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Downsize Risk and Momentum Effect: A Case of Pakistan

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ABSTRACT

The aim of this current research is to analyze the downside risk and momentum effects for predicating the expected stock returns by taking into account the size effects (measured in term of market capitalization) and value effects (measured in term of book to market ratio) factors. The Study uses closing prices of stocks listed at the Karachi Stock Exchange (KSE) on monthly basis. The data period used in this study is from January 2000 to December 2015.Fama and Macbeth (1973) procedure is engage to investigate the association between the variables. The results of the momentum effect in this study support the null hypothesis for all the generated pools that stock returns for a portfolio which are previously performing well in the present market situations at lower risk has surpassed those which have lower returns at higher risk. It means investors can increase their earnings by investing in those stocks, that perform well and selling poorly performed stocks over the last 1-6 months. In this study, the outcomes for downside market risk are in favor for the null hypothesis for overall time period 2000-15. The key findings demonstrate that downside market risk indicate that the premium is associate with the downside risk and it will represent the relationship between risk and expected return in better way. The empirical results of the study are of great interest for investors which help them in designing the effective investment strategies. Specially, the findings of the study help investors to understand the appropriate measure of risk and develop well diversified portfolios. The findings of the study are also helpful for the firm manager during capital budgeting decision as they help them to cost the equities properly.

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1. Introduction

This research examines the relationship between stock returns and multifactor asset pricing model such as size (SMB), investment (CMA), value (HML), profitability (RMW) and momentum (WML) under framework of downside risk (DRM). Size of firm is calculated by capitalization of firm, and it categorized into small capitalization firm and big capitalization firm (SMB). Investment is another market tool to check the relation between return and risk (Saksonova & Kuzmina-Merlino, 2019). Investment calculated by total asset of firm and categorized into high investment firm and low investment firm (CMA). Value is another market indicator to measure the risk. Profitability of firm calculated by earning per share and it divided into high profitability firm and low profitability firm (RMW). Momentum is another factor which impact on stock returns, and it is calculated by average return of last 12 months and categorized into high past return and low past return firms (WML). Downside risk (market risk) factor is calculated by downside market risk (DMR). A proper risk measure helps determine appropriate risk-adjusted returns for bearing a given level of risk. There exists a large body of

literature attempting to identify the risk measure that better explains the cross-section of stock returns. Yet, no consensus has been developed among researchers to identify a proper risk measure that better captures investors' risk perception. Therefore, the question which individual risk measure is best in explaining equity returns remains one of the major topics of empirical investigation in finance literature. Most of the existing empirical studies have attempted to investigate the ability of different risk measures in combination in order to explain stock returns. There is strong evidence that the mean-variance CAPM performs poorly. A criticism of the mean-variance CAPM is its disregard to up and down movements of asset returns. The concept of downside risk is considered as an alternative. However, only a few studies compare the performance of the mean-variance CAPM and the pricing models in a downside framework.

After the financial disasters, financial market and investors are in a state of confusion (Wang, 2014). Experience and well-educated market players analyze the performance of stock market due uncertainty, fluctuations, movement and rapid changes in the stock price (Jang & Sul, 2002). But lay and uneducated investors are confused either to buy or sell the stock. The optimal and outmost objective of every investor is to attain a higher future return thus maximizing the return. In order to get the prime benefit of stoke returns; investors avoid the risks due stock prices volatility and movements. Risk management is more important in terms of managing it after the market failure in 2008 (Leo, Sharma, & Maddulety, 2019; Singh & Singh, 2018). Derivative market factor like financial market globalization, technology development, integration of financial system and complexity create new sources of risks that need to be managed and identified properly. The growth of financial system regarding trade activities results in more financial risk for both firms and investors. That's why needed better risk management to identify and measure risk. Uncertainty of losses known as financial risk. Investors are more concern about their losses. That's why this study highlights the importance of downside risk and test whether the downside risk is better measuring tool in asset pricing model. In this study we use multifactor asset pricing model to check the impact of these factors on adjusted return or return portfolio under framework of downside risk in Pakistan Stock Exchange (PSE).

