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Testing Short Term and Long Term Applicability of CAPM: A Case of Pakistani Cement Industry

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Abstract
This study is conducted to investigate the long term and short term relationship between Risk and Expected Return using the Capital Asset Pricing Model in the cement industry of Pakisatn. Pakistan Stock Exchange Database, Business Recorder and Yahoo Finance were used for collecting data. Moreover, monthly data from July-2009 to June-2015 was used for performing this analysis. Previous studies show that this time period is not analyzed yet for performing the CAPM analysis. Microsoft Excel was used for performing the analysis. In the short term 114 observations were used for performing the analysis and it suggested that only 7 observations are supporting the CAPM. In the long Term or on the average basis, only 7 firms out of 19 firms show favorable results of CAPM. Hence using the results of table 1-20 we can conclude that CAPM is not a valid tool for the investor for finding the Risk and Expected Return.
Keywords: CAPM, Cement Industry, Expected Return, Long Term, Short Term, Risk

1. INTRODUCTION

The Capital Asset Pricing Model was firstly introduced by Jack Treynor (1962), William F. Sharpe (1964), John Lintner (1965) and Jan Mossin (1966) independently, evaluating it from the work of Harry Markowitz on diversification and modern portfolio theory. In 1990 William F. Sharpe, Harry Markowitz and Merton Miller were being awarded by Nobel prize in Economics for their un forgettable contribution in Financial Economics. In 1972 another version of CAPM was being developed by Fischer Black called Black CAPM or zero-beta CAPM, which does not assume the existence of a riskless asset. The general idea behind CAPM is that investors need to be compensated by the time value of money and risk. The time value of money is represented by the risk-free (rf) rate in the formula and time value of money is placing money in any investment over a period of time. The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium (Rm-rf). This study is conducted to investigate the relationship between Risk and Expected Return using Capital Asset Pricing Model(CAPM). Moreover, to analyze how CAPM results are effecting the cement industry firms in the short term and long term? The current study has the following objectives: 1. To find out the Risk and Return relationship of the cement industry for a short period on monthly basis from 2009 to 2015. 2. To find out the analysis in the short period of time by getting different combinations of time period such like from July-2009 to June-2010 fiscal years up to 2015. 3. To find out the long term relationship of Risk and Return relationship of the cement industry on monthly basis from 2009 to 2015. 4. To compare the performance of the companies in cement industry with each other by evaluating their results with market and result which is being evaluated.

2. LITERATURE REVIEW

Javid & Ahmad (2008) added that the economic variables are found to be significant in explaining expected stocks returns. They took data of 49 firms from State Bank of Pakistan database and revealed that conditional CAPM performs relatively well in explaining risk-return relationship in Pakistan during 1993-2009.They concluded that the result is not so convincing only for a few a stocks significant compensation for this risk by investor is observed. Moreover, the empirical result shows evidence in support of conditional multifactor CAPM. The economic variable such as consumption, growth, inflation rate and term structure shows significant important. According to Shamim, Abid & Shaikh (2014) CAPM shows a very unsustainable relationship between the actual return and CAPM return. Earlier studies show that CAPM is a valid tool to predict the expected return on stocks but the later studies conclude that single risk factor model is not able to accurately predict the expected return as there are many other factors that affect the return on investments. Both the excess returns and required rates of returns are integrated of order zero that is they are stationary so study employed simple regression technique. The result concludes that CAPM is not a valid tool for the prediction of expected return of stocks in KSE.

Dai, Hu & Lan (2014) collected data from Shanghai Stock Exchange by using the data of January-1991 to December-2012.They used Expected Return as a dependent variables and the independent variable were risk

free rate of return and risk premium as market risk less free risk rate of return multiplied beta. The one-year deposit interest rate risk-free rate of People's Bank of China is used for risk free rate of return. They concluded that the data used is not appropriate to conclude that the CAPM model found in the Chinese market because small number of individual stocks and the overall amount of data that did not last long. Meanwhile, considering the establishment of the CAPM assumptions, whether rational or efficient market hypothesis, there is no convincing evidence in the Chinese stock market which is "Policy-Driven" in the initial development of the market.

Pathak (2015) conducted his study by using the financial data for the past two years from July2012 to July-2014. The sample size of the study is limited to daily stock closing price of 50 companies which are listed in CNX NIFTY. They discovered that there are also other factors which affect the return. The intention of this study was to empirically examine the applicability of CAPM in the Indian stock market and to examine the securities of certain companies which may over value If an investor may buy them can generate profit for him or under value in this case the investor has to short sell the securities to generate profit for himself and to be save from loses. Hussain, Toms & Diacon (2002) concluded that the three-factor model provides a better explanation of returns than the single factor model or CAPM. There is size, book-to-market, earnings-to-price, cash-flow to price and sales growth. The three-factor model does appear to give a better explanation of average portfolio returns than CAPM and trends on the loadings of the SMB and HML. Although the market anomalies are not fully absorbed it can be concluded from the UK data that the three-factor model is a significant improvement on CAPM and that this is not the result of data snooping.

Haque & Huq (2012) concluded that despite all criticisms, a single-factor CAPM based on relative risk may still be the easiest and simplest way of defining the risk-return relationship that could be used on a routine basis by any ordinary investor regardless of the deficiencies. They collected data by taking into account daily closing prices of 20 companies which had relatively high volumes. The PSX -100 Index was taken as a proxy for the well-diversified market portfolio. The index values and closing prices were obtained for the period starting January2004 up to December-2007. The main objective of the research is to know the risk, return relationship and the main focus is on the beta not on the risk premium. From the empirical study they concluded that the low beta value, if hypothetically considered being the only factor in operation, would mean less price gains for these stocks as their returns would only be responsive to a bullish market.

