Determinants of Share Price: An Empirical Study of Pakistani Banking Sector

Abstract

Financial sector is one of the most significant and great contributor to the economy of every country. The development of financial sector has a direct impact on the economic development. A number of studies subsequently used different conceptual and methodological approaches to model equity return of financial services firms. The objectives of this study are primarily having an idea about the factors affecting the equity prices of studied banks. Secondarily, to identify whether there is a significant relationship between equity prices of listed commercial banks with some fundamental factors (Return on equity ratio, Spread ratio, Advances to Deposits ratio, Debt ratio, SBP Discount rate). This study includes 20commercial banks listed onKarachi Stock Exchange (KSE) for the period 2007 -2011. The choice of selected banks used to gather the data depend on the availability of data in the concerned period. The data were collected through various sources as annual reports of banks, database of Karachi Stock Exchange and "Financial Statement Analysis of Financial Sector" (2007-2011) published by "State Bank of Pakistan". In this study we have restricted ourselves to only fundamental factors that may affect the value of share of particular organization. Multiple LinearRegression analysis is adopted to find out the relationship among the fundamental factorswith the Share Price and found positive significant relationship ofShare pricewith Spread, Advances to Deposits ratio, Debt ratio and negative significantrelationship with SBP discount rate and ROE is negatively insignificant in this case.

Keywords: Share price, financial markets, spread, return on equity, debt ratio

Introduction

In recent years, finance and economics literature has shown increasing interest in the determinants of business firms' stock price synchronicity (Morck & Yeung, 2000). However, precisely what factors influence stock price synchronicity in the banking industry remains an open question. Such a question demands an answer, as banks are a major and significant source of financing in economies around the world, and perform important functions, such as the allocation of resources, firm monitoring, and the promotion of economic growth.

In the securities market, whether theprimary or the secondary market, the price of equity/ stock is significantly influenced by a number of factors whichinclude book value of the firm, dividend per share, earnings per share, price earnings ratio and dividend cover(Gomper, joy, Ishii, & Andrew, 2003).

The most basic factors that influence price of equity share are demand and supply factors. If most people startbuying then prices move up and if people start selling prices go down. Government policies, firm's andindustry's performance and potentials have effects on demand behavior of investors, both in the primary andsecondary markets.Financial firms make up a substantial fraction of the domestic equity market. One of the major avenues of investment that has the potential of yielding considerable returns to investors is the investment in equity shares. It is also a source of finance for the capital requirements of firms. Returns from such equity investments are however subject to vary, depending upon various factors such as the performance of the particular stock, market conditions and alike. Knowledge of such factors and their possible impact on share prices is highly appreciable as it would help investors make wise investment decisions and enable firms to enhance their market value. The factors that influence share prices could either be internal factors, such as earnings, dividend, book value and alike or external factors such as interest rate, government regulations, foreign exchange rate and others. Several such factors have been identified by previous empirical research.

The objectives of this study are primarily having an idea about the factors affecting the equityprice of studiedbanks. Secondarily, to identify whether there is a significant relationship between equity prices of listedcommercial banks with some fundamental factors (Return on equity ratio, Spread ratio, Advances to Deposits ratio, Debt ratio, SBP Discount rate).

LiteratureReview

Financial sector is one of the most significant and great contributor to the economy of every country. The development of financial sector has a direct impact on the economic development. In Pakistan, banks contribute 95% of the financial sector and the sound performance of banks certainly fosters the economic growth of a country (Husain, 2004).Many researchers have focused on the impact of microeconomic factors on bank performance and profitability.(S.Irmala, Sanju, & Ramachandran, 2011) conducted a study to identify the determinants of share prices in the Indian market. The study uses panel data pertaining to three sectors viz., auto, healthcare and public sector undertakings over the period 2000-2009 and employs the fully modified ordinary least squares method. The results indicate that the variables dividend, price-earnings ratio and leverage are significant determinants of share prices for all the sectors under consideration. Further, profitability is found to influence share prices only in the case of auto sector.

Khawaja and Din (2007) investigate the determinants of interest rate spreads in Pakistan using panel data on 29 banks for the period 1998 to 2005. They use the industry variables of concentration and deposit inelasticity (measured as interest rate-insensitive current and saving deposits) and firm variables including market share, liquidity, administrative costs, asset quality, and the macroeconomic variables of real output, inflation, and real interest rates. They conclude that the inelasticity of deposit supply is a major determinant of interest rate spread.

