologies and implications in various markets. This study also targets some of its methodologies & its statistical testing on emerging stock market like Pakistan. For this targeted purpose the following studies are benchmarks comparative studies and literature review is done here. Darbha (2001) investigated the value-at-risk for fixed income portfolios, and compared alternative models including variance-covariance method, historical simulation method and extreme value method. He finds that extreme value method provides the most accurate VaR estimator in terms of correct failure ratio. Cheong (2006) compared the power-law value-at-risk (VaR) evaluation with quintile and non-linear time-varying volatility approaches. A simple Pareto distribution is proposed to account the heavy-tailed property in the empirical distribution of returns. The results evidenced that the predicted VaR under the Pareto distribution exhibited similar results with the symmetric heavy-tailed long-memory ARCH model. However, it is found that only the Pareto distribution is able to provide a convenient framework for asymmetric properties in both the lower and upper tails.

Inui, Kijima and Kitano (2007) shows that VaR is subject to a significant positive bias. They show that VaR has a considerable positive bias when used for a portfolio with fat-tail distribution. Lima and Neri (2007) compared four different Value-at-Risk (VaR) methodologies through Monte Carlo experiments. Their results indicate that the method based on quintile regression with ARCH effect dominates other methods that require distributional assumption. In particular, they show that the non-robust methodologies

have higher probability of predicting VaR's with too many violations. McMillan and Speight (2007) investigated the value-at-risk in emerging equity markets. Comparative evidence for symmetric, asymmetric, and long memory GARCH models is also provided. In the analysis of daily index data for eight emerging stock markets in the Asia –Pacific region, in addition to the US and the UK benchmarks, they found both asymmetric and long memory features to be important considerations in providing improved VaR estimates. Pownall, and Koedijk (1999) examined the downside risk in Asian equity markets. They observe that during periods of financial turmoil, deviations from the mean-variance framework become more severe, resulting in periods with additional downside risk to investors. Current risk management techniques failing to take this additional downside risk into account will underestimate the true value-at-risk. Lan, Hu and Jhonson (2007) employed different combinations of re-sampling techniques, which include the bootstrap and jackknife. Unlike previous studies that only take into consideration the uncertainty of VaR arising from the estimation of conditional volatility, they also account for the uncertainty of VaR resulted from the estimation of the conditional quintile of the filtered return series. The jackknife seems to be very useful in improving forecast precision.

Bali and Cakici (2004) is among very few papers who consider the VaR from an asset pricing perspective. They investigated the relationship between portfolios ranked according to value-at-risk and expected stock returns. They conclude that value at risk, size and liquidity can explain the cross-sectional variation in expected returns, but market beta and total volatility have almost no power to capture the cross-section of expected returns at the stock level. Furthermore, the strong positive relationship between average returns and VaR is robust for different investment horizons and loss-probability levels.

Another study by Compbell (2005) reviewed both conditional and unconditional back testing methods and their suitability. On the basis of simulation experiments Compbell (2005) suggested that tests that examine several quartiles are most successful in identifying inaccurate VaR models. Lehikoinen (2007) introduced a framework for the improvement of the Backtesting process by empirically studying the real profit and loss data of bank portfolio against corresponding simulated data from the VaR model.

Lehikoinen (2007) formulated a detailed framework for sustainable development and improvement of the back testing and of the VaR model.

A significant study by Nieppola (2009) tried to evaluate the accuracy of the VaR estimation in the context of Finnish institutional investor. He applied and analyzed different methods of Backtesting on daily VaR estimates for three investment portfolios at three confidence levels, i.e. 90%, 95% and 99% for one year time period. Nieppola (2009) explored the accuracy and power of the Backtesting and most importantly, which tests are suitable for forthcoming model validation process in the company. Nieppola (2009) found that because of the normality assumption of VaR there are problems in the evaluation of Backtesting outcomes. The empirical evidence showed that VaR measures underestimated the risk, especially for equities and equities option.

Tse (1991) and Tse and Tung (1992) investigated Japanese and Singaporean data and found that an exponentially weighted moving average (EWMA) model produced better volatility forecasts than ARCH models. Pafka and Kondor (2001) analyzed the performance of RiskMetrics, a widely used methodology for measuring market risk. Based on the assumption of normally distributed returns, the RiskMetrics model completely ignores the presence of fat tails in the distribution function, which is an important feature of financial data. Nevertheless, it was commonly found that RiskMetrics performs satisfactorily well, and therefore the technique has become widely used in the financial industry. They found, however, that the success of Risk Metrics is the artifact of the choice of the risk measure. First, the outstanding performance of volatility estimates is basically due to the choice of a very short (one-period ahead) forecasting horizon. Second, the satisfactory performance in obtaining Value-at-Risk by simply multiplying volatility with a constant factor is mainly due to the choice of the particular significance level.

Most of the studies in the area of VaR are done either on the developed markets or developing markets and main focus of all these studies is to test out which VaR model perform well in given assumptions or market conditions. But, not various studies would try to identify which model perform well in define given market conditions & whether

the implications are tested against certain statistical tests. This study main focus is to test the VaR & its different methodologies on emerging market (Pakistan) and also whether results derived hold true in these markets as per VaR loss calculation criteria.

### **Research Design & Methodology**

The research is based on the sample data consists of KSE 100 index prices and for the period from 2002 to 2011. The daily prices of these 100 indexes are used as measure of their return and further analyzed to calculate the VAR through Variance Covariance & Historical Simulation (Parametric & Non Parametric) methods for different assets or portfolios. VaR is calculated on annual basis for the index on 95% & 99% confidence level and on the basis of their market capitalization a total value of loss in monetary terms is calculated. Study further proceeds as: in the first stage, we calculate the VAR through variance-covariance & historical simulation methods and in the second stage we test these VAR as Model for risk calculation through statistical techniques and through various measures.

### **Value at Risk & various Methods**

Value at risk aims to measure the potential loss on asset or portfolio of asset that would result if relatively large adverse price movements were to occur. Hence, at its simplest VaR requires the revaluation of asset or portfolio of asset using a given price shifts. Statistical techniques are used to select the size of those price shifts. In order to quantify the potential loss (and the severity of the adverse price to be used) two underlying parameters must be specified- the holding period under consideration and the confidence level. Each method requires a clear identification of holding period & confidence level in order to calculate the value of loss through VaR there are three widely used methods to calculate VaR but this paper focus is on only two methods which are as follows;

1. Variance-Covariance Method
2. Historical Simulation Method

### **Variance-Covariance method**

The Variance-Covariance method based on the assumptions that the return of an asset or portfolio of an asset is normally distributed described by its mean & standard deviation. The consequence of these assumptions is that VaR can be expressed as function of:

- The variance co-variance matrix for market price returns; and
- The sensitivity of the asset or portfolio of asset to price shifts

In this method here, we first compute the return from the prices, second the mean & then the standard deviation. Once we have the values for particular asset then we compute the VaR on annual basis through following formula;

At 95% significant level  $VaR = \mu_p - 1.65\hat{\sigma}$

At 99% significant level  $VaR = \mu_p - 2.33\hat{\sigma}$

The primary advantage of Variance Co-Variance method is its simplicity. Its primary disadvantage lies in the fact that it relies on the assumption of a normal distribution. In principal, there is no reason why a normal distribution is required, but if any other distribution is assumed, the calculation become somewhat more difficult because risk measures other than variance must be taken into account. For example the normal distribution is symmetric, but many distributions have skewness, making it impossible to estimate the VaR from the expected value and Variance alone.

### **Historical Simulation method**

The historical simulation uses data from the return of asset or portfolio of asset over a recent past period. It compiles these data in the form of histogram. From there, it become easy to identify the level of return that is exceeded with the probability of 5% or 1% whichever is preferred? The historical method has the advantage of avoiding any assumption about the type of probability distribution that generates the returns. The disadvantage however, is that this method relies completely on the events of past, and whatever distribution is prevailed in the past might not hold in the future.

When using the historical method, one must reflect any known changes such as portfolio composition. In addition instrument such as bonds & most derivatives behave differently at different times in their lives, so their behavior in the past must be adjusted if they remain in the portfolio going forward. So in this paper we used this particular method to calculate VaR both at 95% & 99% confidence level and in total value terms.

### Data & Findings

The below table shows descriptive statistics of KSE-100 index and its return in order to describe weather's the results of the data are significant & comparable or not. The index point is the main platform from where the return & distribution of return are generated. From these points & returns the value of VaR is calculated through variance-covariance & historical simulation. The mean value of the index is 8339.33 & market capitalization is 219.41 which reflects that loss calculated have the significance for company and to determine the requisite amount to be kept in reserves to cover the future potential losses. These results of indexes also reflects the comparability of data points over the targeted time period and & at the targeted significant level. The minimum & maximum value is also presented in order to describe the maximum & minimum value of indexes and on these bases how the loss in the form of value at risk is computed. The measures of dispersion SD & variance also shows that not much deviation exists in the indexes & values. The values of kurtosis & skewness are also insignificant reflecting that is capable of performing the various tests of value at risk and to compute the amount of loss.

	<i>Index Points</i>	<i>Volume (m)</i>
Mean	8339.334434	219.4186125
Standard Error	75.5061286	3.221395283
Median	9203.045	183.145
Mode	9187.1	127.84
Standard Deviation	3754.105183	160.1652336
Sample Variance	14093305.73	25652.90207
Kurtosis	-0.999438496	3.155883989
Skewness	-0.262517142	1.498374941
Count	2472	2472
Confidence Level (95.0%)	148.061813	6.316912743

The various results of VaR & its methods with statistical findings are shown below in the tables;

**Results of Variance-Covariance Method**

<b>time</b>	<b>VaR at 95%</b>	<b>VaR at 99%</b>	<b>value of portfolio (million)</b>
2002	-3.827797129	-5.611163693	165.9706827
2003	-7.369294321	-10.68802557	306.4919838
2004	-4.807906335	-6.982056117	340.4705622
2005	-10.49676776	-15.1082022	363.4883534
2006	-7.574445926	-10.72979969	257.1390871
2007	-4.492536616	-6.49764542	257.7058197
2008	-4.259787007	-5.836316743	133.457992
2009	-4.634464818	-6.696564242	171.2084553
2010	-1.763323477	-2.540785007	121.1054
2011	-1.340242607	-1.888567271	79.07826613
<b>Minimum VaR</b>	<b>-1.340242607</b>	<b>-1.888567271</b>	
<b>Maximum VaR</b>	<b>-10.49676776</b>	<b>-15.1082022</b>	

The result of this method in the table above shows the amount of VaR at 95% & 99% confidence level. The VaR value is calculated with the help of mean, standard deviation and variance which reflects that the value each year vary with respect to their mean & standard deviation. The Max & Min Value for the targeted time period is also calculated at both confidence levels. This amounts shows that the KSE index minimum loss is the result of adverse movement in the prices over targeted period and how much that index loss in one particular year in terms of financial loss. Here, the VaR is calculated on annual basis because this time period is considered as more consistent with the reporting cycle of these indexes. Because most of the companies report their losses either on quarterly, semiannual & annual basis. This annual loss is the best reflection of financial loss due to adverse movement in the prices of these companies. The main assumption in this method is that the return follows a normal distribution described by its mean &