Raza et. al (2011) used the secondary source of data collected from website of Pakistan Stock Exchange, record room of Brokerage house and website of State Bank of Pakistan. They used actual return as a dependent variable while the independent variables were risk free return, systematic risk and risk premium. The finding of risk free return is from the analysis of Treasury bill. The CAPM gives favorable result when applied as comparison of different industry. In this research they find out the beta for monthly, quarterly and semiannually data. They discovered that in late sixty and seventy the CAPM is a valid tool to predict and is being supported in this era. But in mid eighty it is predicted that CAPM single factor does not validate any more. They also discovered that CAPM give more accurate result and lower beta in monthly and quarterly basis than semiannually basis it means that industrys are moving with market in semiannually basis. They added that investors should focus on monthly basis investment than semiannually basis or annually basis. They suggested that for future research, researchers should go for multi factor CAPM comparison.

Shah & khan (2012) analyzed the daily stock prices of Cement Industry of Pakisatn by using the data of 18 companies for the period of January-2007 to December-2011. The proxy used for finding the beta is covariance of stock return and market return divided by variance of market return. The main objective of their research is to calculate risk and return analysis of cement industry of 100 index. From the empirical analysis they concluded that cement industry is not much risky as to the market risk and gives positive returns but at the same time the beta level differs from company to company hence there is not same level of risk. They recommend that investor should invest in cement industry for the short term period and for the future researcher studies should focus on that why the value of Beta is not the same in the Cement Industry of Pakistan.

Khan et al. (2012) collected data from Pakistan Stock Exchange-PSX for the period 2006-2010 and discovered that CAPM failed to give accurate results and it is not fully applicable to the PSX. Even though significant evidence has been put forward against the use of CAPM, still it remains a good tool for finding out the cost of capital, investment performance evaluation and studies of efficient market. They discovered that the CAPM is not an effective model to Measure risk and required return, and investors, therefore may not depend or rely on it in their investment Decisions. They concluded that for further studies the researchers should focus on the multi factor CAPM, GAARCH and Arbitrage Pricing Model.

Hanif & Bhatti (2010) discovered that CAPM does not fully satisfied which can lead the investor in valuation of underlying securities. They concluded that for future studies should go to GAARCH model and towards arbitrage pricing model.

Qamar, Rehman & Shah (2014) concluded that CAPM single factor model does not hold but after research find out that the CAPM partially show good result in few years. On the basis of their finding they

concluded that the CAPM is not applicable for Pakistan stock exchanges in full extend. They suggest that in future they should go for multi variable model with more sophisticated tools like GAARCH or APT.

3. METHODOLOGY

The current study has used secondary data which was collected from Pakisatn Stock Exchange, Yahoo Finance and Business Recorder. Cement Industry of Pakisatn was selected for performing the analysis and 19 firms out of 22 were selected. In the current study the selection of the data is organizing as on fiscal years. The data collection was made from June-2009 to July-2015 on monthly average basis. Furthermore, by dividing them in 12 months' duration on fiscal basis as from June-2009 to July-2010, June-2010 to July-2011, June-2011 to July-2012, June-2012 to July-2013, June-2013 to July-2014 and June-2014 to July-2015.The main objective for taking the data in the short run was that CAPM provide good evaluation in short Term.

Required Rate of Return is calculated by dividing the current price of stock less previous stock from previous stock. The Standard Deviation is calculated by taking square root of the division of required rate of return less the average of required rate of return from the number of observation. The Risk Free Rate of Return is calculated from the Government Treasury Bills and the Market Return is calculated by dividing the current index less previous index from the previous index. The Systematic Risk beta is calculated by taking the covariance between the variances of market and the required return and the CAPM is being calculated by putting the value in formula: ($Ri = Rf + \beta [Rm - Rf)$

4. DATA ANALYSIS AND RESULTS

Table 1

ATTOCK						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	0.004734	0.13373627	0.02546397	1.514464	0.03333	Over-Valued
2010-2011	-0.02207	0.07100855	0.02091907	0.505112	0.01604	Over-Valued
2011-2012	0.049239	0.10755542	0.00827998	1.632402	0.007075	Under-Valued
2012-2013	0.043716	0.07458152	0.03500188	0.656734	0.02575	Under-Valued
2013-2014	0.020792	0.11219402	0.02872951	2.189551	0.05331	Over-Valued
2014-2015	0.019138	0.08117834	0.01114418	1.087675	0.011483	fair-value
2009-2015	0.019258	0.10218773	0.02158977	1.209372	0.024197	fair-value

Where: RI: Required Return, Std-Dev (RI): Standard Deviation of Required Return shows the risk that is attached with the security in other words security own risk Rm: Market Return, Beta: Systematic Risk CAPM: Capital Asset Pricing Model Valued: It shows if the CAPM value is greater than Required Return so it will be over-valued but if less than it will be under-valued however if equivalent to one than its shows that the risk level is equal to market risk

The value of required return is positive in 2009-2010, 2011-2012, 2013-2104, and 2014-2015 which shows good performances while the required return is negative in 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 13.37% in 2009-2010, 7.10% in 2010-2011, 10.75% in 2011-2012, 7.45% in 2012-2013, 11.21% in 2013-2014, and 8.11% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2011-2012, 2013-2014 and 2014-2015 while there is higher risk of 2.189551 in 2013-2014. In 2010-2011 and 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010 is 2.54% where the beta value is 1.514 means higher than 1 so the required return must be greater than the Rm value but here it is lower than Rm which suggests that the company is not generating good return as compare to the risk level. In 2010-2011 and 2012-2013 the Rm value is 0.0209197 and 0.03500188 where there is beta level than 1 and is generating good return in 2012-2013 while there is unexpected return in 2010-2011.while gain a good return in 2011-2012 as compare to Risk level but the result was not good in 2013-2014 and 2014-2015 as should be.The CAPM value shows fluctuations. The result shows that in 2009-2010, 2010-2011 and in 2013-2014 the CAPM value is greater than the required return while in 2011-2012 and 2012-2013 is undervalued. 2014-2015 the value is nearly equal to the required return.