Capital planning plays a key role in banks' business decisions. The cost of equity financing and return targets on shareholders' funds shape banks capital allocation and product pricing. In the literature, bank profitability, typically measured by the return on assets (ROA) and/or the return on equity, is usually expressed as a function of internal and external determinants. Internal determinants are factors that are mainly influenced by a bank's management decisions and policy objectives. Such profitability determinants are the level of liquidity, provisioning policy, capital adequacy, expenses management, and bank size. On the other hand, the external determinants, both industry and macroeconomic related, are variables that reflect the economic and legal environments where the financial institution operates.Jing and Kostas (2012)suggest that higher capital

requirements can be beneficial to equity investors by restraining bank leverage, and provide an additional rationale for the introduction of countercyclical capital buffers. The returns on bank stocks rise and fall with the business cycle, making bank equity financing cheaper in the boom and dearer during a recession. This provides support for prudential tools that give incentives for banks to build capital buffers at times when the cost of equity is lower. In addition, banks with higher leverage face a higher cost of equity, which suggests that higher capital ratios are associated with lower funding costs. More specifically, Welch (2004)starts with the notion that stock returns will be negatively correlated with market based debt ratio if firms are inactive and do not rebalance their debt ratios following periods of increasing or decreasing stock prices.

Olokoyo (2011)conducted a study to investigate the determinants of commercial banks' lending behavior in the Nigerian context. The studyaimed to test and confirm the effectiveness of the common determinants of commercial banks' lending behavior andhow it affects the lending behavior of commercial banks in Nigeria. The model used is estimated using Nigeriancommercial banks loan advance (LOA) and other determinants or variables such as their volume of deposits, theirinvestment portfolio, interest (lending) rate, stipulated cash reserve requirements ratio and their liquidityratio for the period; 1980 – 2005. The model hypothesizes that there is functional relationship between thedependent variable and the specified independent variables. From the regression analysis, the model was found to besignificant and its estimators turned out as expected and it was discovered that commercial banks deposits have thegreatest impacts on their lending behavior. The study then suggests that commercial banks should focus on mobilizingmore deposits as this will enhance their lending performance and should formulate critical, realistic and comprehensivestrategic and financial plans.

Decrease in liabilities or to fund increases on the assets'side of the balance sheet, is considered an important determinant of bank profitability. The loans market, especially credit to households and firms, is risky and has a greater expected return than other bank assets, such as government securities. That would expect a positive relationship between liquidity and profitability. Miller and Noulas (1997)suggest that the more financial institutions are exposed to high risk loans, the higher the accumulation of unpaid loans and the lower the profitability. Even though leverage (capitalization) has been confirmed to be important in explaining the performance of financial institutions, its impact on bank

profitability is ambiguous. As lower capital ratios suggest a relatively risky position, one might expect a negative coefficient on this variable.

The study has contributed to existing literatures in confirming or raising new issues with respect to other factors influencing stock prices and policy makers who are concerned about the growth of the capital market are better informed on how to deploy the monetary policies instruments as well other economic indices to achieve the desired market growth. This paperstudiesthemicroeconomic determinants (Return on equity, Spread, Advances to Deposits ratio, Leverage, SBP Discount rate) of banking sector in Pakistan by applying Multiple Linear Regression analysis on data of 20 commercial banks listed on Karachi Stock Exchange (KSE) forthe period 2007to2011.

Research Methodology

We define data sampling, data collection technique, variables, research hypotheses, as well as the statistical techniques used to test the data.

Data Sampling

Our sample includes 600 non-missing observations from 2007-2011. For this purposes we have taken 20 listed banks of KSE-100 index. The data of some banks were not available for the whole period that is why we have excluded those banks. The choice of selected banks used to gather the data depend on the availability of data in the concerned period. The data were collected through various sources as annual reports of banks, database of Karachi Stock Exchange and "Financial Statement Analysis of Financial Sector" (2007-2011) published by "State Bank of Pakistan". In this study we have restricted ourselves to only internal factors that may affect the value of share of particular organization.

Dependent Variable

In this study the dependent variable is "Share price" in Pak rupee. The data of daily share price are used as daily closing price is averaged to calculate share price for a year.

Independent Variables

We have used five explanatory/independent variables and tried to identify how they effect on determination of market value of share. The list of variables is as follows:

Return on equity ratio	**ROE**	**Net profit after tax / total share holder's equity*100**
Spread ratio	**SPREAD**	**Interest earned / interest expense*100**
Advances to Deposits ratio	**ADR**	**Gross advances / deposits*100**
SBP discount rate	**DRATE**	**Annualized quarterly discount rate announced by SBP**

Total liability to Total asset ratio	**DEBT**	**Total liabilities / total asset*100**
Share price	**SP**	**Annualized daily share price**

