INFLUENCE OF MARKET RETURN ON THE PORTFOLIO RETURNS OF COMPANIES IN THE MIMS AT NSE

EMMANUEL SHIKUKU OTWEYO AND PROF. SILAS ONYANGO

INFLUENCE OF MARKET RETURN ON THE PORTFOLIO RETURNS OF COMPANIES IN THE MIMS AT NSE

* [1]Emmanuel Shikuku Otweyo

Post graduate student, KCA, Kenya

Corresponding email address: shikukuemmanuel@yahoo.com

[2] Prof. Silas Onyango

Lecturer, KCA, Kenya

Abstract

Purpose: The purpose of this study was to determine the influence of market return on the Portfolio returns of companies in the MIMS at NSE

Methodology: The study adopted descriptive survey. The study population study was composed of the forty seven firms within Main Investment Market Segment (MIMS), which form the four sectors of Nairobi Securities Exchange (NSE). A census was carried out and so the research covered 45 companies, listed in the MIMS of NSE for the period 1st January 2009 to 31st December 2013. The study used the panel data analysis where pooled OLS model was used and diagnostic tests carried out. Since the tests failed to meet the assumptions of OLS, the fixed and random effects models were used.

Results: The study findings revealed that portfolio return and market return were positively (r= 0.565) and significantly (p-value<0.000) correlated and further the random effects panel regression results indicated a positive (β=3.38) and significantly (p-value<0.05) related to market return and portfolio return.

Policy recommendation: The study recommended that the investors who would want to maximize the returns from their portfolios should invest when the market return is favorable. This would ensure that they derive maximum returns from their investments

.

Keywords: *Market return, Portfolio Returns, companies in the MIMS*

1.1 Introduction

The risk-return relationship is a fundamental tenet of finance. According to the risk return theory high level of risk results into greater expected return. Logically an individual would demand a greater return for bearing higher level of risk, as explained by Markowitz (1952) as well as Fama and French (2001), investor decision is determined by the risk and return of a particular asset. The question that arisesis whether the risk-return relationship can be a guide to the investment options that an investor or the industry gets into. CAPM uses proportional market risk to explain pricing and asset return. However the model did not explain well the observed market returns, of companies trading at stock market, this is because the model uses one factor to estimate the assets return.

Investment in stocks is risky as stock prices are affectedby changes in domestic and world economy. The growth of stock is equally susceptible to a number of risks (Harvey et al, 2005). The risks include changes and returns for different stocks because of changes in interest rates, inflation rates, political factors, environmental factors and economic policies.

As stocks growth is determined by the overall market movement which leads to changes in the firm's stock prices. The sensitivity of a stock to market movements is measured by Beta (β) thus a stock with Beta that is equal to one moves with the market, while a stock with a Beta that is higher than one has higher volatility than the market. A stock of a beta of less than one has a lower volatility than the market. Betas are important to investors as they enable them to establish the market risk of a stock (Sharpe, 1964).

Studies of return on investment are based on Markowitz Model of finance, which enable an investor to form a portfolio in the beginning of the period (Markowitz, 1952). Investors maximize the expected returns from the portfolios subject to a tolerable degree of risk or minimize risk depending expected return that is acceptable.

The investors attitude towards risk enables him to measure risk by standard deviation therefore the risk and the expected returns change in specific ways as the securities are added to the portfolio. Securities are added to the portfolios depending on how their expected returns co-vary with other securities. Markowitz framework sets the foundation on which Sharpe (1964), Litner (1965) and Mossin (1966) derived the CAPM model.

The concept of risk and return relationship is based on two realities of investments and investment performance. First, investments are susceptible to some degree of risk because an investor stands the risk of losing all his cash when buying stocks, bonds, mutual funds or other investments. Second the more risk an investor assumes the greater the investment returns he may achieve.

As indicated earlier there are different kind of risks but risk return trade off encompasses volatility as the basic measure of risk. Volatility is the degree to which an investment changes in price. Price fluctuations will depend on the category of the asset thus stocks prices change widely from one year to another as compared to swing in bonds prices which tend to be less dramatic (Harvey et al, 2005). Unsystematic risks are likely to affect at most small number of assets, because it can be reduced by diversification, which entails investing in a numerous assets in a portfolio.