In the whole period from 2009-2015 the required return is 1.92%,market return is 2.158%, standard division is 10.21%, the beta value is 1.209 which is nearer to one and CAPM value is 2.419% so the CAPM value is nearly equal to the required return and hence fair valued.

Table 2

BESTWAY						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.03418	0.16204964	0.02546397	1.385406	0.031357	Over-Valued
2010-2011	0.005307	0.195508	0.02091907	-0.34941	0.007615	Over-Valued
2011-2012	0.08823	0.27625937	0.00827998	2.649455	0.005138	Under-Valued
2012-2013	0.090122	0.1192625	0.03500188	0.695531	0.026796	Under-Valued
2013-2014	0.041676	0.06205172	0.02872951	0.724842	0.023044	Under-Valued
2014-2015	0.020632	0.06065022	0.01114418	0.612743	0.009648	Under-Valued
2009-2015	0.035298	0.17046265	0.02158977	0.919939	0.020593	Under-Valued

Table 2 shows the values of required return is positive in 2010-2011, 2011-2012, 2012-2103, 2013-2014 and 2014-2015 which shows good performances while the required return is negative in 2009-2010 which shows bad performance of the company at particular year. The standard division shows security own risk which is 16.20% in 2009-2010, 19.55% in 2010-2011, 27.62% in 2011-2012, 11.92% in 2012-2013, 6.20% in 2013-2014, and 6.06% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010 and 2011-2012 while there is higher risk of 2.6494 in 2011-2012. In 2012-2013, 2013-2014 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2010-2011 the beta value is in negative which is almost impossible. The Rm value shows in 2009-2010 and 2010-2011 the beta is also higher than 1 in 2009-2010 and being negative in 2010-2011 which is not possible however market return is higher than required return which shows that the company is not generating return as to the level of risk they bears while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the company get return as to the risk level they bears. The result shows that in 2009-2010 and 2010-2011 the CAPM value is greater than the required return while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.52%,Rm value is 2.158% standard division is 17.04%, the beta value is 91.99 which is nearer to one and CAPM value is 2.059% so the CAPM value is lower than the RI so undervalued.

Table 3

CHERAT						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.02718	0.09235145	0.02546397	0.96022	0.024856	Over-Valued
2010-2011	0.001809	0.08671267	0.02091907	0.409624	0.015098	Over-Valued
2011-2012	0.124188	0.22737441	0.00827998	2.44913	0.005519	Under-Valued
2012-2013	0.059706	0.06393369	0.03500188	0.54652	0.022779	Under-Valued
2013-2014	0.023176	0.16350026	0.02872951	2.85376	0.067034	Over-Valued
2014-2015	0.038814	0.16996893	0.01114418	1.251159	0.012114	Under-Valued
2009-2015	0.036752	0.15336499	0.02158977	1.239814	0.024576	Under-Valued

Table 3 shows the value of required return is positive in 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 which shows bad performance of the company at particular year. The standard division shows security own risk which is 9.23% in 2009-2010, 8.67% in 2010-2011, 22.73% in 2011-2012, 6.39% in 2012-2013, 16.35% in 2013-2014, and 16.99% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2011-2012, 2013-2014 and 2014-2015 while there is higher risk of 2.44913 in 2011-2012. In 2009-2010, 2010-2011 and 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010, 2010-2011 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2013-2014 while in 2011-2012, 2012-2013 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.67%, market return is 2.158% standard division is 15.33%, the beta value is 1.239 hence the security bears higher risk than market risk and CAPM value is 2.45% so the CAPM value is lower than the RI so undervalued.

Table 4

D.G. KHAN						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.01056	0.12824788	0.02546397	1.29703	0.030006	Over-Valued
2010-2011	0.004553	0.1146484	0.02091907	2.074888	0.031517	Over-Valued
2011-2012	0.054235	0.1237885	0.00827998	2.206662	0.005981	Under-Valued
2012-2013	0.0655	0.06531444	0.03500188	0.730556	0.02774	Under-Valued
2013-2014	0.008021	0.08698378	0.02872951	1.634604	0.041843	Over-Valued
2014-2015	0.047988	0.11912276	0.01114418	1.869046	0.014501	Under-Valued
2009-2015	0.028289	0.11244812	0.02158977	1.588871	0.028923	Fair-value

Table 4 shows the value of required return is positive in 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 which shows bad performance of the company at particular year. The standard division shows security own risk which is 12.82% in 2009-2010, 11.46% in 2010-2011, 12.37% in 2011-2012, 6.53% in 2012-2013, 8.69% in 2013-2014, and 11.91% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011, 2011-2012, 2013-2014 and 2014-2015 while there is higher risk of 2.206662 in 2011-2012. In 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return.The Rm value in 2009-2010, 2010-2011 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2010-2011 while in 2011-2012, 2012-2013 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 2.82%,market return is 2.158% standard division is 11.24%, the beta value is 1.588 hence the security bears higher risk than market risk and CAPM value is 2.89% so the CAPM value is nearly equal to Required Return.