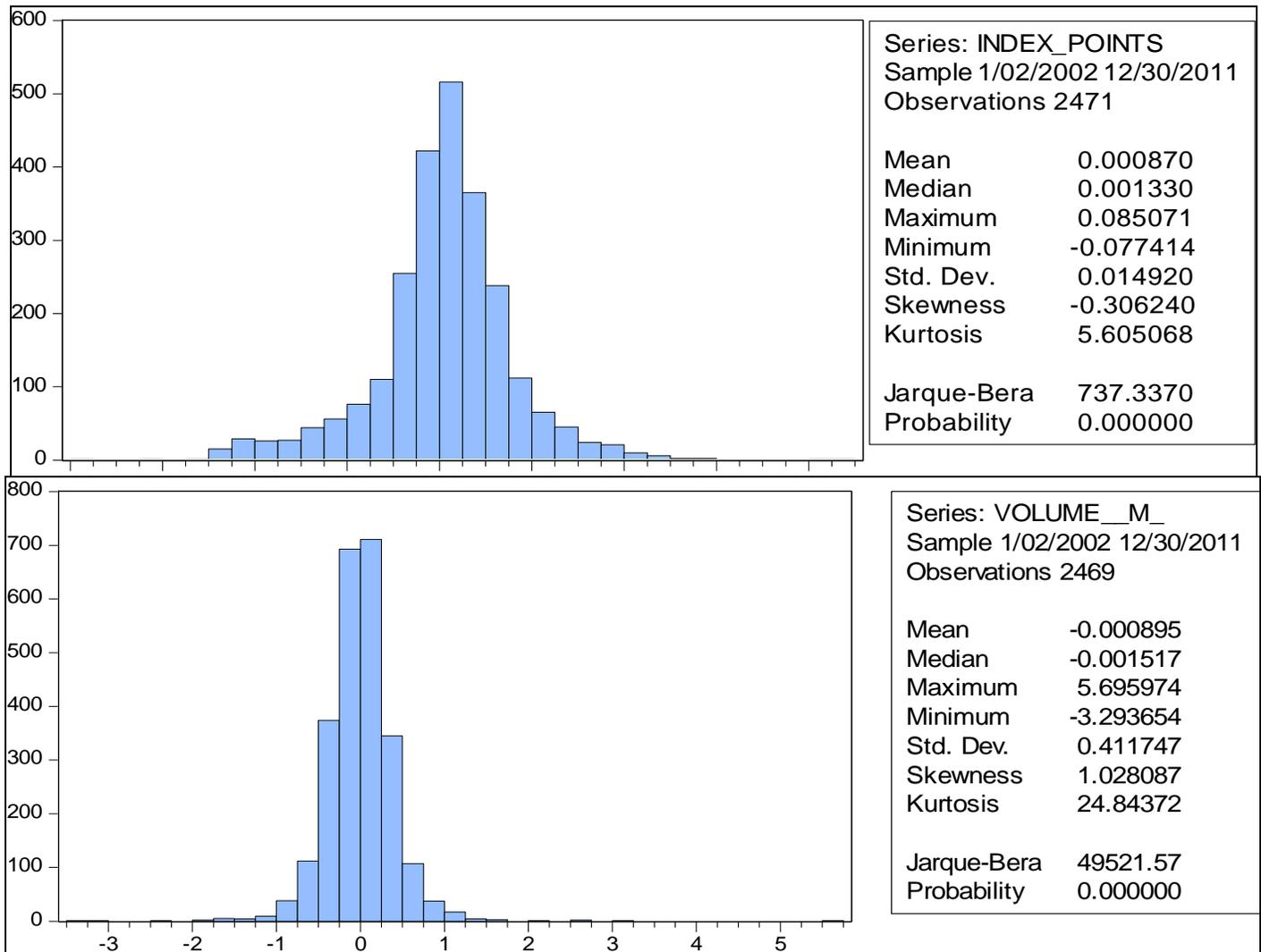
standard deviation. If the return of these distribution follows some other distribution then the results are completed inaccurate & do not reflect the true loss value.

**Results of Historical Simulation method**

<b>time</b>	<b>95%</b>	<b>99%</b>	<b>value (million)</b>
2002	-3.469592575	-7.330850298	165.9706827
2003	-7.828333636	-13.17950581	306.4919838
2004	-5.828489843	-10.30911115	340.4705622
2005	-13.40176761	-15.96419908	363.4883534
2006	-9.313933118	-11.04697097	257.1390871
2007	-5.226379869	-9.092800564	257.7058197
2008	-5.2740844	-5.916584166	133.457992
2009	-4.203900864	-7.710619265	171.2084553
2010	-1.675025301	-3.39299874	121.1054
2011	-1.376519375	-2.328909258	79.07826613
<b>Minimum VaR</b>	-1.376519375	-2.328909258	
<b>Maximum VaR</b>	-13.40176761	-15.96419908	

The table above shows the amount of loss calculated through VaR & historical simulation method of KSE 100 index from 2002 to 2011 and also minimum & maximum loss over ten year period. The VaR here do not assume that the returns are normally distributed but any distribution of return should be considered to calculate VaR. In this the adverse or negative return from the entire sample is set side separately than these adverse or negative returns are organized in ascending order. Once the returns are organized in ascending order then on the basis of significant (95% & 99%) level percentile value is computed which reflect the amount of VaR of a particular year. The historical simulation results in comparison with the Variance-Covariance method are more strong & authentic because the distribution generated in the graphs below also shows the return do not follows a normal distribution and merely follows different trend & movement over time period of ten years. In terms of comparison simulation method results here are more strong and reliable as compare to other method.

### Distribution of return (2002-2011) statistical description & test of normality



The above graph of returns shows that the distribution of return is not normal as assumed by Variance-Covariance method which is questionable. The basis of decision here is the values of Jarque-Bera & Kurtosis. The value of Jarque-Bera is (49521.57 & 737.3370) is very significant which reflects that the distribution is non-normal. Similarly, the Kurtosis value (24.84 & 5.60) also reflects that return of the distribution follows non-normal distribution pattern. So in Variance-Covariance methods assumptions of normal distribution return do not hold true and VaR result is not valid. The Historical simulation method is the best method as compared to Variance-Covariance method because this method does not assume the normality of returns. In terms of comparison the historical

simulation method results are more valid used to calculate the value of loss over targeted time period. To the extent that there is positive skewness in the distribution of returns, the variance-covariance VaR calculation will overestimate the true risk, offsetting any underestimation resulting from the failure to capture the leptokurtosis (fat tails) of the distribution.

## **Conclusion**

In this paper we have examined one of the very popular and widely used techniques to measure the market risk called the value at risk (VaR). The two methods of VaR are used to calculate the amount of loss over targeted time period of ten years. The variance-covariance method & historical simulation method are used to calculate amount of annual VaR. Further these two methods are also compared in terms of their estimation & predictability. The variance-covariance method is applied on the basis that the return of distribution follows a normal pattern but from the analysis it is finds that return distribution here do not follow normal distribution and the results from variance-covariance method over estimate or under estimate the value of loss. So the variance-covariance method is not the best method to calculate the amount of loss in this case and in case distribution is non-normal. Historical simulation method in this case is the most appropriate and best to compute the value of loss because this method does not assume the return from where the value at risk is calculated follow certain standard normal distribution. The results of historical simulation method are more accurate and nearer to actual loss and also there are less chances that the large deviation occurs in the real results. So in terms of comparison the historical simulation is the best method to be preferred & used to compute the loss from market exposure or due to the adverse movement in the prices of listed stocks or portfolio of stocks.

The results of the study also support that the VaR is the important figure for many individual & institutional investor in order to keep the required capital to cover up regulatory requirement. Similarly, the results of kurtosis & skewness also support the use of historical simulation method to calculate the VaR amount because the distribution of return do not based on the assumptions of normal returns. Though the study cover the

very limited area in the area of market risk measurement but the results of the study are consistent with the previous studies and are applicable in the emerging markets.

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## **The Impact of Mergers and Acquisitions on Firms Performance: An Event Study Approach**

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### ***Abstract***

*This paper examines the impact of pre and post mergers and acquisitions on the performance of Pakistani banking sector during the period 2002 to 2011. The sample consists of eight banks operating in Pakistan. For data analysis the method are used; stock market approach and accounting approach. The results from stock market approach shows that investors can generate cumulative average abnormal returns (CAARs) through prior merger announcement. The result through accounting method shows that there is no impact of pre and post mergers and acquisitions on firm's performance. The deviation in results of both methods as that in stock market approach people gives more importance to information while in accounting method one can deeply study the overall financial position of the firm's. We conclude that there is no impact merger and acquisition on firm's performance in Pakistan.*

**Keywords:** *Pre and Post-Merger, Pre and Post-Acquisition, Event Methodology, Banking sectors*

### **Introduction**

During the past few years, mergers and acquisitions are increasing in the banking sectors of Pakistan. This increasing trend showing by Pakistani banks is due to the instructions of State Bank of Pakistan (SBP) to commercial banks to increase their capital to Rs. 6 billion up to December 2009. It is difficult for some banks operating in the local industry to fulfill the capital requirement. The gap between their capital and the required capital of 6 billion is too much, and it is not cover from equity injection or re investment of their profit. To meet requirement of capital, the only choice is to merge or acquire a firm/s.

In today's globalized world, the concept of merger and acquisition are being increasingly used for the purpose to improve competitiveness, for entering to the new geographies and market reduce business risk through broadening the portfolio, and to achieve economies

of scale (Kemal, 2011). The reason behind merger is that two companies are better than one, because they increase shareholders wealth more than that of two separate firm's operating (Sharma, 2009).

Generally, merger is the combination of two or more companies to form a single company. In the perspective of finance, the purchasing equity share of one or more companies by a single existing company. Merger is divided in to various types, such as horizontal merger, vertical merger, co generic merger and conglomerate merger. Merger between two companies having the same industry and segment are called horizontal merger. For example if there is a merger between Bata and Service this merger will called horizontal merger because they compete in the same industry and have same market segments. When two companies having the same industry but a different market segment is called vertical merger. Merger between two companies from the same industry but offering different products are called congeneric merger. Example of such mergers is insurance companies and banking services are from the same industry but offering different products to the market. Merger between two firm's having not belong from the same industry and have not produce the same products are called conglomerate merger. Example of such merger is the merger between Pepsi Co and PTCL, both of these firm's have different industry and offer different products to the market.

On the other hand, acquisition is defined as, when one company takeover another company and manage its operation. The main difference between merger and acquisition is, that merger is the combination of two or more companies, whereas acquisition is the takeover of one company over other. In merger, management of both firms' combines to share experiences, expertise, skills, and knowledge whereas in acquisition the acquirer firm or parent company will manage the new entity. Merger will take place with the consult of both parties management while acquisition maybe friendly takeover or hostile takeover. In friendly takeover, the management of the target company agreed to be acquired while in hostile takeover the management of the target company are not agreed to be acquired. The motives behind mergers and acquisitions (M & A) is to increase market share and revenues, create synergy, economies of scope, economies of scale, geographical and other diversification (Kemal, M. U. 2011).

### **Theoretical Background of the study:**

All marriages are decided on heaven; it's the life afterwards that makes trouble. Theoretically it is assumed that merger improve performance of the firm's due to increased market power, synergy impact and other qualitative and quantitative factors. The two main theories of merger and acquisition are; value increasing theory and value decreasing theory of merger and acquisition.

#### **Value Increasing Theory**

According to this theory merger, take place because it creates synergy and as a results increase the value of the firm. Barkovitch & Narayanam, (1993) explored that higher the synergy, higher will be the target gains as well as the benefits of the acquiring firm's shareholders. Due to merger or acquisition two types synergies are created; operational synergy and financial synergy. Operational synergy is the achievement of administrative production efficiencies (Chatterjee, 1986), whereas financial synergy is the reduction in the cost of capital and produce better cash flows (Fluck& Lynch, 1999).

#### **Value Decreasing Theory**

According to this theory, merger and acquisition can leads to managerial hubris, agency problem and free cash flow theory that decrease the value of the firm. According to Hubris hypothesis, when acquiring a firm's managers look for their personal interest first and gives second priority to the economic gains of the firm as a result the value of the decreases (Roll, 1986). Same as the hubris hypothesis, agency problem arises when manager's focus on their own interest instead of the firm's interest at the expense of shareholder's (Berkovitch& Narayanam, 1993).

#### **Significance of the Study**

Merger and acquisition is considered one of the principal tools for corporate restructuring. There is a sharp increase in both the number and size of merger and acquisition transactions throughout the world. Financial restructuring through mergers and acquisitions evokes a great deal of public interest and perhaps represent the most dynamic facet of corporate strategy. In developing economies like Pakistan such study will help to identify whether merger and acquisition are beneficial for corporations. By considering these important facets, the research has undertaken this study.

### **Research Questions**

Is there any effect of pre and post merger & acquisition on firm's performance?