Stock market is significantlycrucial in the economic growth of a country. The marketis vital in thegrowth of industry and commerce in the national economy. That is why governments and industries monitor closely the activities of the stock market. The market is important both from the of industry and investors perspective. This is because it offers the ground for

trading in various financial instruments, there is also an opportunity for investment by those who have excess funds and those who lack, dealers in the market also speculate leading to fluctuations in the share prices, hedging and arbitrage opportunities are also present at the market, it also serves as a mechanism of price discovery and information distribution Stock markets are also used toinstigate privatization plans which are important in the development of up-and-coming economies (Lee, 1998).

The NSE came into existence in 1954 as an association of stockbrokers who it registered as a society.At that time trading activities would take place in a hotel over a cup of tea where accountants and lawyers would meet (Muga, 1974), the stock exchange has undergone major changes and transformations and the level of activity has tremendously increased. A lot of interest in the stock exchange was generated in the 1980s when the government embarked on a privatization program targeting state corporations such as Kenya Commercial Bank and Kenya Airways.

In January 1991, the NSE changed its status into a company limited by guarantee. It also changed its trading system from the old "call-over" system to the floor based "Open Outcry" System. The realization of the critical developmental role played by the Nairobi Securities market and the capital markets at large saw the creation of the Capital Markets Authority in 1992, the Capital Markets Act, Cap. 485 (A) of the laws of Kenya was passed which led to the formation of the regulatory body. As a result of this a number of accompanying regulations have since been enacted.

In July 1994, the NSE was relocated to a more organized location at the Nation Centre. In that year, the International Finance Corporation (IFC) Capital Markets Division rated the NSE as the world best performing emerging market having posted a return of 179% in dollar terms. It is reported that the NSE 20-Share Index recorded an all-time high of 5030 Points on 18th February 1994.During the year 2000, the Nairobi Stock Exchange embarked on a major reform of the market dubbed "Market Segmentation and Re-organization". The reform process involved segmenting the market into four independent segments, which are:- The Main Investments Market Segment (MIMS) which has the highest listing financial conditions with respect to net assets and share capital at Kshs. 50 million and Kshs. 100 million respectively; the Alternative Investment Market Segment (AIMS) where listing financial requirements on net assets and share capital are at Kshs. 10 million and Kshs. 20 million respectively (www.nse.co.ke); the Fixed Income Security Market Segment (FISMS) where Treasury Bills & Bonds and Corporate Bonds are traded. The fourth market segment is Futures and Options Market Segment (FOMS) which is not yet operational in Kenya

1.2 Statement of the Problem

Market investors wish to make an optimal investment decision that would guarantee them a desirable level of return commensurate with the magnitude of risk taken. Unfortunately, the profile information is not easy to obtain, and if obtained, the cost of such information could be so high leading to reduction in the level of expected returns or negative returns. Some studies conducted at the NSE concerning risk and return relationship did not explain how the market beta and market returns relate to the portfolio returns at the stock exchange. Akwimbi (2003) found that arbitrage pricing theory as a linear model successfully explains the expected return at the NSE. The scholars ascertained that APT holds true for emerging markets. Kamau (2002) examines the profile relationship of companies quoted on the Main Investment Market Segment (MIMS) and the Alternative Investment Market Segment (AIMS). The study utilized historical market data from the Nairobi Stock Exchange for five

years from January 1996 and December 2000. The research found out that there was no significant difference in terms of return and risk between those companies listed under the Main Investment Market Segment and the Alternative Investment Market Segment. Similar studies by Apuoyo (2010) and Nyaata (2009) however indicate mild contradiction between prediction using APT and CAPM approaches.

