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Determinants of Value Creation: An Empirical Examination from UAE Market

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ABSTRACT: The study based on a sample of 61 UAE listed companies examines the determinants of value creation. Size in terms of total assets of a firm is inversely related to value creation. Value as measured by market to book value of equity is negatively related to the size measured by total assets. Larger the size in terms market capitalization, higher would be the value created. Higher earnings relative to price signify higher value creation. Firms having higher risk are expected to have higher returns. The study finds statistical support for the fact that increasing leverage increases the risk of equity shareholders. Hence leverage increases leads to increased expected returns to account for increased risk for equity shareholders. The study also suggests that the average market returns is inversely related to earnings to price ratio. Lower average stock returns are predicted for firms with low market value of equity relative to their earnings. Riskier firms tend to have lower earnings relative to their market value of equity.

Keywords: Value Creation; Market Value; Book Value; ROI; Capital Expenditures
JEL Classifications: G2; G3

1. Introduction

Profitability and growth are basically considered as the major determinants of firm value. Corporate strategies can be assessed on the basis of their expected effect on profitability, growth and firm value. The value based planning models suggests that management of a firm aims to create shareholder wealth by maximizing market value of the equity thereby creating excess value over the book value of the firm. A firm's management must focus on strategies that creates excess value attributed to market value (MV) compared to the book value (BV) of equity. A firm's management creates value for shareholders if MV>BV, destroys value if MV<BV and maintains value if MV=BV. Many researchers have focused on establishing the linkage between the strategic position of a company and its financial performance.

Identifying and selecting strategies that create value for shareholders is a major challenge facing management in the modern era. The identification of financial factors which have the highest impact on value creation in a business can facilitate establishment of criteria for appropriate strategy selection in that direction. The ability of a firm to create value by distributing cash flows to its stakeholders depend on its ability for cash generation from its operating activities and access of additional funds through external financing. The two basic sources of external financing are debt and equity financing. A company's ability to borrow today is based on projections of its future cash flow generation.

The shareholder returns basically depends on prices, costs, investments, volume of products sold and riskiness of firms in an industry. The variables representing these factors can be considered as determinants of shareholder value. Working capital and fixed capital investment are the two components of investment value drivers. Management's investment choices and financial policy are also value drivers in the context of riskiness of cash flows for the company. Scale economies for firms in purchasing, manufacturing, distribution and research can generate value drivers in operating margin, working capital investment and fixed capital investment. The link between value chains and value drivers as reflected by sales growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment and cost of capital are basic building blocks of shareholder value creation.

Total risk is the combination of business risk and financial risk. Business risk is the uncertainty inherent in the business operations. Financial risk arises for shareholders on account of the increased leverage due to additional debt in the capital structure. The financial leverage increases would lead to increased variability of cash flows since fixed interest payment is bound to increase. Hence shareholders expect higher returns for highly leveraged firms. Strategies which increase business risk can increase systematic risk which is measured by beta coefficient. Investors expect higher rate of return as the systematic risk of the firm increases.

This study explores the determinants of value creation. The study based on a sample of listed UAE companies aims to explore the significance of important financial variables in explaining the value creation. The study focusses on analyzing the main financial factors which have an impact on stock returns. The objective of the study is to evaluate the joint roles of various financial variables in the cross section of average returns on Dubai Financial Markets (DFM) and Abu Dhabi Stock Exchange (ADX) listed stocks.