Is there any effect of pre and post merger & acquisition on share price of the selected firm's?

### **Objectives of the Study**

To find the relationship between pre and post mergers & acquisitions on firm performance.

To find the relationship between pre and post merger & acquisition on share price of the selected firms.

### **Review of Literature**

Andrade, G; Mitchell, M. & Stafford, E. (2001) studied the impact of mergers on corporate operating performance. By examining pre and post merger financial ratios of the selected firms from 1991 to 2003. They found that, due to mergers minor variations will occur in the operating performance of the selected firms.

Nalwaya, N; & Vyas, R. (2012) explored the post-merger financial performance analysis of the selected banks in India. The study found that a positive impact of merger in the profitability of the selected banks. The higher earnings growth was found in the selected banks. In addition, dividend growths were observed in the selected firms.

Kumara, M; & Satyanarayana, (2013) studied the pre and post corporate integration through mergers and acquisitions in India. By selecting ten major companies the result showed a significant positive value creation to the acquired firms. Ghosh, (2011) also found a significant positive effect of merger & acquisition on firms operation performance, while HBR, (2011) found that 70% of merger & acquisition are failed to create value to the firm.

Selvan & Vanitha, (2007) found that merger & acquisition improve the performance of the firms. Manthradhi & Reddy, (2008) found a positive effect of merger & acquisition on firms' liquidity in banking and finance sector, while there is a reduction in liquidity, profitability and return on assets on textile, electrical and pharmaceutical firms.

Mylonidis & Kelnikola, (2005) studied mergers in Greek banking system. They found that there is no impact of merger on the operating performance of the selected banks.

Burki & Ahmad, (2008) explored the impact of changes in governance of banks on the

performance of commercial banks in Pakistan. They found that banking performance improve due to financial reforms. Kemal, U, M. (2011) studied the post merger profitability of Royal Bank of Scotland (RBS) in Pakistan. The study found that there is no impact of merger on the performance of RBS.

Khan, A, M; Kayani, F; & Javid, A. (2011) explored the effect of merger and acquisition on market concentration and interest rate spread in the banking industry of Pakistan. They found that profitability of the selected banks is declines as results of mergers. Siems, (1996) studied 24 US banks mega-mergers by using event study methodology in 1995. He found that the shares of acquirer fell by 1.96%. Vennet, V. (1996) explored European banks mergers by using accounting data and the efficient approach. The accounting data consists of return on equity, asset utilization and return on asset and so forth.

Athanasogou & Brissimis, (2004) studied pre-merger and post-merger data by using operating performance methodology. They found that there is a positive effect of merger and acquisition on bank performance. Kavussanos & Dockery, (2001) studied the Athens Stock Exchange and found that it is inefficient market which means that past stock prices predict future stock prices. Liargovas, P. & Repousis, S. (2011) explored the impact of mergers and acquisition on performance of the Greek banking sector by using event study approach. Their finding showed that there is no impact of merger and acquisition on Greek banks performance. Selcuk, E. & Yilmaz, A. (2011) explored the impact of merger & acquisition on acquirer performance in Turkey. They select a sample of 62 companies involves in mergers & acquisitions deals from 2003 to 2007. They found that both accounting data and stock market showed negative effect of merger & acquisition.

### **Hypothesis of the Study**

Literature led us to develop the following hypothesis;

**H<sub>01</sub>:** There is no effect of pre and post merger & acquisition on firm's performance.

**H<sub>1</sub>:** There is an effect of pre and post merger & acquisition on firm's performance.

**H<sub>02</sub>:** There is no effect of pre and post merger & acquisition on share price of the firm's.

**H<sub>2</sub>:** There is an effect of pre and post merger & acquisition on share price of the firm's.

### **Methodology**

The sample of the study consists of all banks listed in Karachi Stock Exchange (KSE) websites and involves in mergers and acquisitions deals were selected for the study.

Based on mergers and acquisitions (M & As) deals and availability of data, data period was selected from 2002 to 2011. A total of ten banks including in M & A deals were selected for the study. An M & A deals between non-listed firms or those having non availability of data were excluded from the study. By using accounting method we compare two years pre and post merger and acquisition, hence those firms having relevant data are not available are also excluded from the study. If firms involves in more than one deal the largest deal will be considered, the reason is to avoid event window overlapping. In our study Summit Bank perform two deals with Atlas Bank and My Bank in 2011, so the largest one will be considered for the study. By applying these restrictions, only ten banks were selected for the study.

### **Performance Measurement**

In order to assess the impact of merger and acquisition on performance we use two approaches: stock market approach and accounting approach.

### **Stock Market Approach**

The objective of the study is to investigate the impact of merger and acquisition (M &A) on Pakistani banks performance. In order to achieve the above objective, an event methodology was use to know whether shareholders earns any abnormal returns around merger and acquisition announcements. The assumption of event study is that, an abnormal return will generate if information deliver to the market are useful and surprising, thus motivates shareholders or investors in positive way. In other words, the reaction of investors to specific information or events that take place in the market.

The first step of event methodology is to identify the sample of the study. In our study the sample, consist of ten banks listed on KSE from 2002 to 2011 are selected. During this period, other factors that influence share prices are ignore from the study. In the second step of event study 20 days (ten days before merger and ten days after merger), were taken. From this data an event window were calculated, which is five days before merger and five days after merger. The selection of five days before period is that any information regarding the event is leak to the market before the official announcement, will adjust in security prices. The third step is to predict expected returns during the event window. This can be calculating through CAPM model. After that an abnormal returns will calculated, which is obtain by subtracting expected returns from real returns of a

securities. The next step is to calculate individual securities T value (T-AR), which is simply dividing abnormal returns over error term. After that cumulative average returns (CAR) will be calculated, which is simply the sum of abnormal returns. Finally, we calculate T-CAR through which we identify whether merger and acquisition improve shareholders wealth or get abnormal returns. If the T-CAR value is greater than 1.96 then it will be significant and if lower than 1.96 then it will be insignificant.

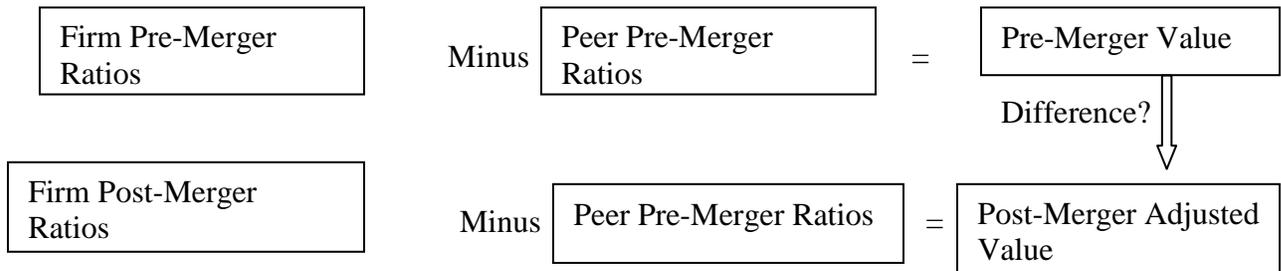
**Accounting Approach**

The second approach through which we identify the impact of merger and acquisition on firm’s performance is accounting approach. In accounting approach we use historical financial data and see either the performance of the firms improve after merger and acquisition. For this purpose, the study uses the following two ratios;

ROA: return on assets which is net income/ total assets

ROE: return on equity which is net income/ total equity

Calculating these ratios, will lead to misleading results because changes in these ratios may be due to other factors such as economic condition or market fluctuations? To isolate the effect of acquisition, a literature suggests an adjustment for the industry trend. As a proxy for industry trends, we determine a peer company. The peer company is the one which is not involved in merger or acquisition deal during the sample period.



For each sample company these financial ratios are calculated for two years before (year T<sub>-1</sub> and T<sub>-2</sub>) and two years after (year T<sub>+1</sub> and T<sub>+2</sub>), then we compare the results of pre and post merger activities on firms performance.

**Empirical Results**

The results through stock market approach indicate that there is an impact of merger and acquisition on firm’s performance. We know that if T-CAR value is greater than 1.96 then there will be a significant impact of merger and acquisition on firm’s performance.

We select ten days before the event can take place and ten days after the event. The reason to select the pre merger period is that if there is any information leaked to the market will affect the share prices. If we see from table one, first three days of pre-merger period of Faysal bank shows no significant impact of merger and acquisition on share prices. However, when the information leaked to the market will effect on the share prices as seen from the table one. The significant impact will see from seven days before merger until the event window. When investors knows about a merger between two firms they expect that a firm have financially stable and wants to invest, such good news will motivates to buy the shares of parent firm, as a result the share price of the parent company will move upward. Dealing and trading through stock exchange is the game of human behavior, good news about firms will invites to invest in the shares of firms. The results from table one shows that KASB bank merger deal will not motivates investors to buy their shares and improve share price of the respective firm. Improvements in share prices of other banks will see from table one. The highlight row shows the event date on which the merger will take place. The data above the highlighted row will represent pre-merger period and the data below represent post-merger period. Therefore, stock market approach shows that there will a significant impact of merger and acquisition on firm's performance in Pakistani context.

The share price of KASB bank will move upwardly before merger event, when market aware about the deal will respond adversely as seen from the table. The day, on which the KASB bank merger will take place, the value of T-CAR will go down from 1.96, which shows insignificant impact of merger on firm performance, and as a result, shareholders cannot earn abnormal returns. In addition, the effect will be seen up to next few days.

**Table 1**

Faysal Bank		NIB Bank		Summit Bank		Standard Chtd Bank	
T-CAR	Sig	T-CAR	Sig	T-CAR	Sig	T-CAR	Sig
-1.267	No	0.162	No	-3.962	Yes	-0.167	No
0.018	No	-1.541	No	-4.323	Yes	5.638	Yes
1.252	No	-5.388	Yes	-5.056	Yes	13.547	Yes
2.621	Yes	-6.115	Yes	-5.284	Yes	29.906	Yes

3.976	Yes	-2.663	Yes	-5.452	Yes	48.136	Yes
5.213	Yes	-6.413	Yes	-3.412	Yes	64.856	Yes
6.344	Yes	-10.176	Yes	-3.864	Yes	71.663	Yes
7.690	Yes	-10.221	Yes	-5.011	Yes	67.353	Yes
8.899	Yes	-8.371	Yes	-5.129	Yes	63.454	Yes
10.141	Yes	-10.928	Yes	-8.066	Yes	75.746	Yes
11.371	Yes	-11.433	Yes	-11.038	Yes	70.061	Yes
12.594	Yes	-10.496	Yes	-8.791	Yes	81.757	Yes
13.781	Yes	-10.469	Yes	-9.275	Yes	89.100	Yes
15.006	Yes	-12.118	Yes	-11.533	Yes	91.634	Yes
16.271	Yes	-12.159	Yes	-16.584	Yes	98.049	Yes
17.588	Yes	-10.663	Yes	-17.549	Yes	102.423	Yes
19.014	Yes	-6.895	Yes	-21.733	Yes	109.858	Yes

**Table 1 Continue**

KASB Bank		Askari Bank Ltd		JS Bank Ltd		Atlas Bank Ltd		ABL Bank Ltd	
T-CAR	Sig	T-CAR	Sig	T-CAR	Sig	T-CAR	Sig	T-CAR	sig
8.999	Yes	-1.432	No	4.041	Yes	0.299	No	0.570	No
8.463	Yes	0.727	No	1.781	No	-4.236	Yes	1.109	No
3.282	Yes	5.530	Yes	7.643	Yes	-3.993	Yes	1.676	No
9.599	Yes	5.793	Yes	6.982	Yes	-5.180	Yes	2.141	Yes
-2.451	Yes	7.136	Yes	10.407	Yes	-7.704	Yes	2.613	Yes
2.537	Yes	7.902	Yes	15.518	Yes	-10.571	Yes	3.150	Yes
7.779	Yes	8.447	Yes	19.897	Yes	-11.512	Yes	3.689	Yes
-0.392	No	9.386	Yes	24.474	Yes	-10.001	Yes	4.361	Yes
1.227	No	14.616	Yes	33.147	Yes	-8.783	Yes	4.949	Yes
0.808	No	13.758	Yes	47.438	Yes	-9.174	Yes	5.493	Yes
-6.012	Yes	14.208	Yes	55.163	Yes	-8.327	Yes	6.058	Yes
2.194	Yes	13.833	Yes	56.525	Yes	-6.146	Yes	6.522	Yes
1.655	No	13.264	Yes	58.398	Yes	-7.858	Yes	7.053	Yes
0.822	No	-6.313	Yes	60.293	Yes	-7.005	Yes	7.530	Yes
-1.442	No	-5.824	Yes	67.044	Yes	-8.372	Yes	8.048	Yes
-0.639	No	-7.459	Yes	72.346	Yes	-7.472	Yes	8.034	Yes
-0.543	No	-6.346	Yes	70.347	Yes	-6.436	Yes	6.325	Yes

**Accounting Approach**

The result through accounting approach shows that there will no impact of merger and acquisition on firm’s performance. The study select two ratios return on assets and return

on equity to analyze the impact of merger and acquisition on firm's performance. For this purpose two years before ( $T_{-1}$  and  $T_{-2}$ ) and two years after merger ( $T_{+1}$  and  $T_{+2}$ ) were select. For each sample firms these ratios were calculated for five years period. The red row in the table shows the event year. The year above the red line, indicate pre-merger period and the years below the red row shows post-merger period. There is no significant different in pre and post mergers data of these ratios so there have no impact of mergers on firm's performance.