Descriptive of the Data

Bank Name		Minimum	Maximum	Mean	Std. Deviation
ALLIED BANK LIMITED	ADR	65.61	75.99	71.35	4.58
	SPREAD	43.50	52.74	48.07	3.66
	ROE	.20	.28	0.25	0.04
	DEBT	91.57	93.90	92.82	1.04
	DRATE	10.00	13.20	12.28	1.31
	SP	43.60	117.00	77.05	31.15
ASKARI BANK LIMITED	ADR	57.42	83.39	70.79	9.83
	SPREAD	30.73	45.85	40.27	5.73
	ROE	.19	1.47	0.57	0.51
	DEBT	93.27	94.91	94.16	0.70
	DRATE	10.00	13.20	12.28	1.31
	SP	12.00	93.96	40.04	34.83
BANK AL-HABIB LIMITED	ADR	39.72	70.23	57.62	12.73
	SPREAD	38.75	45.13	41.25	2.53
	ROE	.23	.28	0.25	0.02
	DEBT	93.44	94.80	94.27	0.53
	DRATE	10.00	13.20	12.28	1.31
	SP	29.72	67.62	42.57	16.79
BANK ALFALAH LIMITED	ADR	52.68	65.82	60.99	5.10
	SPREAD	30.50	41.84	35.63	4.15
	ROE	-.01	.23	0.11	0.10
	DEBT	94.43	95.12	94.77	0.32
	DRATE	10.00	13.20	12.28	1.31
	SP	10.48	52.77	26.55	21.05
BANKISLAMI PAKISTAN LIMITED	ADR	38.36	53.59	43.46	6.11
	SPREAD	44.31	50.33	47.64	2.45
	ROE	-.01	.08	0.01	0.04
	DEBT	72.80	90.96	82.55	8.80
	DRATE	10.00	13.20	12.28	1.31
	SP	3.61	15.40	8.44	5.30
FAYSAL BANK LIMITED	ADR	77.11	89.17	81.92	5.47
	SPREAD	29.38	36.92	32.71	3.49
	ROE	.07	.22	0.12	0.06
	DEBT	88.56	93.82	92.18	2.11
	DRATE	10.00	13.20	12.28	1.31
	SP	10.65	69.53	30.46	25.49
HABIB BANK	ADR	53.92	80.41	69.63	10.00

LIMITED	SPREAD	56.09	62.76	58.50	2.52
	ROE	.16	.22	0.18	0.03
	DEBT	89.59	91.16	90.46	0.62
	DRATE	10.00	13.20	12.28	1.31
	SP	103.78	265.04	162.57	74.05
HABIB METROPOLITAN BANK LIMITED	ADR	64.59	85.95	76.08	7.78
	SPREAD	29.53	31.53	30.61	0.92
	ROE	.12	.21	0.15	0.04
	DEBT	91.47	92.18	91.89	0.28
	DRATE	10.00	13.20	12.28	1.31
	SP	19.93	78.96	40.65	24.69
JS BANK LIMITED	ADR	46.16	64.14	54.16	7.22
	SPREAD	23.54	40.18	30.99	6.05
	ROE	-.11	.04	-0.02	0.06
	DEBT	74.45	85.18	80.39	4.98
	DRATE	10.00	13.20	12.28	1.31
	SP	2.24	17.13	8.90	7.10
KASB BANK LIMITED	ADR	56.85	100.22	77.90	15.37
	SPREAD	-8.76	21.66	6.29	11.46
	ROE	-1.41	.06	-0.58	0.60
	DEBT	82.24	95.18	90.60	5.27
	DRATE	10.00	13.20	12.28	1.31
	SP	1.40	18.91	10.05	8.18
MCB BANK LIMITED	ADR	50.52	82.64	69.75	12.91
	SPREAD	65.36	85.82	72.94	8.15
	ROE	.24	.34	0.27	0.04
	DEBT	85.63	86.83	86.19	0.50
	DRATE	10.00	13.20	12.28	1.31
	SP	171.33	331.52	245.05	77.20
MEEZAN BANK LIMITED	ADR	37.80	64.58	49.69	11.09
	SPREAD	46.22	54.60	49.98	3.63
	ROE	.10	.22	0.16	0.04
	DEBT	91.51	92.99	92.24	0.59
	DRATE	10.00	13.20	12.28	1.31
	SP	13.47	34.85	22.28	9.18
NATIONAL BANK OF PAKISTAN	ADR	63.37	73.26	67.73	4.96
	SPREAD	48.23	66.50	54.78	8.36
	ROE	.16	.27	0.19	0.04
	DEBT	84.74	88.23	87.00	1.32
	DRATE	10.00	13.20	12.28	1.31
	SP	54.71	251.31	124.88	85.06
NIB BANK LIMITED	ADR	79.36	106.47	95.39	10.15
	SPREAD	14.70	29.55	24.03	7.00