Table 5

DADABHOY						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	0.01104	0.16825595	0.02546397	0.503337	0.01787	Fair valve
2010-2011	0.006079	0.09017	0.02091907	0.630924	0.01728	Over-Valued
2011-2012	0.017944	0.17218745	0.00827998	1.742624	0.006865	Under-Valued
2012-2013	0.068663	0.29832031	0.03500188	5.376619	0.152963	Over-Valued
2013-2014	0.057067	0.32395141	0.02872951	3.176114	0.073695	Over-Valued
2014-2015	-0.01494	0.13742173	0.01114418	2.106869	0.01542	Over-Valued
2009-2015	0.02431	0.21757866	0.02158977	2.016308	0.034247	Over-Valued

Table 5 shows the value of required return is positive in 2009-2010, 2010-2011, 2011-2012, 2012-2013 and 2013-2014 which show good performances while the required return is negative in 2014-2015 which shows bad performance of the company at particular year. The standard division shows security own risk which is 16.82% in 2009-2010, 9.01% in 2010-2011, 17.21% in 2011-2012, 29.83% in 2012-2013, 32.39% in 2013-2014, and 13.74% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 while there is higher risk of 5.376619 in 2012-2013. In 2009-2010 and 2010-2011 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010, 2010-2011 and 2014-2015 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2014-2015 while in 2011-2012, 2012-2013 and 2013-2014 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2012-2013 the risk which it bears is very high keeping in view the required return. The result shows that in 2010-2011, 2012-2013, 2013-2014 and 2014-2015 the CAPM value is greater than the required return and in 2011-2012 is undervalued while in 2009-2010 is nearly equal to required return.

In the whole period from 2009-2015 the required return is 2.43%,Market return is 2.158%, standard division is 21.75%, the beta value is 2.016 hence the security bears higher risk than market risk and CAPM value is 3.42% so the CAPM value is greater than the RI so overvalued.

Table 6

DEWAN						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.02501	0.15929173	0.02546397	1.527181	0.033525	Over-Valued
2010-2011	0.008573	0.1414151	0.02091907	1.844161	0.029242	Over-Valued
2011-2012	0.100403	0.32507381	0.00827998	5.167636	0.00034	Under-Valued
2012-2013	0.074307	0.19507854	0.03500188	3.930576	0.113988	Over-Valued
2013-2014	0.017014	0.149191	0.02872951	0.983169	0.028382	Over-Valued
2014-2015	0.09173	0.3228185	0.01114418	1.657905	0.013685	Under-Valued
2009-2015	0.044503	0.2340556	0.02158977	2.22922	0.036898	Under-Valued

Table 6 shows the value of required return is positive in 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 which shows bad performance of the company at particular year. The standard division shows security own risk which is 15.92% in 2009-2010, 14.14% in 2010-2011, 32.50% in 2011-2012, 19.50% in 2012-2013, 14.91% in 2013-2014, and 32.28% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011, 2011-2012, 2012-2013 and 2014-2015 while there is higher risk of 5.16763 in 2011-2012. In 2013-2014 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010, 2010-2011 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2011-2012 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011, 2012-2013 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 4.45%, standard division is 23.40%, the beta value is 2.22922 hence the security bears higher risk than market risk and CAPM value is 3.68% so the CAPM value is lower than the RI so undervalued.

Table 7

DHANDOT						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	-0.08853	0.1242422	0.02546397	0.394692	0.016209	Over-Valued
2010-2011	-0.015	0.26489926	0.02091907	2.11203	0.031883	Over-Valued
2011-2012	0.119141	0.45432279	0.00827998	2.305217	0.005793	Under-Valued
2012-2013	0.080002	0.14796965	0.03500188	0.29082	0.015888	Under-Valued
2013-2014	0.083904	0.27980426	0.02872951	2.250579	0.054571	Under-Valued
2014-2015	0.026635	0.16043689	0.01114418	1.774066	0.014134	Under-Valued
2009-2015	0.034359	0.27302788	0.02158977	1.427162	0.02691	Under-Valued

Table 7 shows the value of required return is positive in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 and 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 12.42% in 2009-2010, 26.48% in 2010-2011, 45.43% in 2011-2012, 14.79% in 2012-2013, 27.98% in 2013-2014, and 16.04% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2010-2011, 2011-2012, 2013-2014 and 2014-2015 while there is higher risk of 2.305217 in 2011-2012. In 2009-2010 and 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2010-2011 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2011-2012 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010 and 2010-2011 the CAPM value is greater than the required return while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.43%, standard division is 27.30%, the beta value is 1.427162 hence the security bears higher risk than market risk and CAPM value is 2.69% so the CAPM value is lower than the RI so undervalued.

Table 8

FAUJI						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.02336	0.11908549	0.02546397	1.379912	0.031273	Over-Valued
2010-2011	-0.00353	0.08602102	0.02091907	0.680279	0.017767	Over-Valued
2011-2012	0.036722	0.15449196	0.00827998	2.899752	0.004661	Under-Valued
2012-2013	0.079994	0.11413581	0.03500188	2.075662	0.033206	Under-Valued
2013-2014	0.038155	0.11605779	0.02872951	2.075662	0.050956	Over-Valued
2014-2015	0.054092	0.08279474	0.01114418	1.363877	0.01255	Under-Valued
2009-2015	0.030346	0.11969579	0.02158977	1.496432	0.027772	fair-value

Table 8 shows the value of required return is positive in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 and 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 11.90% in 2009-2010, 8.60% in 2010-2011, 15.44% in 2011-2012, 11.41% in 2012-2013, 11.60% in 2013-2014, and 8.27% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 while there is higher risk of 2.899752 in 2011-2012. In 2010-2011 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2011-2012 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.03%, standard division is 11.96%, the beta value is 1.496432 hence the security bears higher risk than market risk and CAPM value is 2.77% so the CAPM value is nearly equal to the RI so fair valued.