1.1. Problem Statement

The problem is to explore the impact of multifactor asset pricing model on stock returns under framework of downside risk. If there is any association then how this relationship is beneficial for investors, managers, researchers and business organization etc. In the theory of the mean-variance framework of a portfolio selection, variance is used as the risk measure (Al Janabi, 2015). However, variance has been criticized as a risk measure as it equally weights the upside risk and the downside risk. In general, investors are more concerned about the downside risk as it results in losses while the upside risk results in unexpected profit. For investors deciding how to allocate assets a downside risk measure might be a better approach than using variance. While selection of portfolio, investor has tended to be careful firstly, about higher average return portfolio, secondly, portfolios having lower risk or deviation. Thirdly, they take such portfolio, which does not perform poorly. Investors are more conscious about risk which is associate with losses in recession periods with lower mean and bit higher risk. Investors now may differ in their desire or ability to take on recession –related risk as well as in their tolerance for accepting the overall risk.

1.2. Objective of the Study

The main objective of this study is:

- To investigate the effect of multifactor asset pricing model (Size, value, investment, profitability and momentum) on stocks return under framework of downside risk in Pakistan Stock Exchange.

The secondary objectives of the study are:

- To examine impact of factor size on portfolio return under framework of downside risk of listed companies in Pakistan Stock Exchange.
- To examine impact of factor value of the firm on portfolio return under framework of

downside risk of listed companies in Pakistan Stock Exchange.

- To examine impact of factor investment on portfolio return under framework of downside risk of listed companies in Pakistan Stock Exchange.
- To examine impact of profitability on portfolio return under framework of downside risk of listed companies in Pakistan Stock Exchange.
- To examine impact of momentum on portfolio return under framework of downside risk of listed companies in Pakistan Stock Exchange.

2.0. Review of Literature

Different theories are discussed with respect to their origins and applications. This chapter is related to the literature review based on research of various authors and impact of market or various organizational factors on the return on equity. It also covers the theoretical reviews based on various theories and researchers. The secondary data on various stock exchanges of different countries are also reviewed in this chapter. The most important is the empirical study based on various theories that clear the relation among dependent and independent variables. The multifactor asset pricing model is also part of this chapter that includes size, investment, profit margin, value, momentum and downside risks. Stock return or portfolio returns are dependent variable in this study and its valuation depends upon this multifactor model.

Iroaia et al. (2012) noted that the investors are concerned only about two factors in stock selection: one is risk, and the other is return. To reduce the risk and increase return, market index is probably used to forecast the impact of various independent variables on equity return by the investors. The basic purpose is to minimize the risk and boost return on investment (Liu, Shi, Wu, & Guo, 2020). The investor, thus, uses various market indicators to reach the higher targeted returns and predict risk and return analysis. Therefore, the aim of the investor is to obtain maximum returns along with security on investment in desired country stock and capital market. This is the only objective of the investor to maximize the profit. Investor's first priority is to maximize the profit margins. Therefore, it is important to find relation in portfolio return and various factors those are beneficial for the investors to boost their returns on equity and judge the portfolio along with risk reduction on the chosen investment. Strong and authentic evidence related to the average change in the returns and average performance in the CAPM model is not considered good. CAPM, sometimes neglect the stock upward and downward movements. There are limited studies that compare and contrast the ultimate performance of the average cost (CAPM) and pricing models in the downturn trend (Fama & French, 1993). Several studies and research on stock market returns have been conducted by various research in the various stock markets in various countries (Aggarwal & Manish, 2020; Chien et al., 2021; Hassan & Kayser, 2019). However, it helps not only the investors but also the companies to determine the main factor that affects the return on investment and the value of corporate shares, respectively.