	ROE	-1.23	.02	-0.30	0.53
	DEBT	77.81	91.56	83.98	6.79
	DRATE	10.00	13.20	12.28	1.31
	SP	1.78	22.34	9.46	8.68
SAMBA BANK LIMITED	ADR	56.19	103.99	89.04	19.36
	SPREAD	29.17	43.37	37.85	5.69
	ROE	-.21	.03	-0.09	0.10
	DEBT	66.87	74.02	70.99	3.01
	DRATE	10.00	13.20	12.28	1.31
	SP	1.72	19.35	8.19	7.77
SONERI BANK LIMITED	ADR	67.84	80.26	72.45	4.66
	SPREAD	29.29	37.64	31.55	3.45
	ROE	.01	.16	0.07	0.06
	DEBT	91.22	91.81	91.54	0.24
	DRATE	10.00	13.20	12.28	1.31
	SP	5.46	49.90	21.11	18.79
STANDARD CHARTERED BANK (PAKIST	ADR	67.69	78.90	73.12	4.22
	SPREAD	60.63	71.87	65.62	5.20
	ROE	.02	.11	0.06	0.04
	DEBT	83.15	84.72	84.09	0.65
	DRATE	10.00	13.20	12.28	1.31
	SP	7.74	51.48	21.19	19.25
THE BANK OF KHYBER	ADR	55.51	60.35	57.32	1.84
	SPREAD	22.48	35.86	30.55	5.24
	ROE	-.13	.10	0.02	0.09
	DEBT	80.24	85.06	83.26	2.23
	DRATE	10.00	13.20	12.28	1.31
	SP	3.99	14.79	7.97	5.28
THE BANK OF PUNJAB	ADR	64.49	93.39	78.90	13.55
	SPREAD	1.89	20.52	7.69	7.44
	ROE	-1.99	1.99	-0.06	1.44
	DEBT	91.92	98.42	96.50	2.70
	DRATE	10.00	13.20	12.28	1.31
	SP	6.45	105.50	38.15	42.07
UNITED BANK LIMITED	ADR	60.28	80.80	71.66	8.34
	SPREAD	54.05	58.74	56.21	2.16
	ROE	.17	.37	0.22	0.08
	DEBT	89.36	92.04	90.51	1.38
	DRATE	10.00	13.20	12.28	1.31
	SP	48.20	183.29	94.65	57.47

Graphical Representation

PERFORMANCE MEASURES OF ABL
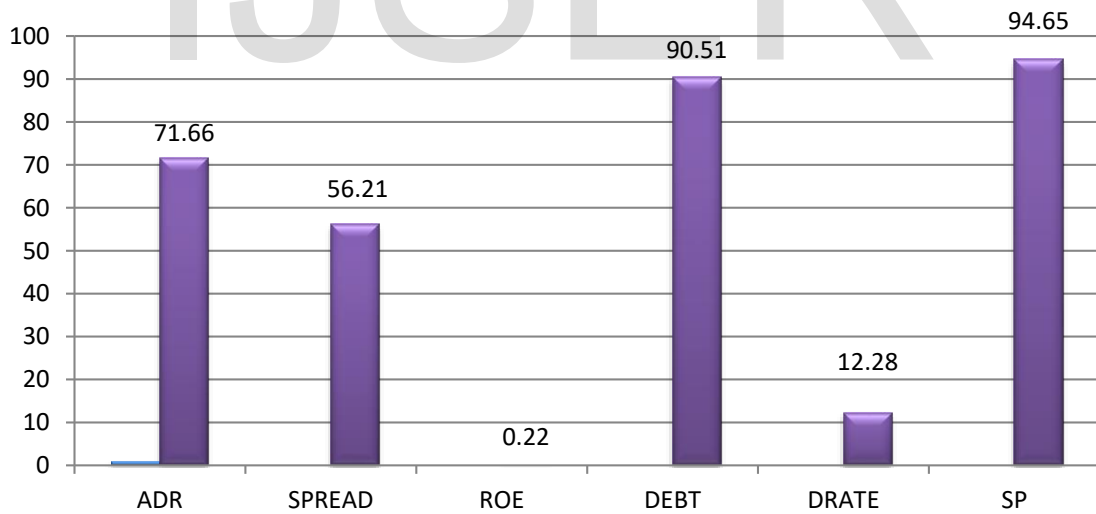(2007-2011)

