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Factors Affecting Stock Market Sensitivity – A Case from Cement Sector of Pakistan

Muhammad Waqas Salim[1]
Muhammad Furquan[2]
Muhammad Bilal[3]

Abstract

The purpose of the study is to investigate stock market sensitivity through C.A.P.M model on "Karachi stock Exchange" cement sector with 4 selected companies: "Lucky Cement", "Attock Cement", "Fauji Cement", and "D.G Khan Cement". To get the result test such as "Augmented Dickey Fuller" (ADF) was applied to measure the significance level of selected companies stock prices against K.S.E-100 index. The result reveals that "D.G Khan Cement" stock returns impact is positive towards K.S.E-100 index as compare to rest of the companies and only lucky cement is the company's impact is negative towards market as this return series unable to establish any association with market. Researches' are not limited so as studies continues there is further need on this topic to be conducted on stock market sensitivity and the C.A.P.M model where sample size of companies can be large from one or more sector particularly in K.S.E-100 index.

Keywords: Stock Market, Cement Sector, Karachi Stock Exchange (KSE), Capital Asset Pricing Model (CAPM)

1. Introduction

1.1 Background of the study

A C.A.P.M model characterizes the link among expected return and risk, which can be applied as a cost factor for certain precautions. It states to the estimated arrival or portfolio of precautions is equivalent to the securities which are risk free, in addition to risk premium. If the expected return is negative to the given return in that case the investment shouldn't be accepted and the security market line describes the results of C.A.P.M for all different risks (betas). This Theory was composed by "William Sharpe 1964" and "John Lintner 1965". Jack Treynor has also contributed in the development of this model.

1 *Muhammad Waqas Saleem is currently an MBA student KUBS. He is very dedicated in research.*
2 *Muhammad Furquan is an Assistant Professor at Indus University, teaching courses related to finance.*
3 *Muhammad Bilal Raees is a lecturer at Indus University. Currently he is teaching accounting courses.*

Basis of the formula for CAPM in general if we called it is the rate which is free from risk such as government short term and long-term bond and securities. Additionally, equity investors require additional premium for taking risk which is higher than normal risk securities. As any investor to get return on investment which is safe than you have to subsists this market premium which is the predictable return from the market.

1.1.1 Definition of "C.A.P.M"

A Model with the aim of attempts the link among possibilities and estimated Return on an investment to facilitate the acceptable investments worth of stock. The supposition at the back of the C.A.P.M is that the money has 2 values: the time value and the risk value. That's why, the asset risk or investment must be the moment investors or their money in investments and the comparative investment risk pay compensation. This reward is in accumulating to the risk-free return.

An analyst illustrates the link b/w expected return and risk, and it serves like a form for the pricing of riskier security. The (CAPM) declare that the risk of price only by normal investor is "systematic risk", since that risk can't be removed during diversifications. The (CAPM) states to the estimated returns of the security or portfolios correspond to the interest rate premium and risk free, risk multiplied by the systematic risk of the asset. Theory was expanded by Sharpe (1964) and Lintner (1965)

1.1.2 Background History of C.A.P.M.

The C.A.P.M was expanding near the beginning 1960's by "William Sharpe" in 1964, "Jack Treynor" in 1962, "John Lintner" in (1965) and "Jan Mossin" in 1966 separately. The fundamental thought of C.A.P.M is that people who put money must be compensating in both ways of moment in time cost of capital and risk. Moment in time cost of capital has been further explained by "rf" for the investors.

The remaining part of method permits us to recognize the risk and to measure the quantity of reward which the investor calls for on growing the risk. This estimation came from taking a risk calculate "beta" with the intention to fit to the investment of capital and its return according to market along with its premium in excess of era of moment.

As before time as the 1960's, it strikes how to know about risk- whether it is from observed facts or in terms of theory. ultimately, stock and option markets do have to be continuation as a minimum of "1602" after contribute to "the East India Company" started dealing in "Amsterdam" (Dela.vega in 1688); plus, it become sound urbanized organized insurance markets by the 1700s (Bernstein, 1996).