**TABLE 2**

<b>Faysal Bank</b>	<b>ROA</b>	<b>ROE</b>		<b>ROA</b>	<b>ROE</b>
	0.02	0.22	<b>Standard Chtd bank</b>	0.03	0.11
	0.02	0.17		0.05	0.18
	<b>0.03</b>	<b>0.19</b>		<b>0.04</b>	<b>0.26</b>
	0.06	0.34		0.06	0.38
	0.02	0.18		0.06	0.24
<b>Allied Bank</b>	0.03	0.43	<b>NIB bank</b>	0.02	0.24
	0.04	0.54		0.01	0.05
	<b>0.04</b>	<b>0.59</b>		<b>0.02</b>	<b>0.11</b>
	0.03	0.56		0.03	0.13
	0.04	0.63		0.02	0.22
<b>Atlas Bank</b>	0.01	0.05	<b>KASB Bank</b>	0.02	0.15
	0.02	0.09		0.01	0.04
	<b>0.01</b>	<b>0.04</b>		<b>-0.01</b>	<b>-0.09</b>
	0	0.01		0	-0.02
	0.02	0.15		-0.01	-0.16
<b>JS bank</b>	0	0	<b>Askari Bank</b>	0.038	0.597
	0	0		0.036	0.604
	<b>0</b>	<b>0</b>		<b>0.032</b>	<b>0.626</b>
	0	0		0.029	0.566
	0.03	0		0.003	0.053

Return on assets (ROA) of Faysal bank before merger is .02 for period  $T_{-1}$  and .02 for the period  $T_{-2}$ . Return on equity (ROE) of Faysal bank before merger is .22 in period  $T_{-1}$  and .17 in  $T_{-2}$ . In the event year, ROA of Faysal bank is .03 and ROE is 0.19. The post merger ROA is .06 in period  $T_{+1}$  and .02 in period  $T_{+2}$ . Post merger ROE is .34 in  $T_{+1}$  and .18 in

$T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Allied bank before merger is .03 for period  $T_{-1}$  and .04 for the period  $T_{-2}$ . Return on equity (ROE) of Allied bank before merger is .43 in period  $T_{-1}$  and .54 in  $T_{-2}$ . In the event year, ROA of Allied bank is .04 and ROE is 0.59. The post merger ROA is .04 in period  $T_{+1}$  and .03 in period  $T_{+2}$ . Post merger ROE is .56 in  $T_{+1}$  and .63 in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Atlas bank before merger is .01 for period  $T_{-1}$  and .02 for the period  $T_{-2}$ . Return on equity (ROE) of Atlas bank before merger is .05 in period  $T_{-1}$  and .09 in  $T_{-2}$ . In the event year, ROA of Atlas bank is .01 and ROE is 0.05. The post merger ROA is zero in period  $T_{+1}$  and .20 in period  $T_{+2}$ . Post merger ROE is .05 in  $T_{+1}$  and .15 in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of JS bank before merger is zero for period  $T_{-1}$  and zero for the period  $T_{-2}$ . Return on equity (ROE) of JS bank before merger is zero in period  $T_{-1}$  and 0 in  $T_{-2}$ . In the event year, ROA of JS bank is zero and ROE is zero. The post merger ROA is zero in period  $T_{+1}$  and .03 in period  $T_{+2}$ . Post merger ROE is zero in  $T_{+1}$  and zero in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Standard Chtd bank before merger is .03 for period  $T_{-1}$  and .05 for the period  $T_{-2}$ . Return on equity (ROE) of Allied bank before merger is .11 in period  $T_{-1}$  and .18 in  $T_{-2}$ . In the event year, ROA of Allied bank is .04 and ROE is 0.26. The post merger ROA is .06 in period  $T_{+1}$  and .06 in period  $T_{+2}$ . Post merger ROE is .38 in  $T_{+1}$  and .24 in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of NIB bank before merger is .02 for period  $T_{-1}$  and .01 for the period  $T_{-2}$ . Return on equity (ROE) of NIB bank before merger is .24 in period  $T_{-1}$  and .05 in  $T_{-2}$ . In the event year, ROA of NIB bank is .02 and ROE is 0.11. The post merger ROA is .03 in period  $T_{+1}$  and .02 in period  $T_{+2}$ . Post merger ROE is .11 in  $T_{+1}$  and .13 in

$T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of KASB bank before merger is .02 for period  $T_{-1}$  and .01 for the period  $T_{-2}$ . Return on equity (ROE) of KASB bank before merger is .15 in period  $T_{-1}$  and .04 in  $T_{-2}$ . In the event year, ROA of KASB bank is -.01 and ROE is -0.09. The post merger ROA is zero in period  $T_{+1}$  and -.01 in period  $T_{+2}$ . Post merger ROE is -.02 in  $T_{+1}$  and -.16 in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

Return on assets (ROA) of Askari bank before merger is .038 for period  $T_{-1}$  and .036 for the period  $T_{-2}$ . Return on equity (ROE) of Askari bank before merger is .597 in period  $T_{-1}$  and .604 in  $T_{-2}$ . In the event year, ROA of Askari bank is .032 and ROE is 0.626. The post merger ROA is .029 in period  $T_{+1}$  and .003 in period  $T_{+2}$ . Post merger ROE is .566 in  $T_{+1}$  and .053 in  $T_{+2}$  periods. This result shows that after post- merger there is an improvement in these variables.

The contrast between stock market approach and accounting approach will see in the study. The reason is that in accounting approach one can analyze the firms in detail i.e. detail study of financial position, profit and loss account, and cash flow statement whereas in stock market approach investors can give weight to the information not to the accounting information. In addition, if we see the variation in data from stock market approach that is so minor, so there effect will be ignore in ratio analysis.

### **Conclusion**

In today's globalize world, the concept of merger and acquisition are being increasing used for the purpose to improve competitiveness, for entering to the new geographies and market reduce business risk through broadening the portfolio, and to achieves economies of scale (Kemal,2011). The reason behind merger is that two companies are better than one, because they increase shareholders wealth more than that of two separate firm's operating (Sharma, 2009).

The objective of the study is to investigate the impact of merger and acquisition on firm's performance. For this purpose a sample of eight banks listed on Karachi stock exchange were select from 2002 to 2011. To analyze the impact of merger and acquisition two approaches were used i.e. stock market approach and accounting base approach. The

result from stock market approach shows that there will an impact of merger on Pakistani banks performance and hence investors can generate abnormal returns. While the results from accounting base approach show that, there is no impact of merger on Pakistani banks performance. There will contradiction in results of both approaches. The reason is that stock market approach depends on behavior and gives more importance to information, while accounting approach depends on detail study of financial position, income statement, and cash flow statement of the firm. Therefore, we conclude from the study that there will no impacts of mergers on Pakistani banks performance. The results are consistent with Yilman & Selcuk 2011, Kumara & Satyanarayana 2013, Kithitu & Keraro 2012, Adebayo 2012, Joshua 2011.

Although the study have important contribution to the field but there is certain limitations as well; the sample of the study is too small, the period of event window is also too small, the study only focus on banking sectors and so on. So one can work on these limitations, by selecting a large sample size, increase event window period, and considered other sectors for future research to further contribute in the field.

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## **Impact of Emotional Intelligence on Career Decision Making Self Efficacy among Students of Pakistani Universities**

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### ***Abstract***

*The relationship between emotional intelligence and career decision making self-efficacy has been measured in this study. Study revealed a significant and positive relation of intrapersonal abilities, interpersonal abilities and adaptability on career decision making self-efficacy. Business students of Islamabad campuses of NUML, & COMSATS, Pakistan were taken as population. Among all emotional intelligence factors; intrapersonal abilities placed most significant impact on career decision making career self-efficacy. Pearson correlation and linear regression was used to examine the relationship among study's variables.*

**Key words:** *Emotional Intelligence, Career decision making self-efficacy, Pakistani Universities, Intrapersonal abilities, Interpersonal abilities, Adaptability, General mood, Stress management*

### **INTRODUCTION**

The role of emotional intelligence has received attention in the career development literature recently. Kidd (1998) argued that affect, besides cognition, is a crucial element in career choice and behavior. Likewise, Caruso and Wolfe (2001) emphasized that emotion assumes a critical role in career development, and choice. Hence, the emotional aspects of career development and the importance of assessing emotional processes in career counseling research and practice are of interest.

Grounded on the historic studies toward contextualizing concepts of emotions and intelligence, Young, et al. (1996) proposed a contextual action theory of career development, declaring emotions as a central to career decision making. They proposed that emotions exist within the framework of the whole and the whole encompasses many

intertwined and interconnected parts, all of which are deduced within the contexts of current events and dynamics of the person. Action theory approach to career development makes the role of emotion in building career implicit while asserting that career is built through everyday action. Young, et al. (1996) further proposed that emotion is linked with one's mission, goals, plans, and needs.

Young et al. (1997) further highlighted that the role of emotion, in galvanizing and motivating action, is involved in career exploration and decision-making activities describing how "career possibilities" and "career undesirables" are evaluated emotionally by parents and their children. They asserted that career is intensely related to emotions; hence, awareness of emotions in understanding career is vital.

Kidd (1998) studied for greater consideration to the role of emotion in career development, she emphasized that "emotional experience, expression, and communication be considered when discussing career decision making skills, career management skills, and career resilience". Cooper (1997) conveyed that those who trust and manage their feelings effectively could succeed a more successful career.

Agreed the arguments developed for the crucial role of emotional intelligence in the development of career and the limited previous research on the role of emotion in the career development process, an examination of the role of emotional intelligence related with career behaviors is necessitated. Moreover, in the context of relationship between emotions and career choice no significant and substantial studies have been conducted in Pakistani scenario. This study will examine the relationship between emotional intelligence and career decision making self-efficacy in the context of Pakistani students as well as the extent to which factors describing emotional intelligence are related to career decision-making self-efficacy of university students.

### **Emotional Intelligence**

The idea of emotional intelligence has been receiving great attention by the researchers since the last two decades of 20<sup>th</sup> century (Salovey & Mayer, 1990, Gardner, 1983, Goleman, 1995, Bar-On 1997). The essences of emotional intelligence can be drawn from the concept of 'social intelligence,' coined by E.L. Thorndike (1920), refers to "the ability to understand and manage people and to act sensibly in human relations".

Emotional Intelligence expanded acceptance with the work of Gardner (1983) who reported the concepts of intrapersonal and interpersonal intelligence.