Table 9

FECTO						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.06231	0.17622824	0.02546397	1.937282	0.039796	Over-Valued
2010-2011	0.000403	0.12004971	0.02091907	1.477803	0.02563	Over-Valued
2011-2012	0.110675	0.26935362	0.00827998	3.702576	0.003131	Under-Valued
2012-2013	0.120399	0.16691412	0.03500188	0.403564	0.018926	Under-Valued
2013-2014	0.023099	0.14824287	0.02872951	2.241543	0.054384	Over-Valued
2014-2015	0.042701	0.17128001	0.01114418	2.338016	0.016313	Under-Valued
2009-2015	0.03916	0.19190993	0.02158977	0.19191	0.033769	fair-value

Table 9 shows the value of required return is positive in 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 which shows bad performance of the company at particular year. The standard division shows security own risk which is 17.62% in 2009-2010, 12.00% in 2010-2011, 26.93% in 2011-2012, 16.69% in 2012-2013, 14.82% in 2013-2014, and 17.12% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011, 2011-2012, 2013-2014 and 2014-2015 while there is higher risk of 3.7025 in 2011-2012. In 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010, 2010-2011 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2013-2014 while in 2011-2012, 2012-2013 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2011-2012 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.91%, standard division is 19.19%, the beta value is 0.19191 hence the security bears lower risk than market risk and CAPM value is 3.33% so the CAPM value is nearly equal to the RI so fair valued.

Table 10

FLYING						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.00646	0.13378809	0.02546397	1.458205	0.03247	Over-Valued
2010-2011	-0.03495	0.07293135	0.02091907	0.814632	0.019091	Over-Valued
2011-2012	0.094588	0.29375066	0.00827998	3.946964	0.002666	Under-Valued
2012-2013	0.052763	0.15482101	0.03500188	1.77344	0.055848	fair-value
2013-2014	0.047047	0.223468	0.02872951	1.632237	0.041794	fair-value
2014-2015	0.058377	0.1297012	0.01114418	0.958828	0.010985	Under-Valued
2009-2015	0.035227	0.18770879	0.02158977	1.584063	0.028864	fair-value

Table 10 shows the value of required return is positive in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 and 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 13.37% in 2009-2010, 7.29% in 2010-2011, 29.37% in 2011-2012, 15.48% in 2012-2013, 22.34% in 2013-2014, and 12.97% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2011-2012, 2012-2013 and 2013-2014 while there is higher risk of 3.946964 in 2011-2012. In 2010-2011 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2011-2012 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010 and 2010-2011 the CAPM value is greater than the required return and in 2011-2012 and 2014-2015 is undervalued while is nearly equal to the required return in 2012-2013 and 2013-2104.

In the whole period from 2009-2015 the required return is 3.52%, standard division is 18.77%, the beta value is 1.584063 hence the security bears higher risk than market risk and CAPM value is 2.88% so the CAPM value is nearly equal to the RI so fair valued.

Table 11

GHARIBWAL						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.06742	0.13720775	0.02546397	0.345047	0.015449	Over-Valued
2010-2011	0.103584	0.45847528	0.02091907	1.927976	0.030068	Under-Valued
2011-2012	0.089161	0.23226184	0.00827998	-0.64274	0.01141	Under-Valued
2012-2013	-0.02302	0.16065536	0.03500188	-1.06789	-0.02073	fair-value
2013-2014	0.071913	0.21490362	0.02872951	3.475512	0.079882	fair-value
2014-2015	0.035126	0.14063829	0.01114418	-0.09042	0.006932	Under-Valued
2009-2015	0.034891	0.25742305	0.02158977	0.490697	0.015247	Under-Valued

Table 11 shows the value of required return is positive in 2010-2011, 2011-2012, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2009-2010 and 2012-2013 which shows bad performance of the company at particular year. The standard division shows security own risk which is 13.72% in 2009-2010, 45.84% in 2010-2011, 23.22% in 2011-2012, 16.06% in 2012-2013, 21.40% in 2013-2014, and 14.06% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2010-2011 and 2013-2014 while there is higher risk of 3.475512 in 2013-2014. In 2009-2010, 2011-2012, 2012-2013 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012, 2012-2013 and 2014-2015 the beta value is negative which is not possible in reality. The Rm value in 2009-2010 and 2012-2013 is greater than value of RI which suggest that the company is not generating good return while in 2010-2011, 2011-2012, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2013-2014 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010 the CAPM value is greater than the required return and in 2010-2011, 2011-2012 and 2014-2015 is undervalued while in 2012-2013 and 2013-2014 is nearly equal to the required return.

In the whole period from 2009-2015 the required return is 3.48%, standard division is 25.74%, the beta value is 0.490697 hence the security bears lower risk than market risk and CAPM value is 1.524% so the CAPM value is lower than the RI so undervalued.

Table 12

KOHAT						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	0.00217	0.14555016	0.02546397	0.567465	0.01885	Over-Valued
2010-2011	-0.00087	0.1102537	0.02091907	0.861227	0.019551	Over-Valued
2011-2012	0.067925	0.08526743	0.00827998	-0.552	0.011237	Under-Valued
2012-2013	0.196643	0.26104529	0.03500188	-0.35831	-0.00161	Under-Valued
2013-2014	0.050037	0.17806911	0.02872951	2.619726	0.062198	Over-Valued
2014-2015	0.056234	0.14878171	0.01114418	-0.35361	0.005916	Under-Valued
2009-2015	0.062024	0.17723454	0.02158977	0.503244	0.015403	Under-Valued

Table 12 shows the value of required return is positive in 2009-2010, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 14.55% in 2009-2010, 11.02% in 2010-2011, 8.52% in 2011-2012, 26.10% in 2012-2013,17.80% in 2013-2014, and 14.87% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2013-2014of 2.6197. In 2009-2010, 2010-2011, 2011-2012, 2012-2013 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012, 2012-2013 and 2014-2015 the beta value is negative which is not possible in reality. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2013-2014 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 6.20%, standard division is 17.72%, the beta value is 0.503244 hence the security bears lower risk than market risk and CAPM value is 1.540% so the CAPM value is lower than the RI so undervalued.