In spite of the actuality as of the huge the past real risk manner and risk distribution into identical economic markets, when basic experimental element regarding "risk and return" in the asset's marketplaces weren't so far reactive and the fantasy root of judgment creation beneath ambivalence were reasonably innovate that's the occasion when the CAPM model was launched.

Specific theories of investor risk partiality and judgment-creation beneath uneven appeared mostly into the effort of von (Neumann & Morgenstern ,1944). How people who put money can build up collection of funds and split savings to maximum exchange risk against profit, which wasn't launched until near the beginning of 1950s by (Markowitz ,1952) and it told us by "Theory of Portfolio". Likewise, major, the observational count up of the return and risk was in early of 1960s for the reason of scientific examination, and individual have to gather, store and process market data when an enough computing power is available.

Fisher & Lorie (1964) said that the return on stock which is listed on New York stock exchange is "surprising to realize that there have been no measurements of the rates of return on investments in common stocks that could be considered accurate and definitive."

A capital market in which all investor's individually reform and avail the Markowitz condition for their portfolios. The C.A.P.M. categorized the equilibrium condition of the market, when all individuals improve their conditions. The C.A.P.M takes into account supply and demand in the capital market. It develops the market-clearing condition that demand is equal to supply at equilibrium.

1.1.3 Importance of CAPM

In "1990", "William Sharpe" gained a reward for his financial effort in introducing the "capital asset pricing model" C.A.P.M. Basically, C.A.P.M have been used for estimating the required return to shareholders. As it helps in estimating the value of economy stock and the weighted average cost of capital W.A.C.C for capital budgeting. Basic uncertainty in finance is how the expected return should be influenced by risk investment. The "capital asset pricing model" C.A.P.M manage the primary reasonable scheme designed for recognize the query.

1.1.4 Definition of BETA

Beta, in terms of money and investment is determined of a stock or portfolios instability relative to the broader market. Calculate the proportion of the statistical variance of the assets that cannot be lessening presented by portfolios diversification a lot of risky assets, due to this correlates with the other asset's return in the portfolios.

" Beta" is a numeric value that characterizes the movement of one of the measures of changes in the stocks around the stock market. Beta calculate the stock price sensitivity to change in the stock market in general That allows the investors to make a decision whether to go for risky stock than stock with high market (beta > 1), or one other less volatile (correlated beta < 1).

1.1.5 Background of BETA

"Beta" is a numerical importance which processes the variations of a stock to changes in the whole stock market, stocks/shares that fluctuates greater than the stocks market ultimately has "beta >1.0". With the greater beta stock is assumed too risky except offer a possible greater return, the beta with low or less than 1 stocks offer lower risk but also lower returns.

The original model was considered academically and estimated selected forward looking, original work shows the market place measures 'systematic risk' considering expecting upcoming covariance of the company return with overall market.

Usually the C.A.P.M relation is forecasted using simple regression on previous outcome, where Ks is the y variable, and Km – Krf "or the market risk premium" is the individual x variable. Carefulness should be taken as the return worked into the regression as well as for all the same periods as well as planned stock returns must be annual if the 'risk free' rate is an annually Rate.

Stock "market risk premium" is just variances among returns of market collection and the 'risk free' rate. Researchers normally use a value weighted portfolio to alternative of the market portfolios, and a one-month T-Bills rates to alternative for the risk-free rates. Experts may use just as weighted portfolios (not all do) and tend to use long term T-bond for 'risk free rate'. The major conflict between two is over the "risk free rate" proxy.

Researchers demand the rate which is free by all kind of risk, as well as "interest rate risk". Experts need a defaulting risk-free mechanism with a more like maturities to stocks.

In current finance theory investor, shareholder and additional market applicants can defend them self from risk through differentiating their investment. To the range risk is negative correlate, or correlate by market risk, the unsystematically spread risk of a differentiated investment portfolios "will lead to cancel out, making a risklessportfolios."34 to the amount systemic risk has emotional impact market, still, it is positive interrelated with the market and can't be differentiated away.