Although several scholars have conducted studies on risk and return, very little has been done regarding risk return trade off on portfolio returns in Kenya. As a result there is a restricted appreciation on how the industry risk and return behaves. Similarly, a lot of reforms have taken place since the introduction of Central Depository System and the launch of live trading on the NSE in 2006. As found out by the previous scholars, these changes could have an adverse effect in the risk return calculations. It is also unclear the extent to which risk-return trade-off influences investment returns in the Main Investments Market Segment firms at NSE. This study therefore seeks to establish if market return have an impact on stock investment returns on companies quoted at NSE.

1.3 Research Objective

To determine the influence of influence of market return on the portfolio returns of companies in the MIMS at NSE

2.0 LITERATURE REVIEW

2.1 Theoretical review

2.2.1 Markowitz portfolio theory

Portfolio theory was developed by Harry Markowitz (1952) it is frequently used in financial industry. Asset portfolios are constructed based on maximizing returns with a given level of risk. Portfolio theory provides an avenue to generate the optimal portfolio for the investor. Investors aim at maximizing returns while minimizing risks, this is achieved by diversifying investments. The total risk of a portfolio is different from the risk of the assets of the portfolio aggregated; consequently the portfolio return is the weighted average of the individual asset. Markowitz asserts that investors should select portfolio on the basis of overall risk reward effects and not constructing portfolios based on the individual securities risk rewards characteristics. APT is offered as one way of estimating risk and return in the market, but the most understood model is CAPM.

The CAPM model uses three elements i.e. the anticipated return of a security, risk-free rate and Beta which is the risk factor to measure the possible return in comparison with the risk the asset presents. CAPM has been widely used by analysts to determine whether risk is or is not worth the expected return.

2.2.1 Markowitz portfolio theory

Portfolio theory was developed by Harry Markowitz (1952), it is frequently used in financial industry. Asset portfolios are constructed based on maximizing returns with a given level of risk. Portfolio theory provides an avenue to generate the optimal portfolio for the investor. Investors aim at maximizing returns while minimizing risks, this is achieved by diversifying investments. The total risk of a portfolio is different from the risk of the assets of the portfolio

aggregated; consequently the portfolio return is the weighted average of the individual asset. Markowitz asserts that investors should select portfolio on the basis of overall risk reward effects and not constructing portfolios based on the individual securities risk rewards characteristics. APT is offered as one way of estimating risk and return in the market, but the most understood model is CAPM.

The CAPM model uses three elements i.e. the anticipated return of a security, risk-free rate and Beta which is the risk factor to measure the possible return in comparison with the risk the asset presents. CAPM has been widely used by analysts to determine whether risk is or is not worth the expected return.

2.2.2 The Arbitrage pricing theory (APT)

The Arbitrage Pricing Theory measures the prices that an asset should have on the market by use of either macro-economic factors or fundamental factors. These factors are weighted by beta coefficient sensitivities commonly known as factor loading.The model was developed by Stephen Ross in (1976).The model identifies the so called "mispriced assets." These securities (assets) have values which are higher than what is reflected in the market; therefore they present a capital appreciation opportunity. The stocks are likely to outperform the market as a whole at any time hence referred to as value stocks.In finance arbitrage means taking advantage of one or more market imbalances to reduce the risk of a financial transaction.

2.2.3 Capital asset pricing model (CAPM)

By the mid-1950s, it was clear that there existed risk and return relationship for the stocks trading in the market. However, there was no proper explanation and how risk affects the expected returns (Fama, 2010).In 1959 Markowitz came up with his document on portfolio theory, which was the brainchild of CAPM; this model was further improved by Sharpe in (1964) and Litner (1965).
CAPM is simple and elaborately appealing to the users that it laid the foundation of asset pricing theory where it was asserted that an investor can reduce risk of portfolio returns by selecting stocks that are inversely related. Under CAPM the following assumptions stand (i) investors prefer less risk and more returns. (ii) The borrowing and lending rates are both equal (iii) there are no transaction cost and or taxes (iv) the expected returns and risk are the only two variables that need to be considered in an investment decision. CAPM states that unsystematic risk can be reduced by diversifying ones portfolio. The CAPM formula can be set out as:
$E(r)$ = Risk-free rate %+(β x Market Risk Premium%)
Where market risk premium is $E(R_m) - R_f$