Although Gardner (1983) did not use the term “emotional intelligence”; his notions of intrapersonal and interpersonal intelligences provided groundwork for future models of emotional intelligence. The crux of intrapersonal intelligence is the ability to know one’s own emotions and feelings, while the crux of interpersonal intelligence is the ability to understand others’ emotions and feelings. Goleman (1995, 1998) later on advanced the construct into the limelight.

In order to understand the role of emotions in career-related decisions and actions, researchers have originated emotional intelligence as a critical variable to career success (Goleman, 1995) and have explored that role of affective intelligence is may be even more influential than that of cognitive intelligence. The construct of emotional intelligence was introduced in the last two decades of the 20<sup>th</sup> century; both to academia (Salovey & Mayer, 1990) and to the lay public (Goleman, 1995).

According to Salovey and Mayer (1990), emotional intelligence incorporates Gardner’s (1983) interpersonal intelligence (i.e. ability to understand other people) and intrapersonal intelligence (i.e. ability to understand oneself). Salovey and Mayer, consequently, defined emotional intelligence as a sub piece of social intelligence that requires the ability to (a) efficiently manage psychological and social problems, (b) accurately explicit emotions and correctly assess the emotions of others, (c) self-regulate one’s own feelings and sentiments, and (d) use one’s emotions to achieve one’s goals.

The ability to control and manage one’s own scenario is believed to lead to greater insight and self-knowledge. Those who are expressed as emotionally intelligent are thought to possess a more fine-tuned potency in emotional self-awareness (Goleman, 1998). Accordingly, advocates of this construct argue that those who indicate higher emotional intelligence are more able to incorporate emotional experience into thoughts and actions. It seems sensible then that the ability to guide and control one’s thinking and actions, through the management of emotions, would be associated with how effective one is likely to feel when deliberating career related actions and tasks. In other words, proponents of emotional intelligence would likely argue that emotional experience could be used to contribute in the career exploration and decision making process.

Bar-On, (1997) described the view of emotional and social competencies that impact behavior and can be measured by the combination of self – report. Bar-On has continuously been working on the theory and measure of emotional intelligence since 1980. He systematically reviewed numerous theories and studies that focused on variables thought to be related to normal, optimal and diagnostic emotional and social functioning. Bar-On (2006) describes five composite scales-comprising 15 sub-scales; Intrapersonal (Self-awareness and self-expression), Interpersonal (social awareness and interpersonal relationship) Stress Management (Emotional management and regulation) Adaptability (Change management) General Mood (self-motivation), to measure emotional intelligence

### **Career Decision Making**

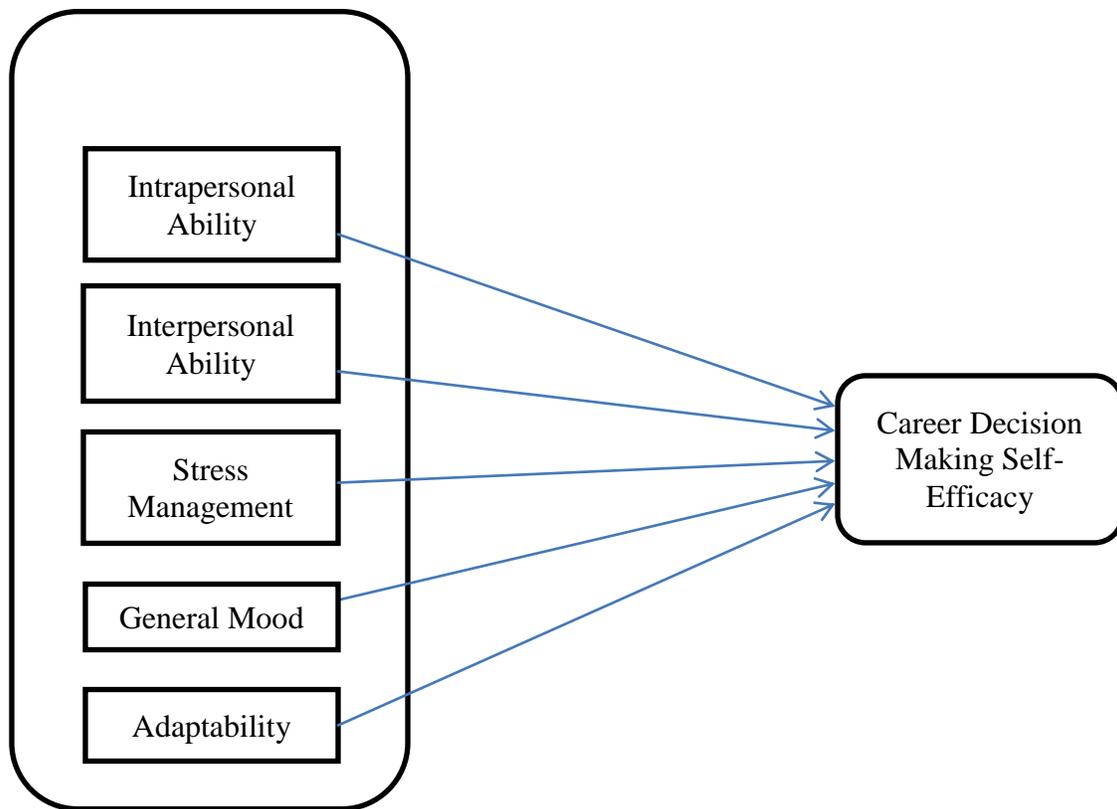
Career exploration is interpreted as purposive behavior and understandings that provide access to information in one's external environment and thus assist in career decision making and vocational adjustments (Blustein, 1989). Bandura's (1977) self-efficacy theory to career decision making is indicated as one's confidence in his or her ability to effectively perform career-related tasks (Hackett & Betz, 1981). Individuals with low self-efficacy for career decision making as compared to those with high self-efficacy may experience greater anxiety for decision-making tasks as well as more avoidance of such tasks. Empirical evidence regarding career choices and decision making have noticed that persons who continue without considering the benefits of career exploration are less likely to experience effective decision-making and employment outcomes than those who have participated in exploratory behavior (Greenhaus & Sklarew, 1981; Grotevant, et al. 1986). Likewise, career commitment has been concerned as yet another critical construct in the career development literature. In the wider context, commitment is expressed as a display of affirmation and confidence in ideas that are coherent with other beliefs and behavioral exhibitions (Marcia, 1980).

Certainly, there has been much investigation carried out on the career exploration, commitment, and decision-making processes, related to many variables that are thought to influence these behaviors. But only recently emotional intelligence has been suggested as another explanation of career development outcomes and/or career choice (e.g., Carson & Carson, 1998; Menhart, 1999).

Emotional Intelligence has gained significant importance in determining the career choice. Therefore, the objective of this study is to investigate the relations between career decision-making self-efficacy and emotional intelligence. Based on above discussion on emotional intelligence and career decision making self-efficacy; research questions were devised that all five factors of emotional intelligence are significantly related with career decision making self-efficacy, which led to develop following conceptual model.

### **Conceptual Framework**

#### **Emotional Intelligence**



Source: Self Construct

### **METHODOLOGY**

#### **Participants**

The participants in the study were 99 (43 female, 56 male) university students currently enrolled in National University of Modern Languages, Islamabad and COMSATS,

Islamabad. Data was particularly collected from business students at Bachelors and Masters Levels. Most students lie between the age group of 21-23 years.

**Table 1: Gender**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid male	56	56.6	56.6	56.6
Valid female	43	43.4	43.4	100.0
Total	99	100.0	100.0	

**Table 2: Age**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 18-20	15	15.2	15.2	15.2
Valid 21-23	40	40.4	40.4	55.6
Valid 24-26	27	27.3	27.3	82.8
Valid 26-28	17	17.2	17.2	100.0
Total	99	100.0	100.0	

### **Instruments**

The instruments used in the study were based on The Emotional Quotient Inventory (EQ-i),(Bar-On, 1997), to assess Emotional Intelligence and The Career Decision Self-Efficacy Scale–Short Form (CDSES-SF) (Betz, Klein, & Taylor, 1996), to measure self-efficacy expectations for career decision-making tasks. Sample has been chosen using convenient sampling from students of Islamabad campuses of NUML, COMSATS.

**RESULTS**

**Table 3: Correlation Analysis**

		intra	inter	strmgt	Adap	genmd	Cdmse
Intrapersonal	Pearson Correlation		-.003	.150	.436**	.140	.341**
	Sig. (2-tailed)		.978	.139	.000	.166	.001
	N		99	99	99	99	99
Interpersonal	Pearson Correlation			-.017	.219*	.071	.198*
	Sig. (2-tailed)			.868	.030	.485	.049
	N			99	99	99	99
Stress mgt	Pearson Correlation				.239*	-.011	.072
	Sig. (2-tailed)				.017	.912	.477
	N				99	99	99
Adaptability	Pearson Correlation					.158*	.207*
	Sig. (2-tailed)					.098	.040
	N					99	99
General mood	Pearson Correlation						-.084
	Sig. (2-tailed)						.408
	N						99

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Using Pearson product–moment correlation analyses the relationships between the five Emotional Intelligence factors, and career decision-making self-efficacy were examined. Findings of these analyses revealed that there exist significant and positive relation exist between career decision making self-efficacy and three of the emotional intelligence factors that are; intrapersonal abilities, interpersonal abilities and adaptability. Table further depicts that only intrapersonal abilities have medium relation with career decision making self-efficacy whereas, interpersonal abilities and adaptability have weak correlation with emotional intelligence.

Another thing revealed in this correlation analysis is significant correlation between

adaptability and remaining four factors of emotional intelligence.

**Table 4: Hierarchical regression CDMSE (dependent variable)**

Variables	OLS1	OLS2	OLS3	OLS4	OLS5	OLS6
Intrapersonal Abilities	.401***	-	.373***	.402***	.416***	.384***
Interpersonal Abilities	.198**	.163*	-	.197*	.205**	.191**
Stress Management	.013	.027	.001	-	.018	.020
Adaptability	.021	.121*	.059	.023	-	.009
General Mood	-.117	-.096	-.110	-.118	-.115	-
R	.424	.289	.375	.423	.423	.396
R square	.179***	.084*	.141***	.179***	.179***	.157***
R square change	-	.096	.038	.000	.000	.022
F change	4.065***	2.144*	3.846***	5.129***	5.112***	4.379***

\* Significant at level 90%

\*\* Significant at level 95%

\*\*\* Significant at level 99%

Linear Regression analysis shows that 18% of total variance of the model is due to explained variables, which is also significant at 99% (0.01). It also shows that intrapersonal abilities have the largest impact on career decision making self-efficacy with unit increase in intrapersonal abilities self-efficacy increases 40.1%, which is also significant at 99%. Interpersonal abilities also effects career decision making self-efficacy which is significant at 95% and causes 20% increase in CDMSE with a unit increase in it. Regression analysis revealed no significant relation of stress management and general mood with career decision making self-efficacy.

Hierarchical regression also shows that intrapersonal abilities are the most significant variable as omitting it cause the greatest change in R squared (i.e. 0.096).

## DISCUSSION

Career decision-making self-efficacy is significantly related to intrapersonal abilities of Emotional Intelligence. In other words, students who expressed higher ability to perceive, access, and generate emotions of their own to assist thought and to understand and regulate emotion reflectively were more likely to report greater confidence in their career decision-making tasks. In fact, the positive and significant correlation between three out of five variables of emotional intelligence and career decision making self-efficacy suggests that greater emotional intelligence is related with increased efficacy for career decision-making tasks.

In considering Goleman's (1995, 1998) declarations, it is supported that emotional experience can be used to assist in the career decision-making process. Goleman argued that processing emotional experiences is different from processing cognitive information and two different parts of brain process experiences and information. The construct of emotional intelligence hypothesizes that both the cognitive and emotional centers of the brain are working together, forming communication between the rational and the emotional (Goleman, 1998). How the brain processes information relative to our emotions shows a significant relation to emotional self-awareness and efficacy when tackled with any decision-making task.