A common factor in the several explanations of "systemic risk" is that a generate event, for example an economic surprise or formal failure reasons a chain of bad economic concerns also referred to as domino impact. These consequences could take in "a chain of" financial institutions and/or market failures. Less histrionically, these consequences may take in "a chain of" major loss to financial institute or significant financial market prices unpredictability. In both cases, the significances affect financial institutes, market, or each.

Investments in stock and predictable returns from such investments always come with risk. Financial economists and financial analysts have been at work for years to find out methods to reduce risks. Whatever all financial analysts have faith in is the making healthy expanded portfolios can reduce risk. Fama (1976), Elton and Grubber (1977), Evans and Archer (1968) along with several additional analysts have exposed that well differentiated portfolio can really reduce risk" and have recommended the lowest number of stocks required for a healthy differentiated portfolio.

Investment in stock and all other financial assets have two simple restrictions: Risk and Return. These two restrictions have an opposite relation and all shareholders face a tradeoff between the risk & Return. Two kinds of Risks are: “Systematic” and “unsystematic risk”. “Systematic Risk” is the Risk which is essentially with investments because of fluctuations within the entire economy and it’s unavoidable.

The main issues for such risks are economic political and social condition. The systematic risk is not diversifiable.

1.1.6 Industry Overview

In 1947 when Pakistan became independent country, there was two manufacturers of gray cement on that time. After that because of competition number of cement producers increased to six during period of 1948-1958. In Ayub Khan period market enlarged and construction work was at boom and number of cement producers increased by 3 because of growing demand for cement and was around 6-9 cement producers in our country. During period of Zulfikar Ali Bhutto all industrial sectors were nationalized, so more modification came in all industrial sector during 1971-1977.

In 1977-1988 during the period of Zia-ul-Haq all industrial sector was privatized by him which increases investment in market of housing and construction and increasing demand of cement increases cement manufacturers companies from 9 to 24. Then in 1997 industry has a stage that is likely reached on over production capacity after meeting domestic demand due to denationalization and un control prices in 1992.After that from 2000-2010, production capacity increases by approx. 16 million tons to 44 million.

Currently the cement sector in our country contributes 1.2% of worldwide production of cement which consists of 24 plants with yearly production ability of cement 44.7 million tons. The key drivers of local demand are the events of Public Sector Development Programmed (Infra structure), real estate and construction work. The main confront for the cement sector is the energy cost which is above 50% of the total cost. It is predictable that the cement sector will benefit from the diminution in the FY13 budget EDF, and the previous promise of worth USD 16 billion resident supports to Afghanistan became a global contributor seminar.

1.2 Objective of the Study

The purpose of this learning is to consider stock market sensitivity of cement sector since last two years 1st January 2012 to 31st December 2013 which can be seen by the four statistical report of KSE. Statistical test is regulating to inquire about the positive return in the capitals market for bearing the market risk. According to this model excess return on the assets can be identified on risk free rate. It can also be conceived that residual risk holds no role in describing the expected returns on assets and alpha which are equivalent to Zero.

1.3 Statement of the Problem

There is stock market sensitivity (KSE) on cement sector. It has been inspected since long time in finance literature whether or not beta responds to it systematically to the news of positive and negative aspects. In this statement we exemplify three market scenarios, good, usual and bad. We investigate the irregular response of beta to the different market conditions by accepting the CAPM model through beta to calculate the sensitivity of cement sector stock market.

1.4 Hypothesis

H0: "Beta" is equal to 1

H1: "Beta" is not equal to 1

2. Literature Review

The investors usually expect high return for their investments, no matter whether the investment is done in riskier securities or any business project. For this sole purpose investor try to find different ways, probably model to calculate the risk existing to any investments.

The Capital-Asset-Pricing-Model, in such matter to be widely used by the investors or finance managers for discovering the risk and return of their investment (Jagannathan & Wang, 1993)

According to Porter and Blume (1993) CAPM suggest the equilibrium link between risk and return, since it is a concept there is parallel relationship between systematic risk scaled by beta and expected returns.