The latest portfolio theory created by the Markowitz's selection theory had been first explained in 1952 and William Sharp's contribution to the theory of basic asset price pricing was explained in 1964 and became familiar as the Asset Pricing Model Capitalism (CAPM) (Veneeya, 2006). The structure, on which the CAPM is established in the modern portfolio theory, is very important to understand. The prediction model that estimates the excessive yield or return to risk free rate is presented by Sharp (1964) model (Ward & Muller, 2012). It predicts for a featured portfolio which can be based on the returned to a relation of risk-free rate and beta in the underlying portfolio of market. The investor always expects to have compensation for the additional or excessive risks. CAPM explains that no portfolio can show a mix of risk-free assets and a current business market portfolio is based on the risk rate. The two most vital components in CAPM are return and ultimate risk. These can be estimated by using beta that is bounded or linked with variance like square root and standard deviation of the proceeds as an indicator of volatility. The most important point in this model is the division of risk into two elements: the risk of diversifiable (non-systematic) and the risk of non-diversifiable (methodological). The CAPM system makes a number of simple (and critical) assumptions for action (He, O'Connor, & Thijssen, 2018).

Two assumptions were open to criticism: 1) Portfolio revenues are distributed symmetrically around the average. 2) It is assumed that portfolio revenues have no external

values (or "fat tails").One is called the semi variant CAPM variant called D-CAPM (Downside CAPM). The normal old trial version is changed by a beta-negative (βD) experiment. Various researchers have provided changed technical definitions for βD. Javier and Estrada: βD = Negative variance between the change in asset portfolio and market / negative variance of the market portfolio. The main point is that the empirical studies depict that D-CAPM provides much better predictions than CAPM. The emerging markets specially focus on the calculation of CAPM and BD for investors. The assumptions are made on the return on investment from the emerging markets are always less natural and strongly deviant as compared to the markets return rate of developed economies. D-CAPM is highly regarded for its reasonableness, strong evidence and better usage of D-CAPM. For example, research of Mamoghli and Daboussi shows that D-CAMP is from those results which D-CAPM conclude it possible to cover the negativity of the traditional CAPM taking the asymmetrical nature and value of returns and the risk predictions. Hogan and Warren (1974) expanded their work on lower risk techniques by creating a near-expected variance model, or the E-S model. They have developed the ESCAPM model, which replaces the beta version of the trial version based on semi-variance differences and the identification of the common difference.

3. Research Design and methodology

Pakistan Stock Exchange website is used for the collection of desired data required for this research from the 2000 to 2015. Data from annual publications and annual reports of State Bank of Pakistan and Pakistan Stock Exchange has been taken on the study variables of this research. Data of listed companies is obtained through their annual reports from their websites. Other important daily financial information about closing and opening prices of stocks in order to calculate the returns is also taken from PSE website. Data for the independent variables named book value of companies, market equity, total assets, profitability and investment is gathered from the annual audited reports from the PSE data portal and overall listed companies. For momentum portfolios, the stocks are classified as winners and losers is done on the basis of their momentum returns at the end of month. The momentum returns at the end of month t is the 11 month returns from the end of month t-12 to t-1. Past studies were conducted on the selected companies from multiples countries around the world. This research contributes into the past studies in three aspects. Firstly, this study is specifically based on the companies of Pakistan stock exchange. Secondly, the firms are not same in each variable required data for all time period in all years. Thirdly, each year in selected time period from 2000 to 2015 have different number of companies regarding data.

3.1. Population

The companies listed on the Pakistan Stock Exchange either non-financial or financial sector are selected as population for this study. Approximately, 578 companies of financial and nonfinancial sector are registered with the Pakistan Stock Exchange and become population of this study.

3.2. Sample Technique

The study used random sampling technique. All those listed companies whose data is available in Pakistan Stock Exchange are used as sample from 2000 to 2015. Random sampling technique is used on the basis of availability of data of study variables. Pakistan Stock Exchange is an important emerging market which shows specific characteristic of high price volatility and high turnover. Thirty portfolios of company’s return are made for analyzing the results.