The risk-free rate is the rate obtained on Government treasury bills, while the market risk premium (MRP) is the premium over the risk free rate on the market. Beta, is a factor which indicates how specific stock price changes in relation to the market in which it trades. CAPM theory states that volatility is the only risk that investors need to be compensated for. The other risks which are unsystematic can be addressed by diversifying the portfolio.
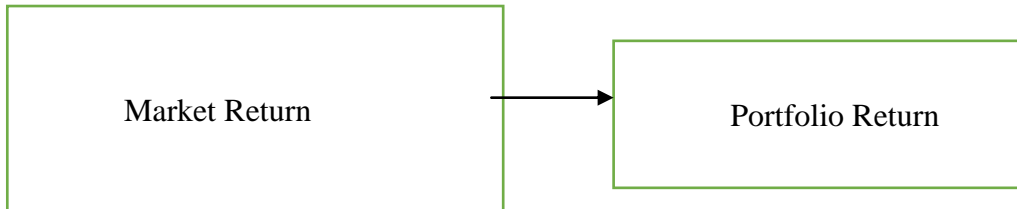
2.2 Conceptual Framework

Figure1: **Conceptual Framework**

2.3 Empirical Review

Oludoyi,(2003) examined the risk characteristics of the firms quoted on Nigerian stock market. He concluded that the covariance of the firms' with market portfolio is positive and thatthe returns on the firms' stocks tend to move in the same direction with return on the market portfolio. This implies that majority of firms in a portfolio with a positive beta haverestricted scope for portfolio diversification. A study by Gitari (1990) found out that it was apparent that Kenyan Publicly quoted companies' exhibit systematic risk that is positively related to return. This relationship was not statistically significant thereby suggesting that investors may either be under or over-compensated for taking high risks. This suggested the need of low risk analysis on the part of investor, rather than being mere risk takers. The results also indicated a negative but statistically insignificant association between unsystematic risk and return. He also found that the nature of risk-return relationship was independent of the nature of the industry in which a company operates reinforcing the conclusion on the relationship between unsystematic risk and returns.

Another study by Muli (1991) on the estimation of the systematic return-risk for the Nairobi Stock Exchange indicated a market risk of four percent and a return of approximately six percent. With one-year Government of Kenya Treasury bonds having a coupon rate of fifteen percent (July 1991), the full market return was twenty one percent which was consistent with the general market interest rates in the commercial sector. The market risk and risk premium calculated appeared to be good estimates of the total market parameters. Further, the market risk and return were therefore approximately 4% and 5.7% respectively. However, this" study was done eight years ago when the market was at a very low stage of development. One of the limitations was that lack of a trading floor might have affected the diversification effectiveness of the market by inhibiting activity level (Muli, 1991). There were also six stockbrokers in the market, less than the current twenty and more securities have been listed since then, opening up more avenues for investment diversification.

Musyoki (2011) examined the predictability of accounting earnings using changes in share prices of companies listed at Nairobi Securities Exchange in finance and investment centre. The study covered the period between the year 2001 and 2005. The data was obtained from the Nairobi Stock Exchange, where the information selected were earnings per share, dividend yield, price to earnings ratio and the share price. This information was standardized using logarithm and analyzed using SPSS program. The OLS was used to come up with an

equation. Eleven companies were analyzed and all of them had a positive change towards the accounting earnings in relation to share price. Additionally the relationship between the accounting variables and the Nairobi Stock Exchange information indicated mixed results, with some companies showing a strong positive correlation and others weak correlation

Asiemwa (1992) did an empirical study to identify the relationship between investment ratios and share performance of companies quoted on the NSE. She did multiple regression analysis to establish the relationship between investment ratios and share price and concluded that earnings per share, dividend per share, price earnings and dividend yield have a significant effect on share prices. She concluded that a significant association between share prices and investment ratios exist.

3.0 METHODOLOGY

The study adopted descriptive survey. The study population study was composed of the forty seven firms within Main Investment Market Segment (MIMS), which form the four sectors of Nairobi Securities Exchange (NSE). A census was carried out and so the research covered 45 companies, listed in the MIMS of NSE for the period 1st January 2009 to 31st December 2013.The study used the panel data analysis where pooled OLS model was used and diagnostic tests carried out. Since the tests failed to meet the assumptions of OLS, the fixed and random effects models were used.