Table 13

LUCKY						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	0.011153	0.11249101	0.02546397	1.281706	0.029771	Over-Valued
2010-2011	0.013509	0.07042134	0.02091907	1.044033	0.021353	Over-Valued
2011-2012	0.05171	0.03777681	0.00827998	-0.22824	0.01062	Under-Valued
2012-2013	0.045165	0.0872885	0.03500188	-0.00354	0.007954	Under-Valued
2013-2014	0.059404	0.06222991	0.02872951	0.841932	0.025463	Under-Valued
2014-2015	0.024607	0.09772512	0.01114418	1.326782	0.012406	Under-Valued
2009-2015	0.034258	0.08386087	0.02158977	0.77678	0.01881	Under-Valued

Table 13 shows the value of required return is positive in 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances. The standard division shows security own risk which is 11.24% in 2009-2010, 7.04% in 2010-2011, 3.77% in 2011-2012, 8.72% in 2012-2013, 6.22% in 2013-2014, and 9.77% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011 and 2014-2015 while there is higher risk of 1.326782 in 2014-2015. In 2011-2012, 2012-2013 and 2013-2014 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012 and 2012-2013 the beta value is negative which is not possible in reality. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2014-2015 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010 and 2010-2011 the CAPM value is greater than the required return while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 3.42%, standard division is 8.38%, the beta value is 0.77678 hence the security bears lower risk than market risk and CAPM value is 1.88% so the CAPM value is lower than the RI so undervalued.

Table 14

MAPLE LEAF						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	-0.01138	0.1780951	0.02546397	1.230117	0.028983	Over-Valued
2010-2011	-0.02882	0.09829266	0.02091907	1.383413	0.024699	Over-Valued
2011-2012	0.151626	0.18536857	0.00827998	-1.13685	0.012351	Under-Valued
2012-2013	0.092836	0.24743675	0.03500188	-1.21138	-0.0246	Under-Valued
2013-2014	0.035281	0.13763679	0.02872951	2.630671	0.062425	Over-Valued
2014-2015	0.091377	0.13100948	0.01114418	2.066362	0.015263	Under-Valued
2009-2015	0.055153	0.18119312	0.02158977	0.817386	0.019316	Under-Valued

Table 14 shows the value of required return is positive in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performanceswhile the required return is negative in 2009-2010 and 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 17.80% in 2009-2010, 9.82% in 2010-2011, 18.53% in 2011-2012, 24.74% in 2012-2013, 13.76% in 2013-2014, and 13.10% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011, 2013-2014 and 2014-2015 while there is higher risk of 2.630671 in 2013-2014. In 2011-2012 and 2012-2013 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012 and 2013-2014 the beta value is negative which is not possible in reality. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2010-2011 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2013-2014 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 5.51%, standard division is 18.11%, the beta value is 0.817386 hence the security bears lower risk than market risk and CAPM value is 1.93% so the CAPM value is lower than the RI so undervalued.

Table 15

PAKCEM						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	0.030948	0.25790671	0.02546397	1.148716	0.027738	fair-value
2010-2011	0.002107	0.08181712	0.02091907	1.294328	0.023821	Over-Valued
2011-2012	0.06351	0.11254155	0.00827998	-0.24474	0.010651	Under-Valued
2012-2013	0.066626	0.2758423	0.03500188	-2.19517	-0.05112	Under-Valued
2013-2014	0.064396	0.14543793	0.02872951	2.372803	0.057096	fair-value
2014-2015	0.019864	0.08294191	0.01114418	0.986737	0.011093	Under-Valued
2009-2015	0.041242	0.17970663	0.02158977	0.687113	0.017693	Under-Valued

Table 15 shows the value of required return is positive in 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances. The standard division shows security own risk which is 25.79% in 2009-2010, 8.18% in 2010-2011, 11.25% in 2011-2012, 27.58% in 2012-2013, 14.54% in 2013-2014, and 8.29% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011 and 2013-2014 while there is higher risk of 2.372803 in 2013-2014. In 2011-2012, 2012-2013 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012 and 2012-2013 the beta value is negative which is not possible in reality. The Rm value in 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears while in 2010-2011, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2013-2014 the risk which it bears is very high keeping in view the required return. The result shows that in 2010-2011the CAPM value is greater than the required return and in 2011-2012, 2012-2013and 2014-2015 is undervalued while in 2009-2010 and 2013-2014 is nearly equal to the required return.

In the whole period from 2009-2015 the required return is 4.12%, standard division is 17.97%, the beta value is 0.687113 hence the security bears lower risk than market risk and CAPM value is 1.76% so the CAPM value is lower than the RI so undervalued.