3.3. Unit of analysis

Any single company may be taken as a unit of analysis either is financial or non-financial sector, which is listed in Pakistan Stock Exchange from the time period 2000 to 2015.

3.4. Sample Size

Almost 578 firms are listed in Pakistan Stock Exchange. The sample size is depending on availability of variables data of listed firms and it varies from year to year.

3.5. Data Collection method

In this quantitative study, the secondary time series data of all variables from 2000 to 2015 is used for conducting this research. Thirty portfolio of stocks return are made for dependent variable. To calculate the monthly returns, the closing prices are taken from the authorized website of PSE. To validate result, we use monthly return as used by earlier studies of Salazar and Lambert (2010) and Fama& French, 1992. To calculate the market and book value of firm, total assets of the firm, earning per share the audited annual report of firms, Pakistan Stock Exchange annual reports of firms and Pakistan Stock Exchange data portal are used. To calculate the monthly returns of stocks, the following formula is used.

$$Rjt = In (Pjt/ Pjt-1) \ldots\ldots\ldots (1)$$

Where Rjt is the return of stock j at the month t. Pjt is the closing price index of the stock j at month t. Pjt-1 is the closing price index of the stock j at month t-1. PSE-100 index is used as proxy to calculate the monthly return. By using above equation, market return is calculated. 12 months treasury bills rate as a proxy for risk free return used which has taken from the websites of State Bank of Pakistan.

3.6. Model of the Study

In this study, multiple regression model uses following equation.

$$Rp = ai + \beta_1 D (RM - RF) + \beta 2\ SMB + \beta 3\ HML + \beta 4 RMW + \beta 5 CMA + \beta 6\ WML + eit \ldots\ldots..(2)$$

The equation:

- $\beta 1D, \beta 2, \beta 3, \beta 4, \beta 5, \beta 6$ is the coefficient for size (SMB), downside risk (DR), momentum (WML), profitability (RMW), value (HML) and investment (CMA).
- Rp is the return of portfolio

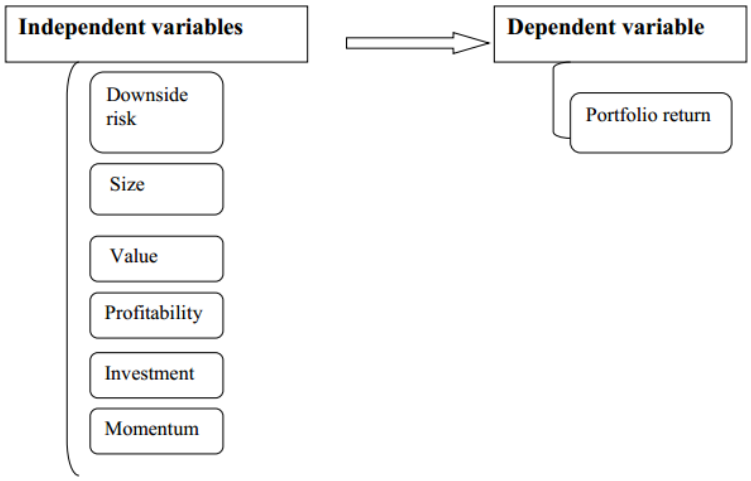
RF is the risk-free return

- RM is the market return
- SMB is the return on a diversified portfolio of small stocks minus the return on a diversified portfolio of big stocks,
- HML is the difference between the returns on diversified portfolios of high and low B/M stocks,
- RMW is the difference between the returns on diversified portfolios of stocks with robust and weak profitability.
- CMA is the difference between the returns on diversified portfolios of the stocks of low and high investment firms, which we call conservative and aggressive.
- WML is the difference between the simple avg. returns of winner portfolios and simple avg. returns of loser portfolio.
- eit is a zero-mean residual

3.7. Fama MacBeth Regression Analysis

For the purpose of describing the impact and the positive and negative relation by means of an equation which could have a predictive value, multiple regression analysis is used (FamaMacBath, 1973). Multiple regression method is used to define the overall effect of multifactor asset pricing model on stock return portfolio.