2. Review of Literature

The study by Samy et al. (2002) uses random probit model estimation procedure to estimate the determinants of value creation among companies listed in Tunisia stock exchange. The study finds that probability of creating future value is significantly correlated with profitability. The study also finds that value creation is affected by industry patterns, size and nature of property. The linkages between strategic position of a company and its financial performance have been advocated by studies of (De Bodinat, 1978; Pene, 1983; Degos et al, 1988). The study by Rappaport (1983) suggests the determinants of value creation as growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment, cost of capital and value growth duration. Caby et al. (1996) based on a sample of French companies find that the determinants of value creation are variables based on profitability, activity, financial policy, investment policy and dividend policy. The study by Varaiya et al. (1987) highlights the significance of Return on Equity (ROE) as a signal of profitable investment. The results of this study indicate that profitability and growth do influence shareholder value and the market to book value of equity ratio, Tobin‘s q ratio are theoretically and empirically equivalent measures of value creation. The studies by (Ross, 1977; Bhattacharya, 1979; Hakansson, 1982; Miller et al, 1985) suggest that dividend payment signals the market about the higher cash flow generation potential of firms. The choice of debt level is a signal of firm quality (Leland et al, 1977; Ross, 1977). Rappaport (1986) suggests that profitability is an important determinant of value creation. Profitability improvement can result from economies of scale, cost reducing linkages with suppliers and channels.

Banz (1981) advocates size effects (measured by market capitalization) as a significant determinant of average returns provided by market beta. This study finds that average returns on small size (low market capitalization) stocks are too high given their beta estimates and average returns on large size (high market capitalization) stocks are low. Bhandari (1988) documents positive relationship between leverage and average returns. Studies by (Stattman, 1980; Rosenberg et al, 1985) finds that average returns on stocks are positively related to the ratio of firm’s book value of equity to market value of equity. The study by Chan et al (1991) finds that the ratio of book value to market value of equity is a significant determinant in explaining the cross section of average returns on Japanese stocks. Chen et al (1991) postulate that the earning prospects of firms are associated with a risk factor in returns. Firms with low stock prices and high ratio of book to market equity which are characterized having poor prospects by market are considered risky and have higher expected stock returns than firms with strong prospects.

Basu (1983) suggests that the earning-price ratios (E/P) is a variable that explain the cross section of average returns on US stocks which includes size and market beta variables. The studies by (Black et al, 1972; Fama, 1976) find positive relation between average stock returns and beta. The study by Fama and French (1992) suggests that size (measured by market value of equity) and book to market equity are an important determinant which reflects powerful characterization of the cross section of average stock returns during the period 1963-1990. The main results of the Fama and French (1992) study indicates that for the 1963-1990 period, size and book to market equity capture the cross sectional variation in average stock returns associated with size, E/P , book to market equity and leverage. It can be stated that if the stocks are priced rationally, systematic differences in average

returns can be attributed to differences in risk. In the perspective of rational pricing, the variables size measured by the total market capitalization (price multiplied by number of shares) and BE/ME can be considered as proxy variables to sensitivity to common risk factors in returns.

Fama and French (1995) study the behavior of stock prices in relation to size and book to market equity (BE/ME), which reflects the behavior of earnings. Specifically the study explores whether the behavior of stock prices in relation to size and book to market equity is consistent with the behavior of earnings. In the context of rational pricing, the study indicates that high BE/ME signals persistent poor earnings and low BE/ME signals strong earnings. A low stock price relative to book value (high BE/ME) signals sustained lower earnings on book equity. In summary low BE/ME (high stock price relative to book value) is typical of firms with high average returns on capital (growth stocks), whereas high BE/ME is typical of firms that are relatively distressed. Fama and French (1995) also suggest that size is related to profitability. Controlling for BE/ME, small stocks tend to have lower earnings on book equity than do big stocks. Penmann (1991) suggests that low book to market equity firms remain more profitable than high BE/ME firms.

Firms with higher required equity returns will have higher book to market ratios. This prediction is consistent with the positive relation between average stock return and BE/ME observed by Fama and French (1992). Fama and French (1995) predicts that high BE/ME should be associated with a persistently low ratio of earnings to book equity, while low BE/ME should be persistently associated with strong Earnings to book value of equity. In other words low BE/ME stocks are on average more profitable than high BE/ME stocks.