PERFORMANCE MEASURES OF HBL
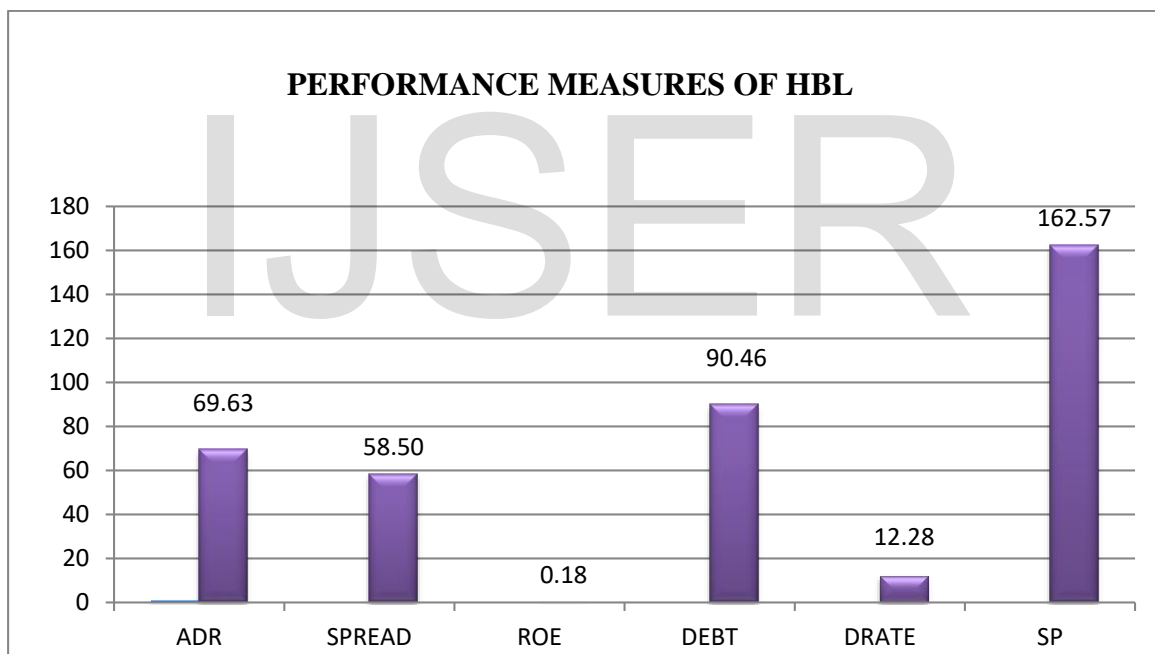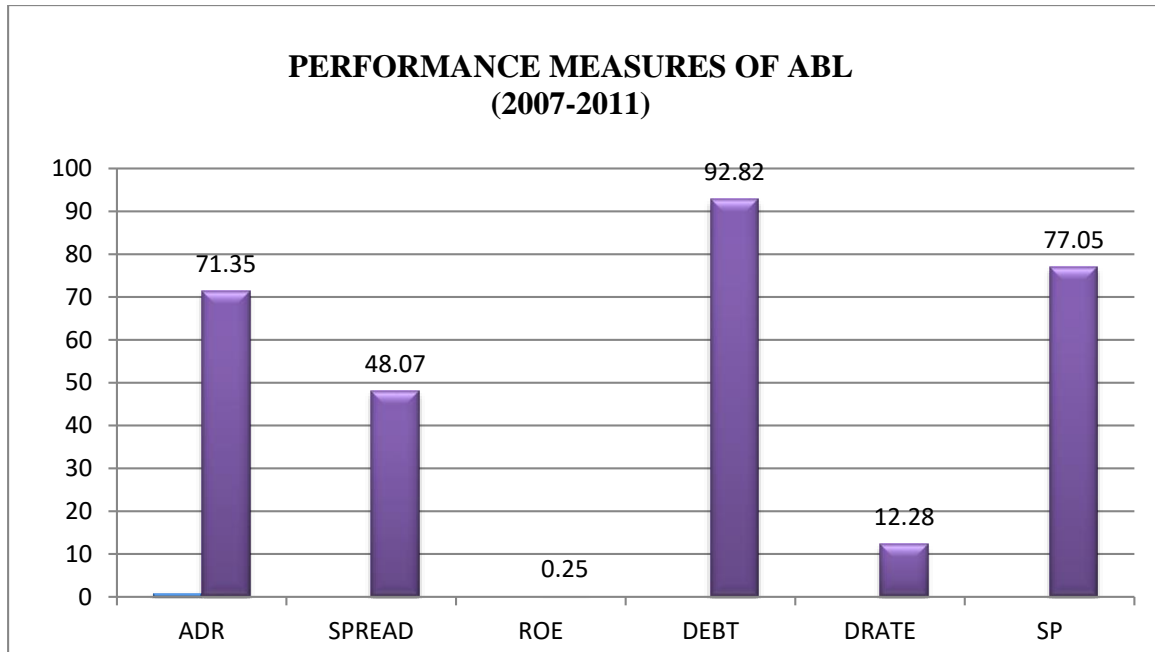
PERFORMANCE MEASURES OF MCB (2007-2011)
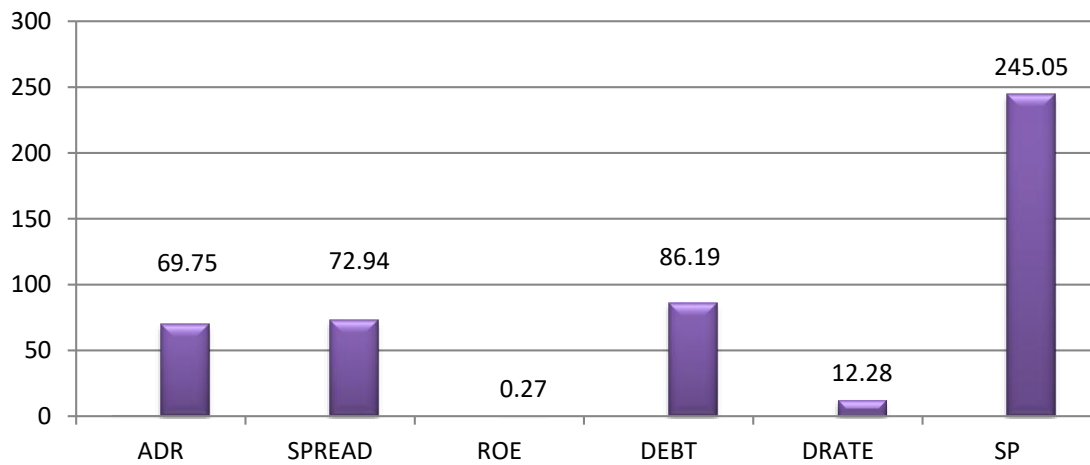
PERFORMANCE MEASURES OF UBL (2007-2011)