After the enrichment of the CAPM, wide increase in the use of beta has been noticed, especially in investment community for calculating the risk (Porter & Blume, 1993). Number of analyzers were involved in the examining the validity of CAPM in distinguished methods, hence, they came up with different results with significant empirical formula.

The linear relationship of CAPM described by the security market line (SML), which correlate the systematic risk of a share and the return (Watson & Head, 1998), along with the risk of the market and risk-free return of rate. (Horne, 2006).

In the light of the model greater the "systematic risk", greater would be the returns, "unsystematic risk" may be reduced through the diversifications of portfolios; investor is remedied by the compensation for the "systematic risk" of the securities, that can be put in other line (Lau & Quay, 1974).

The systematic risk is calculated by beta, which share some positive similarity return. The CAPM uses beta in different ways such as in discovering the risk, and for determining the expected return (O'Brien & Srivastava, 1995).

Beta simplifies us to disclose the fluctuation in price of a share, in addition with determining the linked movement of share portfolio to the market portfolio (Jones, 1998).

According to the analyzer Keogh, (1994), In South African statement, discover the fluctuations in beta, negatively affecting the significance of beta and CAPM, especially in South Africa. Whereas,

the results provided by (Bradfield, G.D.I, & Graves, 1988) were positively at the side of the CAPM, and declared it to be a useful model, in the context of JSE.

Equivalently, to test the effectiveness of CAPM, number of studies have been organized in Pakistan, for instance Karachi Stock Exchange by (Ahmed & Javid, 2008), which supported the traditional CAPM in explaining the risk and return relationship. The capital asset pricing model has been assessed on lots of basis, i.e. the investigation of power of (CAPM), has been found less effective, as it depends on only beta for result and uses market return for computation of return (Hanif & Bhatti, 2010). Whereas, Moyer, Mcguigan, and Krelowm (2001) along with Reilly and Brown (1997) have disclosed the CAPM has somehow fulfilled many of its expectations, and the generally, the unrealistic assumptions do not have any prominent negative effect on its appropriateness. Some researchers consider CAPM as unable to take into account all the factors that affect the returns, which then made them to develop a multi-factor model, i.e. Arbitrage Pricing Theory (APT), which was put forward by Ross (1976), as cited in Laubscher (2001). But the burden of risk and return has still kept the model of CAPM, very helpful to the investors and is still considered for research studies, especially in analysis of risk and return.

In 2011 Ahuja, implicit that putting money in stocks and predicted return from such investment usually comes with risk. To minimize risk various financial experts worked for years and come to a point that well-diversified portfolio should be developed to minimize risk on investment (Fama, 1976; Elton & Gruber, 1977; Evans & Archer, 1968). The conventional C.A.P.M, which describes the return of the stock only on a scale β, lying on the supposition with the intention of every contributor in the market share hope for the average self-matching and contrast the allocation of return, and the governor's choice based solely on moment of the time. However, the experiential facts as of the text points out variation from the representation to the official assumption. It is practical to the allocation of return differ with the passage of moment (Engle, 1982; Bollerslev, 1986). By way of explanation, the sharing of the stock's dividend is time variant in nature and, therefore, expect a special moment varies from one period to another. The equity return is understood in the traditional C.A.P.M moments as investors' expectations, fixed as an alternative of random variables behave like that means. C.A.P.M at different time moments, the main concern with a proposal to the expectations of investors still share the same point in time, however those point in time be doubtful on information at this moment of time. Without "(Fischer in 1972)", asset riskless have suggested the use of zero portfolio beta Rz Show this is the "{COV (Rz show, RM) = 0} ", as an alternative asset risky into this situation C.A.P.M rely on factors that is 0=beta and non-zero =beta collection of capitals, & ran as two-factor C.A.P.M, represented as two.