Debt equity ratio (DER) is used as a variable to explain the expected common stock returns. An increase in debt equity ratio of a firm increases the risk of its common equity. Cross sectionally the common equity of a firm with higher debt equity ratio always have higher risk since the firm level risk may vary, DER is expected to be positively co related to the risks of common equity across firms (Bhandari 1988).Beta is based on a market proxy and calculated for a period.

The financial leverage hypothesis suggests that increase in debt is a signal to the market that the firm's prospects have improved. The dividend payout hypothesis suggests that value creation is a function of the dividend payout of companies. Higher the dividend payout more is the value creation for the company. Ross (1977) suggests that companies that increase dividend payout signal to the market that it has the potential to generate future cash flows to meet future dividends. The value of a company is expected to increase on account of dividend payment as it signals to the market that the firm is expected to have higher cash flows. The profitability hypothesis suggests that higher the profits generated by firms, greater would be the value creation.

3. Sample Selection

The companies listed in Dubai Financial Market (DFM stock exchange) and Abu Dhabi Stock Exchange (ADX) was selected based on the asset sizes. Firms with total asset size of more than $500 million in year 2013 were included in the sample study. Altogether 61 companies satisfied the criteria of selection from the total of 65 companies listed in ADX, 55 companies in DFM and 10 companies in NASDAQ Dubai. The value of total assets in local currency Arab Emirates Dhiram (AED) were converted into US dollars at the exchange rate $1 = AED 3.67. Sector wise there are 25 firms in banking sector, 6 in financial sector, five each in insurance and service sector, 7 in real service sector, 4 each in telecom and transport, 2 each in industrial and energy and one firm belonging to pharmaceutical sector.

4. Methodology

Regression analysis was used to study the determinants of value creation. For the dependent variable ME/BE, the values for t period is taken. For year t, the cross section of returns on stocks is regressed on variables hypothesized to explain expected returns.

The accounting data for the fiscal year end t-1 is matched with the average monthly returns for July of year t to June of year t+1. The values for variables of size, dividend payout, profitability are for period t-1.The dummy variables represent the various industry sectors. The financial data was collected from the balance sheets of the firms .The stock market data was collected from stock exchange websites. The market equity at the end of year t-1 is used to compute its book to market equity ratio, leverage measures and earning price ratio.

In the first model analysis the variable of market value of equity to book value of equity at time t (ME_t/BEt) (year 2012) is regressed on variables of dividend payout, size represented by total assets, market value of equity , profitability measures , capital investments measures and working capital investment measures and growth variables of sales, earnings and earning price ratio. E/P is the earnings relative to price (market value of equity). In the first model Debt equity ratio (DER) is used as a measure of leverage. The dummy variables represent the various industry sectors. Variable definition is given in the appendix. The dependent variable values are for the period t (year 2012). The explanatory variables are for period t-1 (year 2011).

$ME_t/BEt = \alpha + \beta_1 DPO + \beta_2 lnTA + \beta_3 lnME + \beta_4 ROE + \beta_5 ROA + \beta_6 CAPEX/TA + \beta_7 WC/TA + \beta_8 SG + \beta_9 EG + \beta_{10} E/P + \beta_{11} D1 + \beta_{12} D2 + \beta_{13} D3 + \beta_{14} D4 + \beta_{15} D5 + \beta_{16} D6 + \beta_{17} D7 + \beta_{18} D8.$

(**MODEL A**)

In the second regression model, the average monthly market returns of sample stocks are regressed on measures of risk, ratio of book to market equity, leverage measures, dividend yield and earnings price ratio. In the second model the leverage variables used are the ratio of book assets to market equity(A/ME) and the ratio of book assets to book equity (A/BE). A/ME is a measure of market leverage, while A/BE is a measure of book leverage. The regressions use the natural logs of the leverage ratios ln (A/ME) and ln(A/BE) .