Figure 3.1 Conceptual Framework



3.8. Hypothesis of the Study

According to the above mention theoretical framework in this study following hypothesis are formulated:-

- H1: There is significant impact of downside risk on portfolio returns.
- H2: There is significant impact of size on portfolio returns.
- H3: There is significant impact of value on portfolio returns.
- H4: There is significant impact of momentum on portfolio returns.
- H5: There is significant impact of profitability on portfolio returns.
- H6: There is significant impact of investment on portfolio returns.

4. Results and Discussion

4.1. First part regression

Table 1
Fama Macbeth First Part Regression Results for 2000-2003

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.019892	0.004639	4.288025	0.0003
βdrm	-0.004344	0.002696	-1.610853	0.1209
βsmb	-0.006406	0.002803	-2.285494	0.0318
βhml	-0.004518	0.003074	-1.469669	0.1552
βwml	0.000880	0.002199	0.400057	0.6928
βrml	-0.002390	0.002783	-0.858729	0.3994
βcma	-0.001886	0.004532	-0.416113	0.6812
R-squared	0.847950			
Adjusted R-squared	0.808285			
F-statistic	21.37771			
Prob(F-statistic)	0.000000			

4.2. Interpretation

In the first table of 2000-2003 the first factor DRM having coefficient value -0.004344 has negative impact on portfolio stocks returns. The impact is negative and insignificant with t-statistic -1.61 at 1% level of significance with p-value 0.1209 or 12.9%. The outcomes of 1st indicator support the null hypothesis as compare the research hypothesis. The second indicator SMB having coefficient value -0.006406 shows negative impact on stocks return of portfolio with t-stat value -2.2 significant as per 2% criteria do not support null hypothesis with p-value 0.0318 or 3.18 %.

The 3rd factor HML (High minus Low) having value of coefficient -0.004518 also have negative impact on stocks returns. Its t-stat value -1.469669 supports negative results with

the p-value of 0.1552 0r 15% supports null hypothesis and rejected research hypothesis. The 4th key factor WML supports positive impact having coefficient value 0.000880. This shows that WML impact on portfolio stocks return is positive. The factor WML has 0.02 its t-stat value which is less than 1% significance level having p-value 0.6. The 5th indicator RMW shows negative impact having value -0.002390 with the value of t-stat -0.00858 shows insignificant impact according to specific criteria. The p-value 0.3994 0r 39% demonstrate null hypothesis as compare to research hypothesis. The 6th CMA factor having value of coefficient is -0.001886 negative impact on stocks portfolio returns. T-stat value -0.41663 also shows insignificant and negative impact in results. Its p-value 0.6812 or 68% support null hypothesis.

The R-square of this model shows total variation is 84% which shows collectively change by DRM,SMB,HML,WML,RMW and CMA. The adjusted value of R2 is 80% and F-stat is 21% with the probability level of 0.00000 which is significant at 1% level. It shows the fact that Model is good fit.

Table 2
Fama Macbeth First Part Regression Results for 2004-2007

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.034029	0.002760	12.33055	0.0000
βdrm	-0.015624	0.001382	-11.30637	0.0000
βsmb	-0.002608	0.001539	-1.695397	0.1035
βhml	-0.008229	0.004298	-1.914802	0.0680
βwml	0.005258	0.002767	1.900561	0.0700
βrmw	-0.003499	0.002943	-1.188792	0.2467
βcma	-0.001063	0.001697	-0.626303	0.5373
R-squared	0.914971			
Adjusted R-squared	0.892790			
F-statistic	41.24938			
Prob(F-statistic)	0.000000			