"E (Ri) = E(Rz) + βi[E(Rm) – E (Rz)]"

"Excess form"

When "Excess Return"

"E (Ri) – E (Rz) = βi[E(Rm) – E (Rz)]"

The exposure the capital asset pricing models to test pilot and as far as past 40 years. Broad survey into the premature "(Sharpe-Lintner-Black (SLB)" form include Black, Jensen and Schools (1972), Reiganum and Banz (1981), Stambaugh (1982), Shanken (1985) and Blume, Friend, and Mellon (1973). However, in the results of the support offered very little model CAPM indicating a significant positive relationship between these studies actual return & regular risk the same as considered by β, and the relationship between risks. As soon as the share value in reply in the direction of an occasion and profit which is required and how it affects the profit which is required of the risk deal is the focus of studies occasion.

According to Jensen, (1968), the event has turn out to be a significant element of the learning of financial economics. As soon as the share value in reply to an occasion and returns and irregular returns, and how it affects the return of the risk deal is the focus of studies occasion (Brown and Warner in 1985), once on precisely happened and the event has a noteworthy impact on prices, and the way of single exposed of the predictable return to compute every day irregular returns is a significant thought next to the momentum of price modification to account for information that is competent. C.A.P.M is practiced by different experts worldwide to get the predictable return of the stocks for instance Lau and quay (1974) on Tokyo stock exchange and tested that the model learning expects the returns precisely. Similarly, Bjorn and Hordahl (1998) found an inter-link between the predictable return and the moment varying risk on Swedish Stock Exchange showing rewarding of same learning. The comparison of this model results was also done with established model GARCH. Moreover, from C.A.P.M point of view the outcomes were dissimilar from the universal observation, associating that established C.A.P.M is discarded from the universal observation in such belongings where the models rely on additional broader risk.

The study done by the Fraser and Hamelink (2004) acknowledged that the outcomes of C.A.P.M remained precise in the premature researches but with the way of occasion some other precise apparatus outdid the C.A.P.M for example APT (Arbitrage Pricing Model) by examining London Stock Exchange (LSE) and the outcomes were compared with the restricted GARCH model. Garch model calculate expected risk and return correctly but C.A.P.M is not meeting real situation. A same research was done in Australian Stock Exchange by Groenewold and Frase (1997) and outcome was same

However, contradicting to above studies Diwani (2010) found that Exchange the observed evidences don't assist the applicability of the C.A.P.M model. Furthermore, the research also considered to examine that is the residual risk is disturbing the estimated returns of the stocks or not. The residual risk of different stocks added to examine, which then proposes that this difference puts no impact on the estimated return.

3. Methodology

3.1 Data and Variables

For our current study analysis secondary data is used. We have collected this data from previous studies. The stock market prices on daily basis up to 2 year from 1 January 2012 till 31 December 2013 of Lucky Cement, D.G.Khan Cement, Attock Cement, & Fauji Cement listed on KSE and it is our major resources of figures and facts for this learning.

Stock prices information of above listed companies will be obtained from KSE and other brokerage houses websites. Moreover, websites are also applied for the relevant facts and figures for the focus. The data i.e. the stock prices of the sample companies is for the period of 1 January 2012 to 31 December 2013.

The dependent variables are Expected return of stock, Independent variable is Expected return of market and the slope or sensitivity is beta.

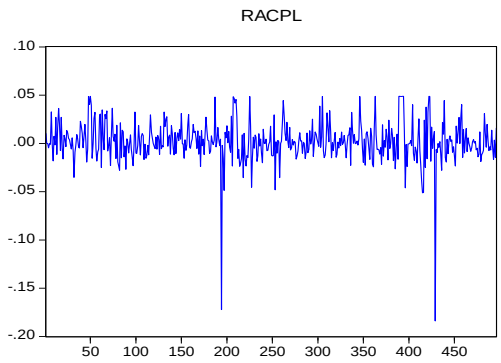
3.2 Model

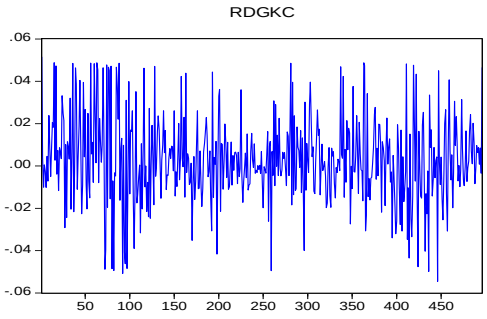
A casual research is used for our research topic and the model which we are using is "Capital Asset Pricing Model" "C.A.P.M".