$AVGMR = \alpha + Beta + \beta_1 ln(ME) + \beta_2 ln (BE/ME) + \beta_3 ln(A/ME) + \beta_4 ln(A/BE) + \beta_5 DIV\ YIELD + \beta_5 E/P + \beta_6 D1 + \beta_7 D2 + \beta_8 D3 + \beta_9 D4 + \beta_{10} D5 + \beta_{11} D6 + \beta_{12} D7 + \beta_{13} D8.$

(**MODEL B**)

In the third regression model the ratio of earnings in year t to the book value of equity in year t-1 is regressed on measures of risk , the ratio of BE/ME and natural log of market value of equity in the year t-1.

Et/BEt-1 =beta + BE/ME+ln(ME)

(**MODEL C**)

Where BE/ME is of period t-1, ln (ME) is for t-1 period.

Table 1. Sample statistics in millions of dollars in 2011

Sector	No. of Companies	Total Assets	Total Earnings	Capex	Market Cap	Total Dividends
Financial Services	36	419435.08	7166.20	9320.17	50282.56	1933.28
Energy	2	34554.22	340.60	1488.28	2792.94	165.40
Industrial	2	2368.64	61.45	97.03	298.17	5.12
Services	5	25502.05	1016.88	832.56	9254.70	199.56
Telecommunication	4	53241.98	3552.60	3016.03	29664.34	942.53
Real Estate	7	930.53	299.21	759.23	149633.01	414.48
Transportation	4	8288.52	223.61	243.63	6520.47	271.39
Pharmaceuticals	1	1575.64	83.46	69.03	1191.95	25.20
Total	61	545896.66	12744.00	15825.96	249638.14	3956.94

Financial Services sector is the biggest industrial sector in UAE market accounting for approximately 77 per cent of total assets of sample firms in the year 2011. Financial sector comprising 36 companies accounts for 56 %, 59%, 20% and 49 % approximately of total earnings, capex, market capitalization and total dividends. Telecommunication sector consisting of 4 companies account for approximately 10 % of total assets, 29 per cent of total earnings, 19% of CAPEX and 12% of market capitalization and 24 per cent of total dividends. Together these two sectors account for 87 per cent of total assets, 84% of total earnings, 80% of CAPEX and 32% of market capitalization and 73 % of total dividends (Table 1).

In terms of average figures, Energy sector accounted for $ 17277 million of assets in year 2011. Telecommunication had an average asset value of $13310 million. The financial sector had an average asset value of $11650 million .Telecommunication sector had the highest average total earnings of $888 million in the year 2011followed by services sector with $203 million in value.

Financial services sector had the highest average capital expenditure of approximately $259 million in the year of study. Real estate sector topped the list in terms of average market capitalization with $4156 million .Financial services paid the highest average dividends with a value of $54 million approximately in year 2011.

Emirates NBD from the financial sector was the largest company in 2011 in terms of total assets with a value of $77551 million which accounted for 18 per cent of the total assets in financial services sector and 14 per cent of the total assets of the entire industrial sector in 2011. Qatar Telecommunications had the highest total earnings of $1619 million among all listed companies in UAE market in 2011. Qatar Telecommunication contributed approximately 46 per cent of the total earnings in telecommunication sector and 13 per cent of the total earnings of listed companies in UAE market. Invest Bank listed in ADX (Abu Dhabi Stock Exchange) made the highest capital expenditure of $1923 million in UAE market which represented 21 per cent of the total capital expenditure in financial sector of UAE and 12 per cent of over all capital investments made by listed companies in UAE. AlMazaya Holding Company emerged as the most valuable company in terms of market capitalization with $143149 million dollars. Emirates Telecommunication Corporation (Etisalat) paid the highest total dividends of $538 million in year 2011. The dividends paid by Etisalat accounted for 57 per cent of total dividends in telecommunication sector and 14 per cent of total dividends in the entire industry sectors.