Brown, et al., 2011, argued that persons who are able to describe their emotions effectively and to understand and manage complex feelings, and those who are able to stay open to feelings (both pleasant and unpleasant) in self as well as in others, signal a highly clarified, explained and confident level of commitment to career choice and account high confidence in their abilities to successfully perform career-related tasks. Possibly the findings of present study can be taken to suggest that the role of interpersonal abilities and intrapersonal abilities are worthy of consideration when endeavoring to understand one's self-efficacy for career decision-making tasks.

## CONCLUSIONS

Overall results of this study further support the previous literature (Young et al., 1996 and Kidd, 1998) that emotion aids to explain career development outcomes and behaviors. To some extent, results of this study suggest that emotional understanding and manifestation can be used valuably to accomplish career-related tasks. In other words, the combination of interactive aspects and affective tendencies and capabilities warrants attention when considering career outcomes. Seemingly, recognition and understanding of both behavioral and emotional elements are analytical to enhancing career decision-making tasks.

Researchers have argued that emotional intelligence can be taught and learned (Caruso & Wolfe, 2001; Elias, et al., 2001; Goleman, 1995). Provided with this belief, effective regulation of emotion in self and others and the use of feelings to motivate, plan, and achieve one's career goals are worthy of consideration when attempting to strengthen one's efficacy for career planning and choice behaviors.

Eventually, the associations found between factors of emotional intelligence and career behaviors in the present study appeal attention to the practical importance of emotional intelligence in career counseling and assessment. Menhart (1999) studied the importance of emotional intelligence assessment in career counseling and found emotional inclinations and capabilities to be positively linked with interview outcomes.

Further arguments in favor of emotional intelligence assessment in career development, selection, and training are provided by Caruso and Wolfe (2001), who stated that how a person manages her or his emotions and the emotions of others in the workplace can significantly affect job satisfaction and performance. Though Caruso and Wolfe emphasized the important role of emotional intelligence in career assessment, it is vital to mention that they debated on an ability measure of emotional intelligence as compared to self-report measures of emotional intelligence. Recent debate regarding the validity of the emotional intelligence construct has raised question as to whether emotional proficiency is just a repacked version of traditional personality traits. They mentioned that ability

measures of emotional intelligence assess persons' actual performances rather than their self-reported skills.

Given the arguments that emotional intelligence can be taught and learned and the research that supports the important role emotion plays in career development, planning, and selection, career counseling practitioners may want to consider the role of emotional abilities, as measured by performance tests, in assisting clients with the career planning and in addressing clients' work adjustment and job satisfaction concerns.

There are several limitations of this study. First, sample contained students of only two universities of Islamabad. In the interest of diversity, future research should include students from diverse backgrounds and multiple geographic regions. Second, focus of this study remained on a student population and all other young adults comparable in age that have chosen alternatives to educational pursuit (e.g., vocational training, workforce) were excluded, which limit the generaliseability of this study's results to undergraduate college students largely. Future research could improve on the generaliseability of the findings by including non-college student groups. Third, the use of self-report measures may limit the accuracy of responses. More accurately, as noted above, self-report measures of EI assess perceived EI, whereas performance assessments describe persons' actual abilities, problems, and potential. Hence, future research might focus on both perceived and actual EI, as both may be important contributors of adaptation ability. That is, what one perceives to be true may be as important as that which is actually true.

Despite the above mentioned study limitations, the most obvious strengths of this study recommends that emotional experience and expression may play an important role in the career process and that career decision making may be more than just a cognitive exercise. Therefore, attention to the emotionality of career decision making is important given the complex interplay between judgments, feelings, and actions that has been noted in the emotion literature.

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## **Determinants of Dividend Payout in Emerging Economies: Evidence from Pakistan**

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### **Abstract**

*Dividend policy is one of the top ten most difficult unsolved problems in financial economies. The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don't fit together". Lot work has been done in developed economies, while few researchers addressed this phenomenon in emerging economy. This study aims to investigate the determinants of dividend payout in Pakistan. For this purpose non-financial firms (consistently paying dividend from 1999 to 2009) listed on Karachi Stock Exchange are selected for the study. From different sectors only 35 dividend paying firms are selected for the study. The results show that current earnings and net earnings have significant relationship with dividend payout, while profitability, firm size, and financial leverage have insignificant relationship with dividend payout in Pakistan. Sales growth and corporate tax are significant at 90% confidence interval in emerging economy like Pakistan.*

**Keywords: Dividend payout, Determinants of Dividends payout, emerging economies, OLS**

### **Introduction**

Dividends are payments that organizations pay to its shareholders in the form of cash, stocks, and liquidating dividends from its earnings. Dividend policy is related to why and how much dividend will be paid to shareholders. Dividend policy has been analyzed for many decades, but no universally accepted explanation for companies observed dividend behavior has been established. Brealey & Mayers (2005) described dividend policy as one of the top ten most difficult unsolved problems in financial economies. This description is consistent with Black (1976) who stated that "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that don't fit together".

Dividend payout is a puzzling phenomenon. Researchers proposed various theories regarding dividend payments but there is no single theory on which they decide to agree.

The debate regarding dividend policy started from the work of Miller & Modigliani (1961). They proposed dividend irrelevance theory in which they demonstrated that dividend is irrelevant whether companies pay it or not, it does not affect shareholders wealth. Their theory is based on certain assumptions. According to this theory the overall value of the shareholders is same in both cases if a firm pays dividend or it gives earning to shareholders in form of capital gains. The assumptions on which MM Irrelevance Theory is based on are:

- There is a perfect market.
- Information is equally available to all stakeholders.
- There are no taxes.
- There are no transaction costs.
- There are no agency costs.

This irrelevance hypothesis was supported by many researchers (Black & Scholes, 1974, Miller & Scholes, 1982, Bernstein, 1996, Uddin & Chaudary, 2005, Kaleem & Salahudin, 2006).

Besides the support of MM irrelevance hypothesis there are also many researchers who rejected this hypothesis (Baker et al. 1985, Partington, 1985, Siddiqui, 1995, Baker & Powell, 1999, Rasheed and Rehman, 2009).

Gordon & Lintner (1963) introduced “Bird in Hand” theory of dividend policy, which states that investors are risk averse so they prefer dividends instead of future capital gain, thus increase in dividends will also increase firm’s value. According to Gordon (1959) there are three reasons for investment in stocks. The first one is to get dividends and earnings. The second one is to get dividends only, and the third one is to get earnings only. He also argued that dividend affect share prices more than retain earnings.

There are also many theories addressing dividend policy such as tax preference theory, agency theory of Jensen & Meckling, signaling theory, transaction cost and residual theory, and life cycle theory of dividend. All these theories are explained in greater detailed in the coming section.

The introduction of Code of Corporate Governance by Securities and Exchange Commission of Pakistan (SECP) in 2002 led to increase interest in analyzing the dividend

behavior of the firms. In particular, the focus involved the determination of dividend policies in Pakistan, which is the central issue of this area. The importance of this study is that a lot of research is done in developed markets, while little attention has been paid to dividend policy in emerging markets like Pakistan. The nature, characteristics, and efficiency of dividend policy are different in emerging and developed markets.

### **Research Question**

What are the main determinants of dividend payout in Pakistan?

### **Research Objectives**

- 1) To explore the relationship between net earnings and dividend payout.
- 2) To find out the relationship between corporate tax and dividend payout.
- 3) To find out the relationship between sales growth and dividend payout.
- 4) To explore the relationship between firm size and dividend payout.
- 5) To explore the relationship between financial leverage and dividend payout.
- 6) To explore the relationship between profitability and dividend payout.
- 7) To explore the relationship between current or anticipated earnings and dividend payout.

### **Literature Review**

From the last five decades several theoretical and empirical studies are done indicating and exploring mainly three outcomes; market value of the firm is affected by increase or decrease in dividend payout or firm market value is not affected by dividend payout at all. However, literature and empirical evidence show that the determinants of dividend policy are very mixed.

Baker & Nurgler (2004) proposed catering theory which is that managers give incentives to the investors according to their needs, wants, and in this way cater the investor by paying smooth dividends.

Adaoglu (2000) explore the determinants of dividend policy of the firms listed on Istanbul Stock Exchange and found that main determinants of dividend payments are firm's earnings. Angelo et al. (2004) also found a highly significant association between the decision to pay dividend and the ratio of earned equity. Naceur et al. (2006) investigated the determinants of dividend policy of Tunisian Stock Exchange. They found that firms with higher growth rate and a stable earning, generate a larger positive cash

flows and because of this they pay larger dividends. Furthermore, larger dividend payments will attract investors. They also found that there is no impact of ownership concentration on dividend payments. There is negative relationship between liquidity of the firm's and dividend payments. Reddy (2006) found that firms having paying consistent dividends are profitable, large in size, and growing. Amidu & Abor (2006) also explored dividend payout policy decision of listed firms of Ghana Stock Exchange. They found that cash flow, profitability, growth, and future investment opportunities influence dividend payout decisions.

A comprehensive study of dividend policy in Australia and Japan was conducted by Ho (2002). He examined a panel data of stocks from ASX 200 & Nikkei 225 Index using fixed effect regression model. The study found that there is a positive association between dividend policy and size of the firms in Australia, and there is a positive relationship between liquidity and dividend policy and negative relationship with risk in Japanese context. Myers & Frank (2004) explored the impact of financial variables on dividend decision. To assess the impact they examine a sample of 483 firms from Molex Investor Database using OLS regression. They found that high P/E ratio is related with high payout ratio because of low risk. They also found that debt to equity ratio was positively related to dividend payout ratio.

Dhanani (2005) explored the determinants of dividend policy by using survey methodology. The sample of the study consisted of 800 financial and non-financial firms listed on London Stock Exchange. The main focus of the study was to find the importance and relevance of various theories of dividend in UK listed companies. The study found that UK managers support the general dividend relevance hypothesis. Companies generally refute residual dividend policy for investment decision, and also believe that dividend decisions allow limited flexibility with which they influence capital structure which is in line with signaling hypothesis. Ayub (2005) explored the impact of firms' specific factors on corporate dividend payments in Pakistan. The sample of his study consisted of 180 firms listed on Karachi Stock Exchange from 1981 to 2002. The study found that only 23% of profits are distributed in form of dividend, and the remaining 77% profits are kept for additional investments. Moreover, in those firms where directors own a large number of shares pay high dividends. He also found that

profitability, insider's ownership and retained earnings are positively, while liquidity is negatively associated with cash dividends.

Kumar (2006) studied the relationship between dividend payout and corporate governance in India. He found significant positive relationship of dividend with investment opportunities and earning trends and negative relationship with debt-to-equity.

### **Hypothesis of the Study**

The literature led us to the following hypothesis:

- 1) There is a positive relationship between net earnings and dividend payout.
- 2) There is a negative relationship between corporate tax and dividend payout.
- 3) There is a positive relationship between sales growth and dividend payout.
- 4) There is a positive relationship between firm size and dividend payout.
- 5) There is a negative relationship between financial leverage and dividend payout.
- 6) There is a positive relationship between profitability and dividend payout.
- 7) There is a positive relationship between current earnings and dividend payout.

### **Methodology**

The population of the study consists of all non-financial companies listed on Karachi Stock Exchange. The study focuses on identifying the main factors of dividend payout, so only those firms which consistently pay dividends from 1998 to 2009 are considered for the study. On the basis of this restriction only 35 firms are found from eight different sectors that are consistently paying dividend. Ten firms were selected from textile sector, seven firms from chemical and pharmaceutical sector, seven from engineering sector, two firms from sugar industry, three firms from paper and board sector, four firms from oil and gas sector, one from tobacco sector, and one from miscellaneous sector. These firms are selected on the basis of consistent dividend payments from 1998 to 2009. Data was collected from financial statement analysis, a report issued by State Bank of Pakistan. The data is reliable because it is issued by SBP which is a central regulatory body of the country.

### **Dependent Variable**

Dividend payout is our dependent variable which is measured as dividend over net profit.

### Independent Variables

Current or Anticipated Earning: Current earnings are measured as EBIT over total assets.

Corporate Tax: Corporate tax rate (35%), measured as corporate tax over profit before tax.

Sales Growth: Increase in firms sales from previous year to the current year, and measured as current year sales over previous year sales.