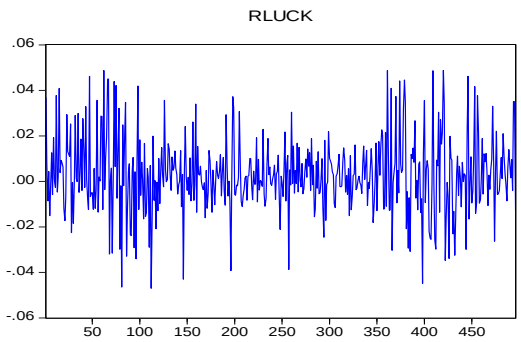
$Rs= Rf + (Rm-Rf)\ \beta$

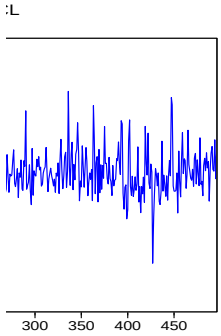
4. Results and Discussion

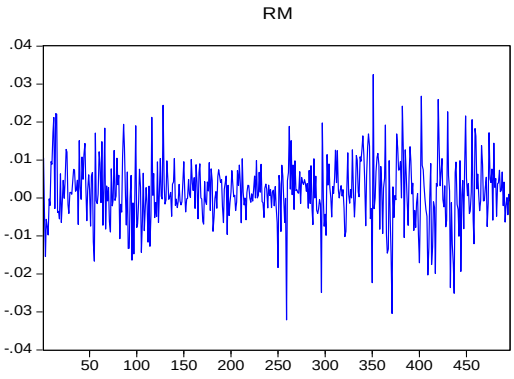
4.1 Result











As a preliminary analysis, graphs are obtained for all the return series i.e. Lucky cement (RLUCK), DG Khan cement (RDGKC), Attock cement (RACPL), Fauji Cement (RFCCL), and KSE 100 index (RM). These graphs depict unit roots in all of the returns series which means they all are stationary at level. Moreover, the graphs also show the variations in the return's series. As a formal investigation of unit roots, Augmented Dickey Fuller (ADF) test is applied which exactly let us know the status of unit root whether it exists in the said return series or not.

Table 4.1

Series	Level	1st Diff	Level of Integration
RLUCK	-19.33341***	-	I(0)
RDGKC	-23.39725***	-	I(0)
RACPL	-19.33341***	-	I(0)
RFCCL	-18.25984***	-	I(0)
RM	-19.72136***	-	I(0)

*Test critical values:	1%level	-3.443334
	5% level	-2.867159
	10% level	-2.569825

*Mackinnon (1996) one sided p-values.

***shows significance at 1%

The table shows that all the return series including market (KSE 100 index) returns are stationary at level as their respective ADF t values are extra depressing than the MacKinnon (1996) vital principles; hence all the return series are integrated of order 1. Now in order to check sensitivity of each return series, all the companies' return series are regressed over market return.

Table 4.2

Dependent Variable: RACPL

Method: Least Squares

Date: 03/29/14 Time: 15:21

Sample: 1 496

Included observations: 496

Variable	Co-Efficient	Standard Error	t-Statistic	Probability.
C	0.001354	0.000954	1.418598	0.1566
RM	0.462647	0.110346	4.192706	0.0000
“R-squared”	0.034362	“Mean dependent var”		0.002106
“Adjusted R-squared”	0.032407	“S.D. dependent var”		0.021225
“S.E. of regression”	0.020878	“Akaike info criterion”		-4.896214
“Sum squared resid”	0.215331	“Schwarz criterion”		-4.879252
“Log likelihood”	1216.261	“Hannan-Quinn criter”		-4.889556
“F-statistic”	17.57878	“Durbin-Watson stat”		1.793184
“Prob(F-statistic)”	0.000033			

The sensitivity of Attock Cement is o.462 which is significant at 1% as p-value is lesser than 0.01. Further, model’s explanatory power is 34.36% which is also significant as F-statistics exceeds 4 followed by its p-value which is lesser than 0.01. Moreover, sample size is adequate because the difference between R-square and Adjusted R-square is less than 5%.