4.3. Interpretation

The results of period 2004-2007 present in table 2. The value of DRM coefficient show negative change by -0.015624 values. The factor DRM having -11.30637 t-stat and 0.0000 p-value which is strongly significant at maximum level of significance means not in the favor of null hypothesis. The 2nd factor SMB having value of -0.002608 shows negative impact on portfolio stocks returns. This impact is negative and insignificant at 1% level of significance with the value of t-statis -.1.695397 with a p-value of 0.1035 or 10%. The 3rd key factor HML having value of coefficient -0.008229 gives negative impact on portfolio stocks returns. The negative tstat value -1.914802 and p-value which is 0.0680 shows the factor is insignificant and support null hypothesis at 1% level of significance. The results of 4th factor WML having value of coefficient 0.005258 gives the positive impact on portfolio stocks returns. The t-stat is 1.900561 and p-value is 0.0700 0r 7% is insignificant at 1 and 5% level of significance. The outcomes of 5th factor RMW having coefficient value -0.003499 which is negative. The tstat value is -1.188792 and p-value is 0.2467 0r 24% is demonstrating fact for null hypothesis ass compare to research hypothesis. The 6th factor CMA having coefficient value -0.001063 also gives negative insignificant impact on portfolio return with the t-stat value of -0.626303 and pvalue 0.5373 supports the null hypothesis. The R2 explain total variation in variables by 91%. The adjusted R2 is 89% after consideration of sample size. The value of F-stat is 41.24 with the p-value of 0.000000, means significant at 1% level. It shows the fact that model is good fit.

Table 3
Fama Macbeth First Part Regression Results for 2008-2011

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.020332	0.013158	-1.545277	0.1359
βdrm	-0.000314	0.003995	-0.078674	0.9380
βsmb	-0.003582	0.006315	-0.567262	0.5760
βhml	-0.004843	0.001263	-3.833387	0.0009
βwml	-0.002053	0.004283	-0.479311	0.6362
βrmw	-0.006463	0.002920	-2.213329	0.0371

βcma	0.003494	0.006288	0.555561	0.5839
R-squared	0.674277			
Adjusted R-squared	0.589306			
F-statistic	7.935356			
Prob(F-statistic)	0.000104			

4.4. Interpretation

The value of coefficient for the 1st key factor DRM is -0.000314 which is negative for portfolio stocks returns for period 2008-2012. The t-state value is -0.078674 and p-value is 0.9380 is insignificant and this finding is rejected as it is not as per the stated arguments. The 2nd factor SMB having value of coefficient -0.003582 shows negative impact during stated year with the t-stat value which is -0.567262 and p-value 0.5760 is insignificant at maximum level of significance. The 3rd key factor HML also have negative coefficient value is -0.004843 with the t-stat value -3.833387. The p-value 0.0009 is significant at 1% level of significance support research hypothesis and rejected null hypothesis. The 4th factor which is WML having value of coefficient -0.002053 which is also negative. The impact of WML is insignificant with the t-stat value -0.479311 and p-value 0.6362 which is lower than as per stated criteria. The 5th factor RMW impact on portfolio stocks returns is negative with the coefficient value -0.006463. The impact is significant with the t-stat value which is -2.213329 and p-value 0.0371 which is greater than significance level of 1% thus support research hypothesis. The last 6th factor CMA having positive impact with coefficient value of 0.003494. The t-state value is 0.555561 and p-value is 0.5839 gives insignificant impact and support null hypothesis. The R2 of this model is 67% explain total variation in variables. The adjusted R2 58% after the consideration of sample size. The value of F-stat is 7.9 with the p-value 0.000104 which is significant at 1% level shows model is good fit.