Firm Size: Firm size is measured by taking a natural log of total assets.

Financial Leverage: It shows the debt portion of the firm, and is measured as total debt over total equity.

Profitability: The earning of a firm from its equity portion, and measured as net profit over equity.

Net Earnings: Net earnings are the earning per share after tax, and measured as net income over number of share outstanding.

**Table 1 Variables Definition**

<b>Variables</b>	<b>Description</b>	<b>Expected Relationship</b>
Dividend payout ratio	Dividend / Net Income	
Current Earnings	EBIT / Total Assets	Positive
Corporate Tax	Corporate Tax / Profit before tax	Negative
Sales Growth	Current Year Sales/ Previous year Sales	Positive
Financial Leverage	Total Debt / Total Equity	Negative
Firm Size	Natural log of Total Assets	Positive
Profitability	Net Profit / Equity	Positive
Net Earnings	EPS after tax	Positive

### Regression Analysis

Various econometric tools are applied to check the relationship of dividend payout and factors that affect dividend payout ratio. The most important method is Ordinary Least Square (OLS) regression. The general equation of the study is:

$$DPR = \beta_0 + \beta_1 (CE) + \beta_2 (FL) + \beta_3 (CT) + \beta_4 (SG) + \beta_5 (NE) + \beta_6 (FS) + \beta_7 (PR) + \mu_t$$

Where,

DPR = dividend payout ratio

$\beta_0$  = intercept

$\beta_1$  = slope

CE = current earning

FL = financial leverage

CT = corporate Tax

SG = sales growth

NE = net earning

FS = firm size

PR = profitability ratio

Before applying OLS regression there are certain assumptions of OLS which are checked. These assumptions are that there is no multicollinearity in data, there is no auto correlation, there is heterokedasticity in data, and there is no outlier in the data. To fulfill these assumptions, we apply various econometric models.

### **Heterokedasticity**

The condition for linear regression model is that there should be no heterokedasticity in data. It means that variance of error term is constant. Due to heterokedasticity standard error and t-statistic may increase or decrease. To check for this, different tests such as White heterokedasticity test, Breusch-Pagan Godfrey tests, Harvey test, Glejser test, and ARCH test were available, we applied White test to check heterokedasticity because it considers both linear and non linear relationship. If the probability is less than 5% or equal there is an issue of heterokedasticity. If the probability is greater than 5%, there is no issue of heterokedasticity. The results of White test indicated that there is no issue of heterokedasticity.

### **Multicollinearity**

The assumption of OLS is that there should be no multicollinearity in data. This means that there is no relationship between explanatory variables. If there is multicollinearity in data it will affect beta of the model as well as t-statistic which can lead to unbiased results. If the probability of the relationship between two independent variables is greater than 5% there will be issue of multicollinearity in data. It can be minimized but cannot eliminate. To minimize multicollinearity the first step is that data should be normal; there

should be no outlier in data. We can see it also from correlation matrix. Durban- Watson stat also indicate multicollinearity issue. If Durban-Watson value is less than 1.5, than there is an issue of multicollinearity.

**Autocorrelation**

Another assumption of OLS regression is that there should be no autocorrelation in data. It means that covariance of error term should be zero, and if it is not equal to zero there will be an issue of autocorrelation in data.

**Empirical Results**

**Descriptive Statistics**

**Table 2 Descriptive Statistics**

	DPR	SG	CT	CE	FL	FZ	NE	PR
Mean	0.459	1.153	0.33	0.154	1.334	7.944	0.187	0.214
Median	0.427	1.120	0.30	0.122	1.170	7.884	0.115	0.208
Maximum	3.034	3.855	9.50	1.288	6.372	11.941	2.019	0.939
Minimum	-0.455	0.422	-0.21	-0.214	0.026	4.006	-1.242	-1.363
Std. Dev.	0.359	0.296	0.68	0.147	0.983	1.451	0.275	0.171

Table 2 shows the descriptive stat of data. Dividend payout ratio has a mean value of .459, median value of .427, maximum value of 3.034, minimum value of -.455, and standard deviation of .359, which shows that data of dividend payout ratio is normal. Sales growth has a mean value of 1.153, median value of 1.120, maximum value of 3.855, minimum value of .422, and standard deviation of .296. Corporate tax has a mean value of .33, median value of .30, maximum value of 9.50, minimum value of -.21, and standard deviation of .68. Current earning has a mean value of .154, median value of .122, maximum value of 1.288, minimum value of -.214, and standard deviation of .147. The data for all these variables is normal as shown in the table, so one of the basic requirements of OLS is fulfilled. Thus we expect that there is no multicollinearity in data.

**Correlation Matrix**

**Table 3 Correlation Matrix**

SG	CT	CE	DPR	FL	FS	NE	PR
1							
-0.087	1						
0.053	-0.0836	1					
-0.056	-0.0955	0.141	1				
0.184	-0.0004	-0.143	-0.013	1			
0.005	-0.0293	0.125	-0.074	0.240	1	0.140	
0.090	-0.0738	0.127	-0.125	-0.028	0.140	1.000	
0.225	-0.0932	0.480	0.071	0.460	0.109	0.264	1

Table 3 represent correlation matrix of our variables. Correlation matrix shows degree of association among variables, and also direction of relationship among variables. Sales growth has positive but insignificant relationship with dividend payout ratio. However the relationship is significant at 10% of confidence interval. Corporate tax has negative significant relationship with dividend payout ratio. Current earnings have positive but insignificant relationship with dividend payout ratio. However, the relationship is significant at 10% confidence interval. Financial leverage has negative significant relationship with dividend payout ratio. Firm size has also negative significant relation with dividend payout ratio. Net earnings have negative insignificant relation with dividend payout ratio in Pakistan. Profitability ratio has positive and significant relationship with dividend payout ratio. The correlation matrix also shows that the associations among variables are not greater than .5, so it is proof that there is no issue of multicollinearity in data.

**Heterokedasticity Test**

**Table 4 Heterokedasticity Test**

Heterokedasticity Test: White				
F-statistic	1.478818	Prob. F(7,385)		0.1732
Obs*R-squared	10.29015	Prob. Chi-Square(7)		0.1727

By using White test of heterokedasticity, table 4 shows that probability is insignificant (.1732), so there is no issue of heterokedasticity in data. All the assumptions of OLS we stated earlier are fulfilled, now we apply OLS regression to check the relationship between dependent variable and independent variables.

**OLS Regression**

**Table 5 OLS Regression**

Dependent Variable: DPR				
Method: Least Squares				
Date: 11/28/13 Time: 22:38				
Sample: 1 393				
Included observations: 393				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.694	0.124	5.611	0
SG	-0.085	0.061	-1.380	0.168
CT	-0.044	0.026	-1.649	0.100
CE	0.378	0.195	1.938	0.053
FL	-0.010	0.021	-0.491	0.624
FS	-0.017	0.014	-1.222	0.222
NE	-0.181	0.073	-2.497	0.013
PR	0.001	0.172	0.003	0.998
R-squared	0.057			
Adjusted R-squared	0.040			
F-statistic	3.349			
Prob(F-statistic)	0.002	Durbin-Watson stat		1.609

Table 5 shows regression analysis of our variables. Our dependent variable is dividend payout ratio and sales growth, corporate tax, current earning, financial leverage, firm’s sales, net earnings, and profitability ratios are our independent variables. As we can see from the table the constant value is significant which means that there are other variables that explain variance in dependent variable but have been left out in the study.

Adjusted R-square shows the explanatory power of the independent variable. The value of Adjusted R-square is .040, which means that 4% variation in dividend payments is explained by our independent variables. The most important value is the F-statistic value which tells about model fitness. The value of F-statistic is 3.349 which is significant (prob F-stat .002) so our model is fit. Durbin-Watson stat gives signals about the issue of multicollinearity. If the value of Durbin-Watson stat is greater than 1.5, then there is no issue of multicollinearity.

As we can see from the table sales growth has negative insignificant relationship with dividend payout ratio at 95% confidence interval. However, the relationship is significant at 90% confidence interval. T-statistic shows significant of relationship between dependent and independent variables. Corporate tax has also negative insignificant relation with dividend payout; however the relationship is significant at 90% confidence interval. Current earning has a positive and significant relationship with dividend payout, which means that increase in current earning will bring increase in dividend payments. Financial leverage has negative and insignificant relationship with dividend payment, which means that firms with higher level of debt to equity ratio will pay no or less dividend to their shareholders. Firm size has negative and insignificant relationship with dividend payment, which means that large or small firms will pay dividend equally. There is no differentiation that larger firms will pay more dividends to their shareholders than the small firms. Net earnings have negative but significant relationship with dividend payments. Normally net earnings will have positive significant relationship with dividend payments but here the case is opposite which may mean that the firms have growth opportunities so they invest. Profitability ratio has a positive but insignificant relationship according to the above results. One possible explanation for that is that firms pay dividends to attract more investors to buy their shares irrespective of their profit.

### **Conclusion**

Dividends are payments that organizations pay to its shareholders in the form of cash, stocks, and liquidating dividends from its earnings. Dividend policy means why and how much dividend will be paid to shareholders. Dividend policy has been analyzed for many decades, but no universally accepted explanation for companies observed dividend behavior has been established. Brealey & Mayers (2005) described dividend policy as

one of the top ten most difficult unsolved problems in financial economies. The purpose of the study is to identify factors that affect dividend payout of the firms listed on Karachi Stock Exchange. 35 firms are selected on the basis of consistent dividend payments from 1998 to 2009.

The results show that current earnings and net earnings have significant relationship with dividend payment in Pakistani firms. However, net earnings have negative relationship which may mean that firms have investment opportunities. Sales growth and corporate tax are significant at 90% confidence interval, but their relationship with dividend payments is also negative. One reason for this the relationship could be that firms know their sales are increasing so they retain their earnings to purchase new machinery to fulfill the demand of the market. The relationship between corporate growth and dividend payments is negative, which means that when tax rate increases firms pay less dividends to their shareholders because dividend income are tax deductible at source. Financial leverage and firm size have negative and insignificant relationship with dividend payments. The reason is that in Pakistan firms may pay dividend irrespective of their size (small or large).

### **Limitations and Future Research**

Although current study is significant addressing dividend policy in emerging markets like Pakistan, but there are certain limitations as well such as; the data period of the study is too short which is only 11 years; sample of the study is also minimum consisting only 35 firms; the study only take Pakistani market it will be better to consider others emerging markets like India or Bangladesh; the R-square of the study is too small which shows that others important variables are missed, so one can use more variables to better understand the relationship; also the availability of time and resources are limited. So one can do future research by adding more factors to the regression equation, which affect dividend payments, increase sample size, increase time period, also select other emerging markets and compare it with Pakistani market.

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# The effect of firm specific factors on stock returns: A case of Pakistani listed firms

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## Abstract:

*The aim of this paper is to find the impact of risk, return on investment, growth and size on stock returns. The data have been collected from financial statements of 46 companies listed on KSE, covering 18 different sectors, for a period of 5 years i.e. 2008-2012. To test the hypotheses empirically, descriptive statistics and multiple linear regression techniques are used. Results show 39.6% correlation between predictor and predicted variables whereas 15.7% variation in predicted variable is explained by four predictor variables namely risk, ROI, growth and size. Three of the predictor variables, namely risk, ROI and growth, are statistically significant while size has a statistically insignificant impact on stock returns. The findings of this study are consistent with previous studies on the same topic, conducted in other markets. This study will be helpful for individual as well as institutional investors to estimate the expected returns of stocks based on the above mentioned variables before investing, thus enabling them to make better investment decisions.*

**Keywords:** Stock returns, risk, return on investment, growth, size.

## Introduction

Returns have positive link with systematic market risk. A dilemma of how to prefer a company and devise a strategy to maximize the stock returns, it needs concentration and discussion among business financial literature. Categorization of factors that affect the return is key concern for academic research. This particular subject has been discussed by various studies in finance (Dimitrov & Jain 2008; Korteweg 2010).