Table 2. Descriptive Statistics of Variables

Variable	Mean	Std. Deviation	Maximum	Minimum
ME/BE	0.85	0.82	5.17	0.01
Dividend Payout Ratio	0.17	1.72	2.17	-12.67
Debt Ratio	0.18	0.18	0.77	0.00
ln (ME)	6.47	1.92	11.8	0.73
ln (TA)	8.14	1.39	11.26	5.97
ROE	0.08	0.33	2.29	-0.66
ROA	0.03	0.08	0.54	-0.17
CAPEX/TA	0.04	0.09	0.68	0.00
WC/TA	0.05	0.22	0.60	-0.67
Sales growth	0.36	1.40	8.29	-0.71
Earnings Growth	0.37	2.27	12.80	-8.59
Earnings/Price	0.46	1.97	11.49	-2.87
AVG monthly returns	0.04	0.18	0.69	-0.45
Et/BEt-1	0.08	0.12	0.67	-0.24

The descriptive statistics reveals that the sample firms had an average return on equity of 8 per cent and return of assets of 3 per cent (Table 2). Capital expenditure and working capital as a percentage of total assets was 4 per cent and 5 per cent for the sample firms. The sample firms stocks registered average monthly returns of 4 per cent in the year 2012. The average debt component of the sample firms was 18 per cent in the year 2012. The dividend payout was 17 per cent of the total earnings.

5. Analysis and Results

The scope for multicollenarity was initially checked. The variables of ROA and ROE were highly correlated with coefficient value of 0.965. The correlation for total assets and market equity had a value of 0.585. Market equity and earnings to price are negatively correlated with value of -0.518. The coefficient correlation of ROE and E/P ratio is 0.543. The coefficient of correlation of ROA and E/P ratio is 0.511.

Size measured by market equity and earnings to price ratio are negatively correlated. Return on Assets and Capital expenditures scaled by total assets were positively correlated. The variables of

ROE and ROA are significantly positively correlated with CAPEX/TA. (0.313 and 0.310).at 5% The variables of earning growth and working capital to total assets are significantly positively correlated with value 0.275 at 5% level of significance .

Regression Analysis Results

Model A Analysis

Backward regression analysis was employed for the first model to identify the significant variables. The regression models were selected on the basis of the number of significant variables with explanatory powers.

Table 3. Model A.1 Results

Significant Variable	Beta	T	Sig
lnTA	-0.406	-2.646	0.011
ln ME	0.595	3.491	0.001
D8	.634	6.7	0.000
R square =0.639, R square Adjusted =0.496 F=4.474			

Table 4. MODEL A. 2 Results

Significant Variable	Beta	T	Sig
lnTA	-0.406	-2.67	0.010
ln ME	0.595	3.53	0.001
E/P	0.279	1.88	0.066
D8	0.635	6.79	0.000
R square =0.639, R square Adjusted =0.507 F=4.864			

Table 5. MODEL A.3 Results

Significant Variable	Beta	T	Sig
lnTA	-0.407	-3.07	.004
ln ME	0.611	3.879	0.000
E/P	0.290	2.122	0.039
D6	-0.168	-1.753	0.086
D8	0.633	7.132	0.000
R square =0.637, R square Adjusted =0.546 F=7.009			

The regression analysis shows that the variables of size measured by total assets and market value of equity, earning to market value of equity, dummy variables representing real estate and pharmaceuticals are significantly related to the dependent variable of value creation represented by ratio of market value to book value of equity (Table 3, 4, 5). Total assets are inversely related to value creation. The size of the firm is inversely related to value of firm. Smaller firms in terms of total assets tend to create more value compared to large firms. Higher the size of the firm as measured by total assets, lower will be the ratio of market to book value of equity. In other words, firms with larger asset sizes find it difficult to increase the excess value represented by the ratio of ME/BE.

The log of market equity variable is positively related to value represented by ME/BE ratio. Larger the size in terms of market value of equity, larger will be the excess value created for the firm. Higher the earnings generated by the firm, greater would be the value creation .The earnings to price (market value of equity) is found to be positively related to value variable. Higher earnings signify more value creation. The regression results show that firms in the real estate sector firms are value destroyers.