Spread at a Glance

SPREAD OF ALL BANKS
(2007-2011)

Share price at a Glance

SHARE PRICE COMPARISON
(2007-2011)
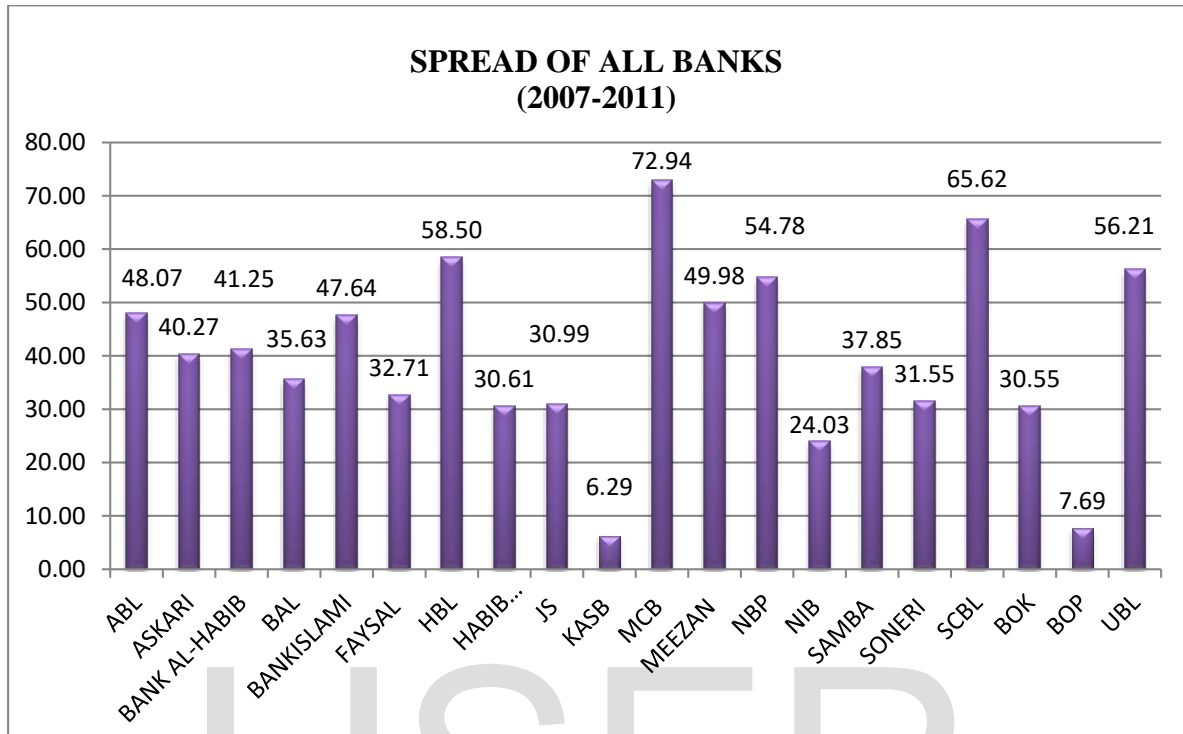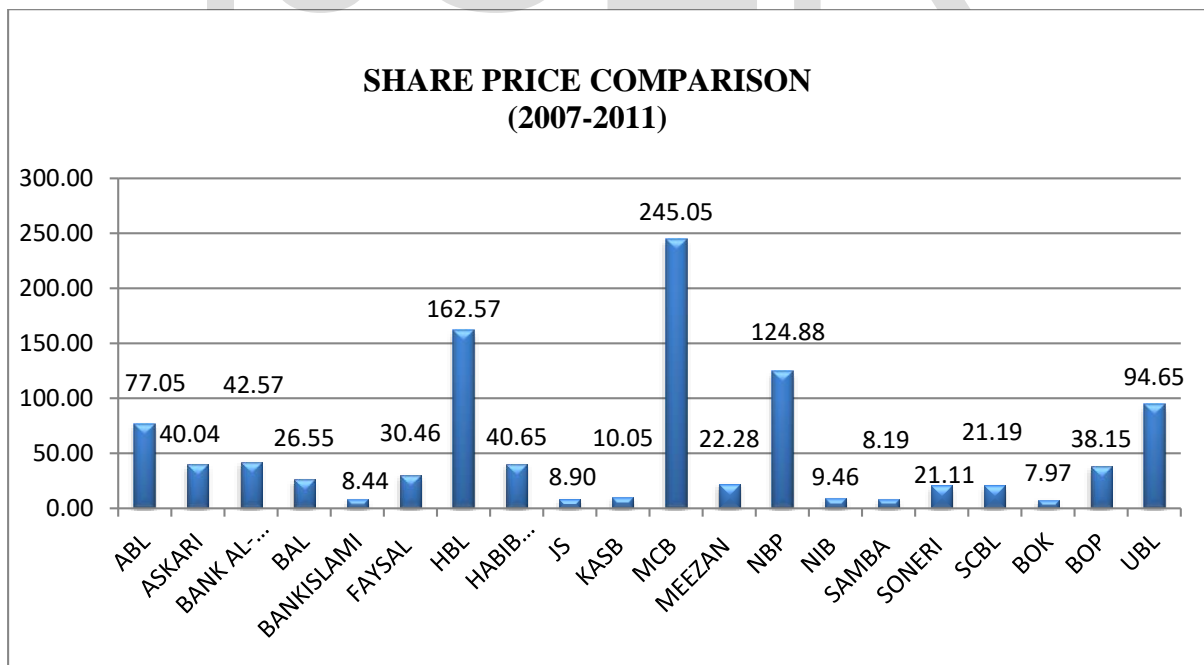
Consistency Analysis with respect to Share Price