Table 4.3

Dependent Variable: RDGKC

Method: Least Squares

Date: 03/29/14 Time: 15:24

Sample: 1 496

Included observations: 496

Variable	Co-Efficient	Standard Error	t-Statistic	Probability.
C	0.001469	0.000842	1.744650	0.0817
RM	1.029762	0.097342	10.57880	0.0000

"R-squared"	0.184699	"Mean dependent var"	0.003142
"Adjusted R-squared"	0.183048	"S.D. dependent var"	0.020377
"S.E. of regression"	0.018418	"Akaike info criterion"	-5.146988
"Sum squared resid"	0.167570	"Schwarz criterion"	-5.130026
"Log likelihood"	1278.453	"Hannan-Quinn criter"	-5.140330
"F-statistic"	111.9111	"Durbin-Watson stat"	2.267793
"Prob(F-statistic)"	0.000000		

The sensitivity of DG Khan Cement is 1.03 which is significant at 1% as p-value is lesser than 0.01. Further, model's explanatory power is 18.47% which is also significant as F-statistics exceeds 4 followed by its p-value which is lesser than 0.01. Moreover, sample size is adequate because the difference between R-square and Adjusted R-square is less than 5%.

Table 4.4

Dependent Variable: RFCCL

Method: Least Squares

Date: 03/29/14 Time: 15:24

Sample: 1 496

Included observations: 496

Variable	Co-Efficient	Standard Error	t-Statistic	Probability.
C	0.001697	0.001272	1.334042	0.1828
RM	0.953431	0.147034	6.484438	0.0000

"R-squared"	0.078441	"Mean dependent var"	0.003246
"Adjusted R-squared"	0.076575	"S.D. dependent var"	0.028950
"S.E. of regression"	0.027820	"Akaike info criterion"	-4.322127
"Sum squared resid"	0.382322	"Schwarz criterion"	-4.305165
"Log likelihood"	1073.887	"Hannan-Quinn criter"	-4.315469
"F-statistic"	42.04794	"Durbin-Watson stat"	2.027546
"Prob(F-statistic)"	0.000000		

The sensitivity of Fauji Cement is 0.953 which is significant at 1% as p-value is lesser than 0.01. Further, model's explanatory power is 7.84% which is also significant as F-statistics exceeds 4 followed by its p-value which is lesser than 0.01. Moreover, sample size is adequate because the difference between R-square and Adjusted R-square is less than 5%.

Table 4.5

Dependent Variable: RLUCK

Method: Least Squares

Date: 03/29/14 Time: 15:25

Sample: 1 496

Included observations: 496

Variable	Co-Efficient	Standard Error	t-Statistic	Probability
C	0.002941	0.000752	3.909615	0.0001
RM	-0.017985	0.086969	-0.206795	0.8363

"R-squared"	0.000087	"Mean dependent var"	0.002912
"Adjusted R-squared"	-0.001938	"S.D. dependent var"	0.016439
"S.E. of regression"	0.016455	"Akaike info criterion"	-5.372351
"Sum squared resid"	0.133759	"Schwarz criterion"	-5.355389
"Log likelihood"	1334.343	"Hannan-Quinn criter".	-5.365693
"F-statistic"	0.042764	"Durbin-Watson stat"	1.997962
"Prob(F-statistic)"	0.836255		

In this research, the sensitivity of Luck Cement is -0.0017 which is insignificant as p-value is not less than even 0.1. It has a very low r-square value which is also insignificant. This return series unable to establishes any association. Moreover, F-statistics and its corresponding p-value endorse the same insignificant relation.