Table 4
Fama Macbeth First Part Regression Results for 2012-2014

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015892	0.004246	3.742649	0.0011
βdrm	-0.002512	0.003613	-0.695195	0.4939
βsmb	0.005715	0.000915	6.242883	0.0000
βhml	-0.005045	0.000502	-10.04614	0.0000
βwml	-0.004468	0.002973	-1.502924	0.1465
βrmw	-0.005787	0.001868	-3.098052	0.0051
βcma	0.005157	0.000546	9.446711	0.0000
R-squared	0.890718			
Adjusted R-squared	0.862209			
F-statistic	31.24403			
Prob(F-statistic)	0.000000			

4.5. Interpretation

The 1st factor DRM having coefficient value -0.002512 which is negative for the period 2012-2014. The t-stat value -0.695195 and p-value 0.4939 gives insignificant result and support the null hypothesis. The 2nd key factor SMB having coefficient value 0.005715 which gives positive impact on portfolio stocks returns for the stated period. The t-stat value is 6.242883 and p-value 0.0000 which is significant at 1% means that there is no impact of SMB on portfolio stocks return with the level of confidence of 99%. The 3rd key factor HML having value of coefficient is -0.005045 which gives negative impact.

The t-stat value of HML is -10.04614 and p-value is 0.0000 gives significant at 1% level of significance. The 4th factor WML having coefficient value -0.004468 which is also give negative impact. The t-stat value of WML is -1.502925 and p-value 0.1465 which is insignificant at maximum level of significance at 1%. He 5th factor RMW having coefficient value -0.005787 gives negative impact. Their t-stat value is -3.098052 and p-value 0.0051 or 0.51% is significant at 1% level of significance. The last 6th factor CMA having 0.005157 coefficient value which is positive. The impact is positive and significant with t-stat value 9.446711 and p-value of 0.0000 significant at 1% level of significant. The R2 89% explained

total variation in variables. The adjusted R2 86% after consideration of sample size. The value of F-stat is 31.24 with the p-value of 0.000000, means that is significant at 1% level. It shows the fact that model is good fit.

4.6. Second part regression

In second pass regression we run the cross-sectional regression analysis with Beta values which obtained from first pass regression after performing time series analysis of independent variables with the portfolio returns. This analysis gives us value of lambdas of these independent factors and t-values. The key assumption behind the acceptance of null hypothesis is that values of lambdas for DRM,SMB,HML,RMW,WML and CMA has insignificant outcomes at 01% level of significance.

Table 5
Fama Macbeth Second Part Regression Results

	INTERCEPT	λdrm	λ smb	λ hml	λwml	λrmw	λcma
2000-2003	0.019892	-0.004344	-0.006406	-0.004518	0.000880	-0.002390	-0.001886
2.038424	-0.398144	-1.281312	-0.772593	0.120510	-0.45478	-0.350320	
2004-2007	0.034029	-0.015624	-0.002608	-0.008229	0.005258	-0.003499	-0.001063
5.178917	-2.093616	-0.833353	-1.29364	0.280998	-0.830027	-0.266894	
2008-2011	-0.020332	-0.000314	-0.003582	-0.004843	-0.002053	-0.006463	0.003494
-2.078318	-0.037528	-0.549628	-1.215215	-0.191902	-1.109990	0.486604	
2012-2014	0.015892	-0.002512	0.005715	-0.005045	-0.004468	-0.005787	0.005157
1.416664	-0.262542	1.389031	-1.839999	-0.617248	-1.513945	1.615612	

4.7. Interpretation

In the first pool of 2000-2003 the values of t-stat for DRM, SMB, HML, WML, RMW and CMA is insignificant as per selected criteria at 01% level of significance. First pool strongly accepting the null hypothesis which means there is an impact of multifactor on stock portfolio returns or the impact may be positive or negative. The lambdas value in first generated pool shows the either there is positive or negative impact of these factors on portfolio returns. The factor DRM (-0.004344), SMB (-0.00646), HML (-0.004518), RML (-0.002390) and CMA (-0.001886) have negative impact on portfolio returns. The factor WML (0.000880) has positive value which shows that this factor has positive impact on portfolio return.
In the second generated pool of 2004 to 2007 the t-stat value of factors DRM, SMB, HML, WML, RMW and CMA insignificant at sorted criteria at 01% level of significance. They also support the null hypothesis and rejected the research and alternative hypothesis. Null hypothesis supported the impact on portfolio return. The values of lambdas shows the negative impact of DRM (-0.015624), SMB (-0.002608), HML (-0.008229), RMW (-0.003499) and CMA (0.001063) on portfolio returns and the lambdas value of WML (0.005258) has the positive impact on portfolio return.