Model B Analysis

The bivariate correlation analysis shows significant positive correlation between variable BE/ME and A/ME (0.920). The variables BE/ME and ME are significantly negatively correlated with value of -0.77. The variable ME and A/ME are also significantly negatively correlated with value of -0.699 (Table 6). The results of backward regression analysis with significant variables are explained below. All the models of analysis give result with similar significant variables. In model 1 the variable of lnBE/ME and dummy variable D1 were excluded. In Model 2 the variable of lnBE/ME, lnA/BE, dummy variable of D1 were excluded. In model 3 the variables of lnBE/ME, lnA/BE, dummy variable of D1 and D2 were excluded. In model 4 the variable of ln BE/ME, ln A/BE, Dividend yield, D1 and D2 were eliminated. In model 5 the variable of lnBE/ME, ln A/BE, Dividend Yield and dummy variables of D1, D2, D8 were excluded. In other models the variable excluded included ln ME along with different dummy variables. .

Table 6. MODEL B RESULTS

Significant Variables	**MODEL 1**			**MODEL 2**			**MODEL 3**			**MODEL 4**		
	Beta	T	Sig	Beta	t	Sig	Beta	t	Sig	Beta	t	Sig
RBETA	0.20	1.6	.11	.21	1.7	.09	.21	1.7	.09	.22	1.88	.065
Ln A/ME	0.53	2.67	.01	0.52	3.02	.004	0.51	3..04	.004	.496	3.01	.004
E/P	-0.38	-2.6	.011	-0.39	-2.7	.010	-0.38	-2.7	.009	-0.37	-2.67	.010
D3	-0.23	-1.7	.09	-0.23	-1.74	.08	-0.23	-1.75	0.08	-0.22	-1.7	.095
	R Square=0.436 Adjusted R Square=0.28 ANOVA F=2.79			R Square=0.436 Adjusted R Square=0.29 ANOVA F=3.08			R Square=0.435 Adjusted R Square=0.31 ANOVA F=3.43			R Square=0.431 Adjusted R Square=0.318 ANOVA F=3.79		
Significant Variables	MODEL 5			MODEL 6			MODEL 7			MODEL 8		
	Beta	T	Sig	Beta	t	Sig	Beta	t	Sig	Beta	t	Sig
RBETA	.22	1.9	.063	.21	1.8	.075	.198	1.7	.09	.24	2.28	.030
Ln A/ME	.512	3.15	.003	.599	4.55	.000	.586	4.49	.000	.55	4.3	.000
E/P	-0.38	-2.71	.009	-0.35	-2.58	.013	-.35	-2.55	.014	-.35	-2.56	.013
D3	-0.22	-1.7	.095	-0.20	-1.59	.118	-.23	-1.6	.11	-.202	-1.6	.112
	R Square=0.426 Adjusted R Square=0.325 ANOVA F=4.2			R Square=0.416 Adjusted R Square=0.327 ANOVA F=4.6			R Square=.409 Adjusted R Square=0.33 ANOVA F=5.23			R Square=0.39 Adjusted R Square=0.328 ANOVA F=5.87		

The analysis find significant relation between average market returns and variables of assets to market equity , risk measured by beta, earnings to market value of equity and the dummy variable representing industrial sector. Average market returns and beta have significant positive relation at 10 % level of significance. Firms having higher risk are expected to have higher returns. Riskier firms will have higher expected returns. This relates to the fundamental principle of higher the risk, higher is the expected return.

The variable ln A/ME has significant positive relation to the dependent variable of average stock returns at all levels of significance. Thus average returns are positively related to market measure of leverage. Higher the leverage of the firm, greater would be the expected returns from the firm. It can be stated that increasing leverage increases the risk of equity shareholders thereby leading to increased expected returns.