Table 4.6

Dependent Variable: RM

Method: Least Squares

Date: 03/29/14 Time: 15:30

Sample: 1 496

Included observations: 496

Variable	Co-Efficient	Standard Error	t-Statistic	Probability.
C	0.000978	0.000355	2.750775	0.0062
RACPL	0.026117	0.017054	1.531471	0.1263
RDGKC	0.159408	0.020468	7.788285	0.0000
RFCCL	0.017136	0.014264	1.201394	0.2302
RLUCK	0.012311	0.021046	0.584972	0.5588
"R-squared"	0.192352	"Mean dependent var"		0.001625
"Adjusted R-squared"	0.185772	"S.D. dependent var"		0.008504
"S.E. of regression"	0.007674	"Akaike info criterion"		-6.892007
"Sum squared resid"	0.028913	"Schwarz criterion"		-6.849602
"Log likelihood"	1714.218	"Hannan-Quinn criterion".		-6.875362
"F-statistic"	29.23449	"Durbin-Watson stat"		1.971436
"Prob(F-statistic)"	0.000000			

Finally, we had a look at the response of the companies' returns towards the market return. The results describe that only DG Khan Cement returns impact KSE 100 index returns significantly by almost 16% which is significant at 99% confidence interval. Rest of the companies' returns does not contribute significantly towards the market returns as their p-values are lesser than even 0.1. Over all explanatory power of the model is 18.57%. However, overall model is significant as F-statistics is greater than 4 followed by its p-value which is less than 0.01.

4.2 Discussion

As previously in this report we have discussed that motive behind the research is to identify stock market sensitivity of cement sector and for that we have collected data of last two years from (1st January 2012 to 31st December 2013) from K.S.E sources through C.A.P.M model. We choose C.A.P.M model because today investors want high return against their investment in stocks. According to (Jagannathan & Wang in 1993) C.A.P.M is the model which was widely used by most of the investors to find out risk and return on investments. According to Porter & Blume (1993) CAPM model directs you to balance the link of risk and return. Moreover, for measuring risk there is Beta which is widely used by investor's population now a days. Furthermore (O'Brien & sriva stave, 1995) research said that through beta we can measure systematic risk as C.A.P.M model is capable of using Beta in diverse ways. After applying C.A.P.M model and "Augmented Dicker Fuller" (ADF) on variables our findings are that in this research, that a p-value is not lesser than 0.1 that's why "lucky cement" is insignificant as the sensitivity of particular stock is -0.0017 and "D.G.Khan cement" is showing significant as its return is almost according to the market of K.S.E-100 index and confidence interval is 99% as compare to return of the remaining stocks of "Attock" and "Fauji cement" which is 0.462 and 0.953 significance level respectively. So, results and findings show that there is existing of sensitivity on particular stock of sector and due to it each stock return on investment is different from each other which is basically the sensitivity of cement sector companies of K.S.E-100 index.

5. Conclusion and Recommendation

Since the analysis of data showed that "Attock Cement", "Fauji-Cement" "DG-Khan Cement" all have the value of beta less than 1 thus showing low sensitivity of the cement sector, moreover having a negative value further indicating that the return that these cement industries provide is even less than risk free rate.

By studying and conducting this research we recommend that stock market systematic risk is uncontrollable as it can't be control by any business management as behind systematic risk there are macroeconomic variables which creates risk of all macroeconomic factors but it isn't impossible to tackle and prepare yourself against these kind of risks and it depends on the particular company that how well it is taking calculated risk against investment of the investors as in this study we are able to find out that from one sector you can get the return on your investment very high and low which means sometime expected and unexpected , so companies and market performance basically tells you where you have to invest to get the maximum return and where you can mitigate your risk on your investment mostly in researches authors says that investing in diversify portfolio of stocks can lower down your risk on your investment and you will get at least acceptable return on your investment.

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