Bank Name	Mean	Std. Deviation	Co-efficient of variation
ABL	77.05	31.15	40.43
ASKARI	40.04	34.83	87.00
BANK AL-HABIB	42.57	16.79	39.44
BAL	26.55	21.05	79.28
BANKISLAMI	8.44	5.30	62.82
FAYSAL	30.46	25.49	83.67
HBL	162.57	74.05	45.55
HABIB METROPOLITAN	40.65	24.69	60.72
JS	8.90	7.10	79.79
KASB	10.05	8.18	81.47
MCB	**245.05**	**77.20**	**31.50**
MEEZAN	22.28	9.18	41.18
NBP	124.88	85.06	68.12
NIB	9.46	8.68	91.78
SAMBA	8.19	7.77	94.93
SONERI	21.11	18.79	88.99
SCBL	21.19	19.25	90.84
BOK	7.97	5.28	66.29
BOP	**38.15**	**42.07**	**110.26**
UBL	94.65	57.47	60.72

Graphical Representation of Consistency Analysis

Consistency analysis with respect to share price
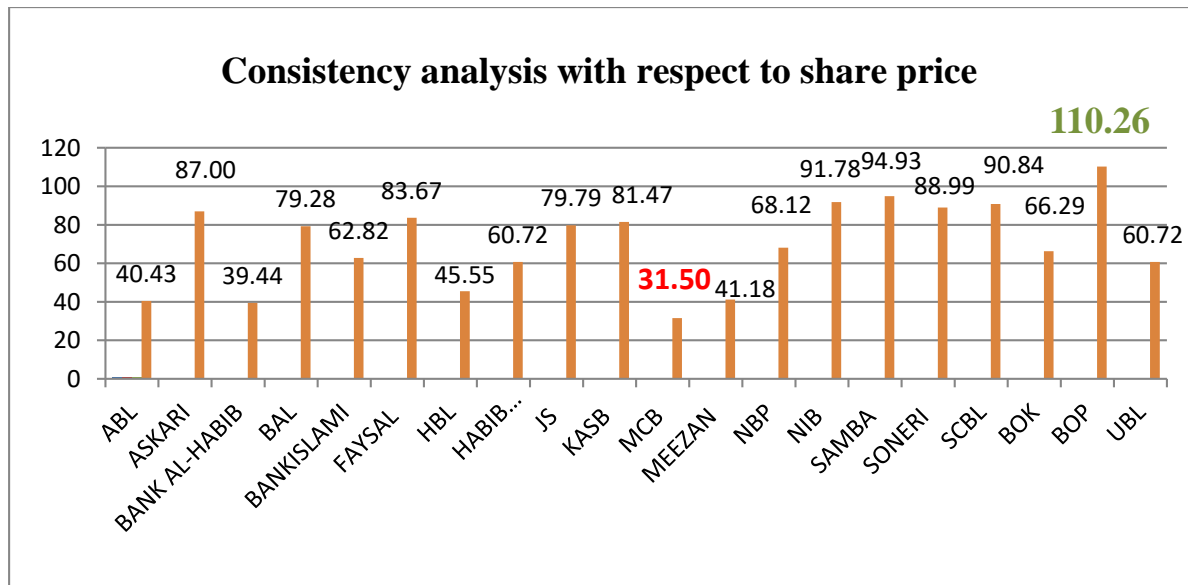
It is clear from the graph that MCB has more consistence share price over the period of 2007-2011 and inconsistency in share price of BOP has been observed during the same time period.