Over the last decade CAPM model has lost ground since empirical evidences suggest that beta does not effectively clarify cross sectional differences in normal returns. As a

substitute, average stock returns have been affected by several new variables. For example, variable firm's size introduced by Banz (1981), profitability by Haugen and Baker (1996), growth in assets by Cooper, Gulen, & Schill, (2008), and historic returns introduced by Bondt & Thaler (1985), and Jegadeesh & Titman (1993).

The ups and downs in prices of stocks are the significant sign for the investors to take a decision about investing or not, in a particular stocks. Theories developed by different researcher like Wilcox (1984), Rappaport (1986) and Downs (1991) recommend that changing in price of shares are linked with changes in essential factors which related with share valuation like payout ratio, dividend yield, capital structure of firm, earnings, size of the firm and its growth.

The major purpose of this study is to find out the variables which affect the returns of companies in KSE. It will provide a conceptual backdrop necessary to guide financial managers in planning and decision making so as to increase the wealth of shareholders. The objective of this research is to examine the relationship of company related variables with stock returns. It will provide a conceptual framework for effective planning and decision making so as to achieve higher stock returns. The results of this study will help investors, both individual as well as institutional, to keep in mind the key factors which affect stock returns while investing in different stocks. The findings of this study will help them to make better investment decisions. Moreover, it will add a new dimension to the existing body of knowledge about Pakistani stock exchange.

## **Literature Review**

Drew & Veeraraghavan (2003) evaluate the relationship between Book-To-Market (BTM) equity, firm size and average stock return in Asian markets during 1990s. According to them multi factor model tells the description of return with the relationship between BTM equity, firm size and average stock. Drew, Naughton & Veeraraghavan (2003) in their study in China, find that the investors may opt the combination of low BTM equity to generate high risk adjusted return. They find no evidence of seasonal effects that explain results of multi factor model. Moreover, they conclude that only market factor is not enough to explain the stock return in China.

Knez & Ready (1997) use a robust method to separate the significant observations to investigate the reasons for considering BTM and size as useful to explain the variation in stock returns. They find risk premium of firm size, which is measured by Fama & French (1992), totally disappears when the extreme observations upto 1%, trimmed every month. They document that further research on their results can give better understanding about economical size and return.

Corhay & Tourani-Rad (1993) explore significant effect of size in Dutch firms. They document that the significance of size is reduced when return time period increases whereas; Doeswijk (1997) explores insignificant size effect on same stock market. Herrere & Lockwood (1994) find small effect of firms and market effect beta in Mexican companies. Daniel & Titman (1997) show that market beta has no explanatory power for stock returns even after controlling the size and BTM ratio. Lakonishok & Shapiro (1984) conduct study to examine the relationship between beta, firm size with stock returns. The outcome shows that size of firm significantly effect stock returns and beta shows insignificant relationship with stock returns.

Lau, Lee & McInish (2002) conduct their study in Malaysia and Singapore to examine the relationship between stock return and beta. They find positive correlation with positive excess returns of market and negative correlations with stock returns and beta with negative excess returns of market. Pandey (2001) investigated stock markets of Malaysia and document that market capitalization effects in stock return estimation whereas, the BTM ratio is disappeared in fix firm. A study conducted by Wang & Di Iorio (2007) evaluates share market of Chinese over the era from 1994 to 2002. They also find support for the risk factor, BTM ratio and size variable, whereas the power of beta to effect returns is unsupported.

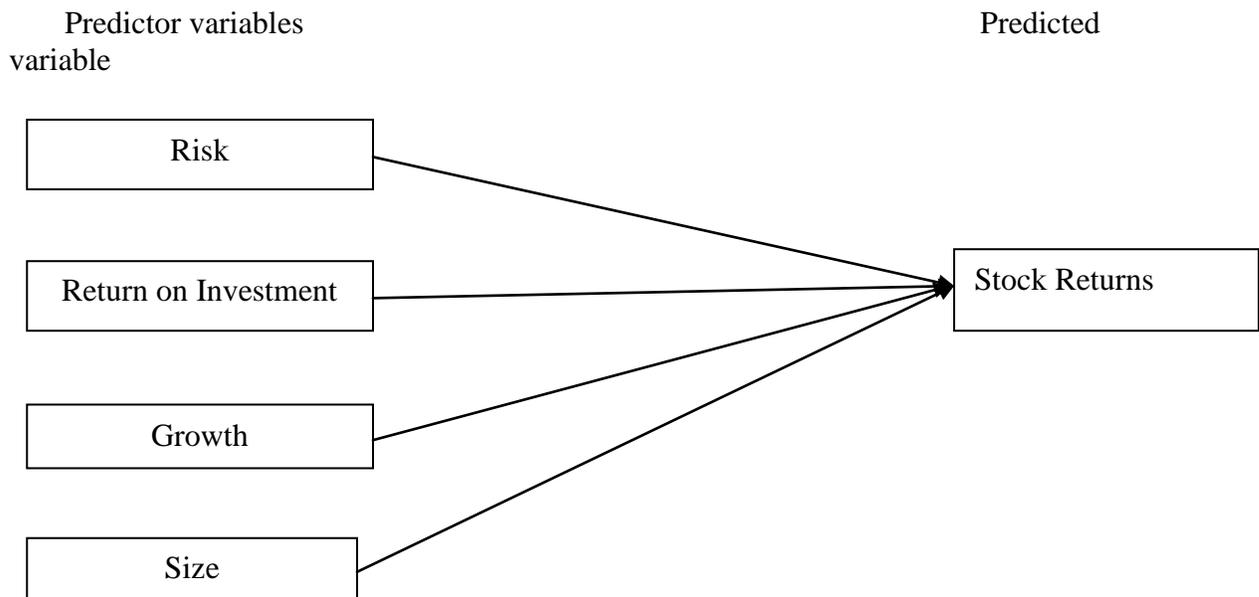
Karpoff (1987) documents that the number of trades and price volatility are positively related to stock returns. Schwert (1989) evaluates the relationship between expected monthly volatility and volume growth rate and finds positive relationship with expected monthly volatility and volume growth rate. Grundy & McNichols (1989), Holthausen & Verrecchia (1990) and Kim & Verrecchia (1991) investigate the relationship between trade size and price volatility and document that the trade size is positively related with price volatility. Jones Kaul & Lipson (1994) conduct a study to examine the relationship

of two variables like trade size and daily quantity of trade with daily volatility in price from Stock Exchange of NASDAQ. Chan, Hamao & Lakonishok (1991) study to investigate the gap in stock returns in Japanese financial markets. The outcome shows significant relationship of cash flow, size, BTM and earnings with stock returns, all four variables significantly effect to stock returns.

Basu (1977) finds that stocks which have high EPR make significantly high returns than those stocks which have low EPR. Banz (1981) documents that firms with low market capitalization have significantly higher returns than those which have large market capitalization. Rosenberg, Reid & Lanstein (1985) evaluate that stocks which have high BTM ratio have significantly higher returns than those stocks which have low BTM ratio. Bhandari (1988) confirms that returns of companies are higher which have high debt to equity ratio than those companies which have low debt to equity ratio.

Based on the above literature the following theoretical model and hypotheses are suggested for this study. The methodology, discussed next, provides the procedure to empirically test the hypotheses of the study. Discussion of the results and conclusion is provided at the end.

### ***Theoretical Frameworks and Model***



## **Hypotheses**

Based on the above literature, number of testable hypotheses can be formed. The current study is supposed to test the following main hypotheses:

- .H<sub>1</sub>: There is a significant relationship between risk and stock return.
- H<sub>2</sub>: There is a significant relationship between return on investment and stock return.
- H<sub>3</sub>: There is a significant relationship between growth of a firm and its stock return.
- H<sub>4</sub>: There is a significant relationship between size of a firm and its stock return.

## ***Methodology***

This particular research is based on panel data extracted from the financial statements of 46 companies trading in Islamabad, Lahore and Karachi stock exchanges for 5 years, 2008-2012. Multiple linear regression technique is used to analyze the relationship of ROI, risk, growth and size with stock returns.

## **Model**

Stock Return =  $\alpha + \beta_1$  Risk +  $\beta_2$  Return on Investment +  $\beta_3$  Growth +  $\beta_4$  Size + e

## **Multicollinearity**

VIF and tolerance tests are used to check the Multi-collinearity and mutual independence of the predictor variables with each other. Non-existence of Multi-collinearity in predictor variables is observed when tolerance is larger than 0.1 and VIF is less than 10. Table B shows that the value of tolerance of each variable is greater than 0.1 whereas VIF is less than 10. This means that there is no statistically significant multi-collinearity between any of the predictor variables.

## **Results Analysis and Discussion**

### ***Descriptive Statistics***

Table-A shows the descriptive statistics including mean, minimum, maximum and standard deviation.

Table-A: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Stockreturn	230	-.84	1.57	.0647	.43049
risk	230	.01	.89	.1376	.13687
ROI	230	-.07	.41	.1282	.11129
Growth	230	-.91	12.40	.3218	1.21510
Size	230	-.61	3.19	.2275	.40832
Valid N (listwise)	230				

### Discussions of regression results

Table-B shows the value of model summary, ANOVA and coefficients. The model summary shows the correlation and coefficient of determination of this model. This model has 39.6% correlation with stock return. Coefficient of determination shows that 15.7% variation in stock returns is explained by predictor variables. Adjusted R square shows variance in returns which is 0.142. ANOVA explains model fitness where F value is 10.487 at significance level 0.01.

In this model, risk has a beta coefficient of 0.143 with a t-value of 2.224 which is statistically significant at a p-value of 0.027. ROI has a beta coefficient of 0.332 with a t-value of 5.323 which is significant at a p-value of 0.01. Growth has a beta coefficient of 0.178 with a t-value of 2.830 which is also significant at a p value of 0.01. The variable of size shows a beta coefficient of -0.058 with a t-value of -0.937 which is statistically insignificant at a p-value of 0.350. The first three variables, risk, ROI and growth, show a statistically significant positive impact on stock returns whereas size has an insignificant negative impact on stock returns. The findings of this study confirm the historical results achieved by other researcher. The theoretical support for the findings is also available. Firms with higher level of risk are expected to provide better returns whereas firms with better ROI and growth are also expected to have better returns. Size, though, is insignificant but its negative beta can be associated with inefficiency of large size firms. Up to a certain optimal level size has a positive effect on returns but very large firms are exposed to inefficiency. This may be the possible reason why this variable has an

insignificant negative beta. Overall this study lends support to the notion that firm specific factors do effect stock returns.

**Table-B: Regression results**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.396 <sup>a</sup>	.157	.142	.39872

a. Predictors: (Constant), Size, Growth, ROI , risk

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.669	4	1.667	10.487	.000 <sup>a</sup>
	Residual	35.771	225	.159		
	Total	42.439	229			

a. Predictors: (Constant), Size, Growth, ROI, risk

b. Dependent Variable: Stockreturn

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance VIF
1	(Constant)	-.168	.054		-3.123	.002	
	risk	.449	.202	.143	2.224	.027	.911 1.098
	ROI	1.284	.241	.332	5.323	.000	.963 1.038
	Growth	.063	.022	.178	2.830	.005	.944 1.059
	Size	-.061	.065	-.058	-.937	.350	.984 1.017

a. Dependent Variable: Stockreturn

**Conclusion:**

The study examines the impact of firm related factors on stock returns among the enlisted firms of KSE over the period from January 01, 2008 to December 31, 2012. A total of 46 companies covering 18 different sectors are considered for the analysis of variables, including, risk, return on investment, growth and size.

Empirical results show the importance and significance of all the four factors for stock returns. Variables which have a significant positive effect on stock returns in KSE are risk, ROI and growth whereas, size has a negative effect on stock returns but it beta is

statistically insignificant. The findings of this study may be used by investors while making investment decisions so that they can earn better returns on their investment.

Table C: Variables measurement and expected signs

Variables	Measurement or formula	Expected signs
Return on investment	Net income / Total assets	Positive
Risk	Standard deviation of returns	Positive
Growth	Percentage change in sale	Positive
Size	Percentage change in total assets	Positive/ Negative
Stock return	(Ending stock price – Initial stock price) + Dividend / initial stock price	

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