The earnings to price ratio (where price is the market value of equity) is negatively related to average market returns. Lower would the average market returns as the E/P ratio increases. In other words higher market returns can be expected if the E/P ratio decreases. If current earnings are used as proxy for future expected earnings, high risk stocks having higher expected returns would have low prices relative to earnings. In short the average stock returns would be lower for firms with low market value of equity relative to their earnings. Companies which cannot create value in the market as reflected in their market value are not expected to generate higher returns in the stock market. Higher value creation in the market leads to higher stock returns.

In the regression analysis we find negative relationship between size of firm (measured by market value of equity) and average returns. Small firms tend to create more returns in the stock market. But the results are not statistically significant. We don't find statistically significant relation between average market returns and book leverage. Results are also not significant for the relationship between average market returns and variables of dividends.

MODEL C ANALYSIS

In this section , the variable of ratio of earnings in the year t to the book value of equity in year t-1 is regressed upon the variables of risk (beta), ratio of book value of equity to market value of equity (BE/ME) and size measured by market value of equity (ln ME). The analysis was aimed at understanding whether size measured by natural log of market value of equity and the BE/ME ratio signals trend of earnings. The findings support only significant negative relation between earnings and beta. Higher the risk of firm, lower is the earnings for the firm (Table 7). In other words riskier firms tend to have lower earnings relative to their market value of equity.

Table 7. Regression Results for Model C

	Beta	t	Sig
BETA	-0.323	-2.618	.011
BE/ME	0.091	0.617	.540
ln ME	.243	1.66	0.101
R Square =0.154 Adjusted R Square =0.109 ANOVA F=3.454			

6. Conclusion

Smaller firms in terms of total assets tend to create more value compared to large firms. Higher the size of the firm as measured by total assets, lower wills the ratio of market to book value of equity. The size measured by the natural log of market equity (market capitalization) is positively related to value creation variable depicted by the ratio of market equity to book equity. Higher the market measure of size (measured by market capitalization), higher would be the value creation. The earnings to price (price measured by market value of equity) have positive relationship with ME/BE variable. Higher earnings relative to price signify higher value creation. Average market returns and beta have significant positive relation at 10 % level of significance. Firms having higher risk are expected to have higher returns. The average return is positively related to market measure of leverage. Higher the leverage of the firm, greater would be the expected returns from the firm. The earnings to price ratio (where price is the market value of equity) is negatively related to average market returns. Lower would the average market returns as the E/P ratio increases. The average stock returns would be lower for firms with low market value of equity relative to their earnings. Riskier firms tend to have lower earnings relative to their market value of equity.

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Appendix 1. Variable definition:
Note: Subscripts't' indicates year 2012 and't-1' indicates year 2011.

Variables	Definitions
ME_t / BE_t	Market value of Equity in year t / Book value of Equity in year t
Dividend Payout (DPO)	Total Dividends / Total Earnings in t-1
Ln TA	Natural log of Total Assets in t-1
LN ME	Natural log of Market Equity in t-1
Return on Equity (ROE)	Net Income / Total Equity in t-1
Return on Assets (ROA)	Net Income / Total Assets in t-1
CAPEX / TA	Capital expenditure / Total Assets in t-1
WC / TA	Working capital / Total Assets in t-1
SG	Sales Growth rate in t-1
EG	Earnings Growth rate in t-1
Earnings / Price (E/P)	Total Earnings / Market Capitalization in t-1. Market Capitalization is price multiplied by number of shares.
Avg MR	Average monthly returns in July of year t to June of year t+1.
Beta	Measures the systematic risk of the stock Beta is found out by regressing stock returns for a stock on market index of DFM or ADX based on one year of data. Beta is calculated for one year period t-1.
Ln (BE/ME)	Natural log of Book value of Equity / Natural log of Market value of Equity in t-1
Ln (A/BE)	Natural log of Total Assets / Natural log of Book value of Equity in t-1
Div Yield	Dividend per Share / Market Price per Share in t-1
E_t / BE_{t-1}	Total Earnings in t / Book value of Equity in t-1
BE/ME	Book value of Equity / Market value of Equity in t-1