Table 16

PIONEER						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	-0.05375	0.11793272	0.02546397	1.056958	0.026335	Over-Valued
2010-2011	-0.00763	0.09157923	0.02091907	0.760494	0.018558	Over-Valued
2011-2012	0.106727	0.10718818	0.00827998	-0.50215	0.011142	Under-Valued
2012-2013	0.07853	0.28865298	0.03500188	-1.10642	-0.02177	Under-Valued
2013-2014	0.049734	0.14645372	0.02872951	1.94211	0.048197	fair-value
2014-2015	0.055968	0.09612595	0.01114418	0.952533	0.010961	Under-Valued
2009-2015	0.038265	0.1658909	0.02158977	0.523064	0.01565	Under-Valued

Table 16 shows the value of required return is positive in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performanceswhile the required return is negative in 2009-2010 and 2010-2011 which shows bad performance of the company at particular year. The standard division shows security own risk which is 11.79% in 2009-2010, 9.15% in 2010-2011, 10.71% in 2011-2012, 28.86% in 2012-2013, 14.64% in 2013-2014, and 9.61% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010 and 2013-2014 while there is higher risk of 1.94211 in 2013-2014. In 2010-2011, 2011-2012, 2012-2013 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2012-2013 the beta value is negative which is not possible in reality. The Rm value in 2009-2010 and 2010-2011 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013, 2013-2014 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2013-2014 the risk which it bears is very high keeping in view the required return. The result shows that in 2009-2010, 2010-2011 the CAPM value is greater than the required return and in 2011-2012, 2012-2013 and 2014-2015 is undervalued while in 2013-2014 is nearly equal to the required return.

In the whole period from 2009-2015 the required return is 3.82%, standard division is 16.58%, the beta value is 0.523064 hence the security bears lower risk than market risk and CAPM value is 1.56% so the CAPM value is lower than the RI so undervalued.

Table 17

POWER						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	-0.029	0.23336244	0.02546397	1.44899	0.032329	Over-Valued
2010-2011	-0.02015	0.10071408	0.02091907	1.28555	0.023734	Over-Valued
2011-2012	0.061116	0.15019308	0.00827998	-1.34461	0.012747	Under-Valued
2012-2013	0.071308	0.20647736	0.03500188	-2.43841	-0.05767	Under-Valued
2013-2014	-0.03279	0.0863953	0.02872951	0.410597	0.016551	Over-Valued
2014-2015	0.076452	0.18388779	0.01114418	1.076716	0.011441	Under-Valued
2009-2015	0.021156	0.17577123	0.02158977	0.217217	0.011841	Under-Valued

Table 17 shows the value of required return is positive in 2011-2012, 2012-2013 and 2014-2015 which show good performances while the required return is negative in 2009-2010, 2010-2011 and 2013-2014 which show bad performance of the company at particular year. The standard division shows security own risk which is 23.33% in 2009-2010, 10.07% in 2010-2011, 15.01% in 2011-2012, 20.64% in 2012-2013, 8.63% in 2013-2014, and 18.38% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2009-2010, 2010-2011 and 2014-2015 while there is higher risk of 1.44899 in 2009-2010. In 2011-2012, 2012-2013 and 2013-2014 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012 and 2012-2013 the beta value is negative which is not possible in reality. The Rm value in 2009-2010, 2010-2011 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2009-2010 while in 2011-2012, 2012-2013 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market. The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 2.11%, standard division is 17.57%, the beta value is 0.217217 hence the security bears lower risk than market risk and CAPM value is 1.18% so the CAPM value is lower than the RI so undervalued.

Table 18

SAFEMIX						
Years	RI	StdDev (RI)	Rm	Beta	CAPM	VALUED
2009-2010	0.000757	0.00069117	0.02546397	-0.00249	0.010135	Over-Valued
2010-2011	-0.0168	0.12937824	0.02091907	1.00879	0.021006	Over-Valued
2011-2012	0.030187	0.11914052	0.00827998	-0.78837	0.011687	Under-Valued
2012-2013	0.023829	0.18142158	0.03500188	-1.41157	-0.03	Under-Valued
2013-2014	0.008405	0.08186981	0.02872951	0.099892	0.01013	Over-Valued
2014-2015	0.055189	0.20760582	0.01114418	1.005825	0.011167	Under-Valued
2009-2015	0.020162	0.15264031	0.02158977	0.078456	0.009861	Under-Valued

Table 18 shows the value of required return is positive in 2009-2010, 2011-2012, 2012-2013, 2013-2014 and 2014-2015 which show good performances while the required return is negative in 2010-2011 which show bad performance of the company at particular year. The standard division shows security own risk which is 0.069% in 2009-2010, 12.93% in 2010-2011, 11.91% in 2011-2012, 18.14% in 2012-2013, 8.18% in 2013-2014, and 20.76% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2010-2011 and 2014-2015 while there is higher risk of 1.00879 in 2010-2011. In 2009-2010, 2011-2012, 2012-2013 and 2013-2014 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2011-2012 and 2012-2013 the beta value is negative which is not possible in reality. The Rm value in 2009-2010, 2010-2011, 2012-2013 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2010-2011 while in 2011-2012 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market.The result shows that in 2009-2010, 2010-2011 and 2013-2014 the CAPM value is greater than the required return while in 2011-2012, 2012-2013 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 2.01%, standard division is 15.26%, the beta value is 0.078456 hence the security bears lower risk than market risk and CAPM value is 0.986% so the CAPM value is lower than the RI so undervalued.