Hypotheses

Ho_1: ADR has no significant impact on share price

Ho_2: SPREAD has no significant impact on share price

Ho_3: ROE has no significant impact on share price

Ho_4: DEBT has no significant impact on share price

Ho_5: DRATE has no significant impact on share price

Model

It is obvious from the above mentioned hypotheses that share price is a function of the impact of advances to deposit ratio, gross spread ratio, return on equity ratio, debt ratio and discount rate. We restricted the influencing factor to five as representative of company's fundamentals. Multiple Linear Regression model is adopted for this study.

$$SR = \alpha + \beta_1 ADR_t + \beta_2 SPREAD_t + \beta_3 ROE_t + \beta_4 DEBT_t + \beta_5 DRATE_t + \varepsilon \text{----------------(1)}$$

Where, α is a constant,

β tells the rate of change

ε is random error which satisfies all assumptions of classical linear regression model (CLRM).

Expected Signs of Parameters

On the basis of studied literature, it can be predicted that the explanatory variables may have the following relation with dependent variable.

β_1	positive
β_2	positive
β_3	negative
β_4	positive
β_5	negative

Findings and Interpretation

A multiple regression analysis was run by taking share price as dependent variable and ADR, SPREAD, ROE, DEBT and DRATE as independent variable. Following table shows the results of regression analysis.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719[a]	**.517**	.490	50.08408

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	246632.877	5	49326.575	19.664	**.000**
	Residual	230774.177	92	2508.415		
	Total	477407.054	97			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-136.760	90.003		-1.520	.132

ADR	1.148	.340	.252	3.374	.001
SPREAD	2.609	.325	.657	8.028	.000
ROE	-4.194	13.576	-.025	-.309	**.758**
DEBT	2.593	.786	.251	3.298	.001
DRATE	-18.340	4.443	-.310	-4.128	.000

Share price variation is almost 52% caused by the independent variables as indicated by the value of R^2. The estimated model is proved to be a significant model as suggests by the significance of ANOVA tableis less than the level of significance 0.05. The variability as measured by coefficient of variation (β)is expectedly positive for ADR, SPREAD and DEBT and expectedly negative for ROE and DRATE is quite significant. The β for ROE is negative but insignificant as in banking sector the equity share is very low that resulted in insignificant relationship of ROE with SP. All other variables are significant as reflected by the significance of coefficient of variation (β) of respective variables.

The estimated form of Eq. 1 is:

$$SR = -136.76 + 1.15ADR_t + 2.61SPREAD_t - 4.19ROE_t + 2.59DEBT_t - 18.34DRATE_t$$

By eliminating insignificant variable (ROE), we finalized the regression model as:

$$SR = \alpha + \beta_1 ADR_t + \beta_2 SPREAD_t + \beta_3 DEBT_t + \beta_4 DRATE_t + \varepsilon \text{-------------------(2)}$$

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	**.518**	.498	49.38075

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	248924.517	4	62231.129	25.521	**.000**

Residual	231653.594	95	2438.459		
Total	480578.111	99			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-138.587	88.143		-1.572	.119
	ADR	1.154	.333	.254	3.461	**.001**
	SPREAD	2.586	.293	.653	8.829	**.000**
	DEBT	2.554	.758	.247	3.371	**.001**
	DRATE	-17.872	4.260	-.302	-4.195	**.000**

After eliminating the insignificant variable ROE, the variation in share price is explained by independent variable ADR, SPREAD, DEBT and DRATE is same as before that was 52%. The estimated form of model 2 is as follows.

$SR = -138.587 + 1.154ADR_t + 2.586SPREAD_t + 2.554DEBT_t - 17.872DRATE_t$

The model suggests that with 1.2% increase in advances to deposit ratio the share price is raised by 1 rupee. Gross spread has much significant positiveinfluence on share price as with every 2.58% increase in spread ratio causing rupee 1 increase in share price. In banking sector, huge deposits mean good position in the market. It is not wrong to say that banking operations start from deposits and deposits are liability on banks. That is why debt ratio of banking sector is very high with respect to other sectors. It was expected that high debt ratio will positively affect the share price that is significantly proved by this analysis as every 2.55% increase in debt ratio results in one rupee increase in share price. SBP discount rate inversely affects the share price by 17.87%. The more the discount rate announced by State Bank of Pakistan, the low will be the share price.

Lastly, the constant α is 138.58 with negative sign. It proposes that the minimum share price in the market is less than zero that is illogical. The price of any share can never be a negative value. It indicates that there are other important variables that significantly affect the share price but ignored in this study. The share price cannot be less than zero unless the company is in liquidation.In this study we have focused only on fundamental variables of banking sector and ignoring all macroeconomic factors that have an influence on the share's market value.

Conclusion

The present study attempted to identify the factors that influence the share price of banking sector of Pakistani stock market. The data for the period of 5 years from 2007 to 2011 is used. The study has chosen advances to deposit ratio, spread ratio, return on equity ratio, total debt to total asset ratio and SBP discount rate as possible determinants of the share prices. The results indicate that advances to deposit ratio, spread ratio, total debt to total asset ratio and SBP discount rate are significant determinants of share prices for the banking sector. The model explains that almost 65% variance in share price is caused by the significant explanatory variables.

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