Appendix 2. List of Sample Firms, Sectors and listed exchanges

	STOCK EXCHANGE	Banks
1	ADX-Bank	National Bank of Abu Dhabi
2	ADX-Bank	Abu Dhabi Commercial Bank
3	ADX-Bank	First Gulf Bank
4	ADX-Bank	Union National Bank
5	ADX-Bank	Abu Dhabi Islamic Bank
6	ADX-Bank	National Bank Of Ras Al Khaimah
7	ADX-Bank	Bank of Sharjah
8	ADX-Bank	Sharjah Islamic Bank
9	ADX-Bank	National Bank of Fujairah
10	ADX-Bank	National Bank of Umm Al Qaiwain
11	ADX-Bank	Commercial Bank International
12	ADX-Bank	United Arab Bank
13	ADX-Bank	Invest Bank
14	ADX-Bank	Finance House Co.
15	DFM-Banks	Emirates NBD PJSC
16	DFM-Banks	Dubai Islamic Bank
17	DFM-Banks	Mashreqbank PSc
18	DFM-Banks	Commercial Bank of Dubai P.S.C.
19	DFM-Banks	Emirates Islamic Bank PJSC
20	DFM-Banks	Al Salam Bank -Bahrain

21	DFM-Banks	AJMAN BANK PJSC
22	DFM-Banks	Gulf Finance House B.S.C
23	DFM-Banks	Emirates Investment Bank PJSC
24	DFM-Banks	AL SALAM BANK SUDAN
25	NSD-Dubai	Al Baraka Banking Group
26	ADX-Financial	Waha Capital Co.
27	DFM-Finance	TAMWEEL PJSC
28	DFM-Financial	Dubai Investments PJSC
29	DFM-Financial	Dubai Financial Market PJSC
30	DFM-Financial	Gulf General Investments Company
31	DFM-Financial	International Financial Advisors K.S.C.C.
32	DFM-Insurance	ORIENT Insurance PJSC
33	ADX-Insurance	Abu Dhabi National Insurance Co.
34	ADX-Insurance	Al Buhaira National Insurance Co.
35	ADX-Insurance	Emirates Insurance Co.
36	ADX-INSURANCE	Islamic Arab Insurance Company
37	ADX-Energy	Abu Dhabi National Energy Co
38	ADX-Energy	Dana Gas Co.
39	ADX-Industrial	Ras Al Khaimah Ceramics Co.
40	ADX-Industrial	Arkan Building Materials Co.
41	ADX-Services	Abu Dhabi National Hotels Co.
42	ADX-Services	National Marine Dredging Co.
43	DFM-Services	National Central Cooling Co.
44	NSD-Services	DP World
45	NSD-Services	Depa Limited
46	ADX-Telecomm	Qatar Telecom
47	ADX-Telecomm	Emirates Telecommunication Corp.
48	ADX-Telecomm	Sudan Telecommunication Co
49	DFM-Telecomm	Emirate Integrated Telecommunications Company PJSC
50	ADX-Real estate	Al Dar Properties Co.
51	ADX-Real estate	RAK Properties
52	DFM-Real estate	Emaar Properties PJSC
53	DFM-Real estate	Union Properties PJSC
54	DFM-Real estate	Deyaar Development PJSC
55	DFM-Real estate	Drake & Scull International P.J.S.C
56	DFM-Real estate	Al Mazaya Holding Company
57	DFM-Transportation	Agility The Public Warehousing Company (K.S.C.)
58	DFM-Transportation	Air Arabia PJSC
59	DFM-Transportation	Gulf Navigation Holding PJSC
60	DFM-Transportation	ARAMEX PJSC
61	NSD-Pharma	Hikma Pharmaceuticals GDR