The third pool from 2008 to 2012 also supports the null hypothesis according to t-stat value of all factors which have impact on portfolio returns. The t-stat values of all factors are insignificant as per selected criteria at 01% level of significance. The lambdas value of factors show the positive or negative impact on portfolio return. The lambdas value of DRM (-0.000314), SMB (- 0.003582), HML (-0.004843), WML (-0.002053) and RML (-0.006463) have positive impact on portfolio returns. The portfolio return in the third pool is positively impacted by the CMA with the value of lambda (0.003494). In the last pool 2012 to 2014 the t-stat values also in the favor of null hypothesis and rejected the alternative hypothesis all t-stat value are insignificant at the level of 01% significance. Null hypothesis support impact on portfolio return so all factors has impact on portfolio returns. The factors impact is negative on portfolio return by negative value of lambdas i.e. DRM (0.002512), HML (-0.005045), WML (-0.004468) and RMW (-0.005758). The factor SMB (0.005715) and factor CMA (0.005157) has positive impact on the portfolio returns.

5. Conclusion And Discussion

Emerging markets are different from developing markets in term of their nature and inherent characteristic. Emerging markets are more volatile than develop markets. Therefore it is understandable that the explanatory power of independent variables is relatively high in

explaining the portfolio return in the develop countries however, it is not in Pakistan. Investors are more conscious about their losses regarding investment. In order to minimize their risk and maximize their profit on investment, investors used different market indicators. Thus, ultimate and utmost objective of investor is return. Investors always try and find the way to maximize their return on investment. Thus, research helps the investor to allocate their downside risk linked with their investment returns. This multifactor asset pricing model provides a platform to investor to reduce their risk which associated with losses and maximize their returns under the downside risk estimation that either the multifactor impact their stock returns or either impact is negative or negative on stock returns. This research is useful for business organizations to reach their place of residence.

This research provides a better allocation of resources, improving business security, improving business alignment and changing the concentration from cost towards investment. The concentration of business organization is increased before choosing a project for investment or when it stops investing in the project. It also helpful for both investors the financial and non- financial sector prior to making their investment decisions. It give a positive signal to investors that investor should invest in that stock because the risk on their stock return estimated and calculated. An investor considered two factors in the selection of stocks that is risk and return. In order to minimize risk and maximize return, investor use market indicators (Alroaia et al., 2012). The problem is exploring the impact of multifactor asset pricing model on stock return in Pakistan Stock Market. If there is any association then how this relationship is beneficial for the investors, corporate managers, researchers and business organization.

6. Limitation of Study

There are several limitations found during this study. One of the basic limitations is availability of data. The number of firms for required data is not same for all years. The firms vary year to year because the required data of variables are not available for all years. So the firms which have missing the required data of variables are eliminated. In order to get more accurate results in future researcher must access to other sources for variables data. The results are more accurate when the numbers of firms are same for the whole time period in each year. Other limitation may be considered that the model can be modified in future depending on the economic circumstances prevailing in the country and its future market conditions.

7. Recommendations

According to my best of knowledge based on the analysis made, following recommendations are proposed to the investors, corporate managers, researchers and business finance graduate.

7.1. Recommendation for investor

For investors, the subsequent recommendations are extracted from this study:

1. Before making investment decision in a business, the investor must examine the risks associated with the losses in the form of a downside risk that not only brings profit upon return.

2. If investor is uneducated investor then he/she should called upon researcher to investigate either it is better to invest in the company or not before they jump to invest in the company.

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