Table 19

THATTA						
Years	RI	StdDev (RI)	Rm	beta	CAPM	VALUED
2009-2010	0.020542	0.18677564	0.02546397	0.146759	0.012417	Under-Valued
2010-2011	-0.00224	0.0540518	0.02091907	0.350794	0.014518	Over-Valued
2011-2012	0.028972	0.14028742	0.00827998	0.61906	0.009006	Under-Valued
2012-2013	0.026638	0.21962405	0.03500188	1.184156	0.039965	Over-Valued
2013-2014	-0.00134	0.05810405	0.02872951	-0.93272	-0.01121	Under-Valued
2014-2015	0.018434	0.09194049	0.01114418	0.704862	0.010004	Under-Valued
2009-2015	0.015168	0.14052777	0.02158977	0.327957	0.01322	fair-value

Table 19 shows the value of required return is positive in 2009-2010, 2011-2012, 2012-2013 and 2014-2015 which show good performances while the required return is negative in 2010-2011 and 2013-2014 which show bad performance of the company at particular year. The standard division shows security own risk which is 118.67% in 2009-2010, 5.40% in 2010-2011, 14.02% in 2011-2012, 21.96% in 2012-2013, 5.81% in 2013-2014, and 9.19% in 2014-2015. The beta Value shows the systematic risk or overall market risk. The security bears higher risk than market in 2012-2013 of 1.184156. In 2009-2010, 2010-2011, 2011-2012, 2013-2014 and 2014-2015 the beta value shows lower than 1 which means that the risk level is lower than the market and can generate good return while in 2013-2014 the beta value is negative which is not possible in reality. The Rm value in 2009-2010, 2010-2011, 2012-2013 and 2013-2014 is greater than value of RI which suggest that the company is not generating good return as the level of risk it bears specially in 2012-2013 while in 2011-2012 and 2014-2015 the Rm value is lower than the required return which suggest that company is generating good return than market while in 2012-2013 the risk which it bears is very high keeping in view the required return. The result shows that in 2010-2011 and 2012-2013 the CAPM value is greater than the required return while in 2009-2010, 2011-2012, 2013-2014 and 2014-2015 is undervalued.

In the whole period from 2009-2015 the required return is 1.51%, standard division is 14.05%, the beta value is 0.327957 hence the security bears lower risk than market risk and CAPM value is 1.32% so the CAPM value is nearly equal to the RI so fair valued.

Table 20
Cement sector from Jun 2009-Jul 2015 (AVERAGE)

1	ATTOCK	0.019258	0.102188	0.02159	1.209372	0.024197	fair-value
2	BESTWAY	0.035298	0.170463	0.02159	0.919939	0.020593	Under-Valued
3	CHERAT	0.036752	0.153365	0.02159	1.239814	0.024576	Under-Valued
4	D.G. KHAN	0.028289	0.112448	0.02159	1.588871	0.028923	Fair-value
5	DADABHOY	0.02431	0.217579	0.02159	2.016308	0.034247	Over-Valued
6	DEWAN	0.044503	0.234056	0.02159	2.22922	0.036898	Under-Valued
7	DHANDOT	0.034359	0.273028	0.02159	1.427162	0.02691	fair-value
8	FAUJI	0.030346	0.119696	0.02159	1.496432	0.027772	fair-value
9	FECTO	0.03916	0.19191	0.02159	0.19191	0.033769	fair-value
10	FLYING	0.035227	0.187709	0.02159	1.584063	0.028864	fair-value
11	GHARIBWAL	0.034891	0.257423	0.02159	0.490697	0.015247	Under-Valued
12	KOHAT	0.062024	0.177235	0.02159	0.503244	0.015403	Under-Valued
13	LUCKY	0.034258	0.083861	0.02159	0.77678	0.01881	Under-Valued
14	MAPLE LEAF	0.055153	0.181193	0.02159	0.817386	0.019316	Under-Valued
15	PAKCEM	0.041242	0.179707	0.02159	0.687113	0.017693	Under-Valued
16	PIONEER	0.038265	0.165891	0.02159	0.523064	0.01565	Under-Valued
17	POWER	0.021156	0.175771	0.02159	0.217217	0.011841	Under-Valued
18	SAFEMIX	0.020162	0.15264	0.02159	0.078456	0.009861	Under-Valued
19	THATTA	0.015168	0.140528	0.02159	0.327957	0.01322	fair-value

Table 20 shows the average return of over all cement sector of Karachi stock exchange covering the period from June 2009 to July 2015.from the table it can be easily judge that the competitive risk and return relationship of companies with each other as well as identified that in the same sector, is there same risk and return or differ from each other. Out of 19 companies 7 companies give us the expected result as to CAPM, As their required rate of return is nearly equal to the CAPM result.Out of 19 companies 11 companies show the result lower than the expected result while only one company show the result overvalued.

5. Conclusion and Recommendations

There are 19 companies in the cement sector of KSE-100. Have taken the data on monthly basis for the period from July 2009 to June 2015 hence 6 year data and19 companies so the total 114 observation out of which only 9 observation are in support of CAPM hence from the selected result They accept the alternative hypothesis of H1, H2 and null hypothesis H3.but when to take the data on average basis for the period of 6 years as the data conclude that out of 19 companies only 7 companies show favorable result to CAPM hence from the suggested result mentioned above from table 01 to 20 we conclude that the CAPM is not a valid tool any more to find out the investors risk and return. As it give result mostly on the business cycle as some research has been taken place and they find out that the CAPM give accurate result in short term but to compare it with our analysis we found that the data is being engaged in period of recession as the period taken by us is recession free phase and the result is been totally opposite to that of other researcher as it conclude that we should go for other tools to find the risk and return.

The recommendation for the research is that to go for the long term data instead of going to short term as from the analysis its found that short term is only validate when the Collected data covers the recession phase. As in 2007 to 2008 the phase was recession phase so the research done (Dr. Syed Zulfiqar ALi Shah and Muhammad Ikhlas khan, 2012)conclude that go for short term.The limitation of the study is that specfic sector as well as the data was concluded only for short and average long term. Could also go for over all market as well as data analysis for different sector competetion.For the future researcher it is suggested that go for overall market and analysis of the different sector with each other to enhance the risk and return of different sector, if using single factor CAPM. They can also go for the multi variable CAPM model.

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