4.0 RESULTS FINDINGS

4.1 Descriptive Results

TABLE 1Descriptive Statistics

|	Portfolio Return	Market Return
Mean	3.915126	2.582915
Std. Deviation	16.3828166	13.3745429
Minimum	-28.3908	-31.2163
Maximum	88.4252	25.4197

4.2 Trend Analysis

This section presents the trend analysis of Portfolio Return and Market Return
4.2.1 Annual Trends for Portfolio Return

Figure 2 indicates that Portfolio Return gradually increased from 2009 to 2010. In the subsequent year i.e. from 2010 to 2011 the Portfolio Return drastically dropped. This drastic decline in the portfolio returns was mainly attributable to the economic turbulences and downturns experienced in the economy and thus this negatively impacted on the performance of the stock market as well. With the recovery in the economy the portfolio returns increase in 2011 to 2012 and as well as from 2012 to 2013 but there was a slight decline in the portfolio return compared to the previous period 2011 to 2013 and this was attributable to the political environment in the country.

FIGURE 2:Annual Trends of Portfolio Returns 2009 - 2013
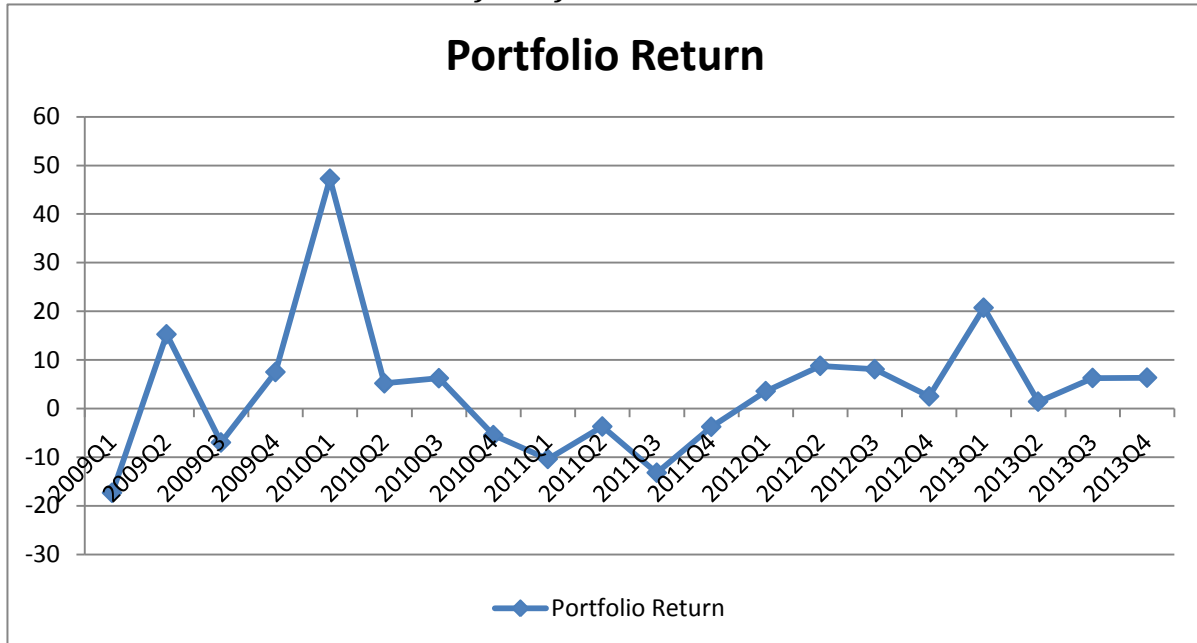
4.2.2 Annual Trends for Market Return

Figure 3 indicates that Market Return gradually increased from 2009 to 2010. The results further indicated that in the subsequent year i.e. from 2010 to 2011, the Market Return significantly dropped. This drastic decline in the Market Return was mainly due to the low performance within the economy and thus this trickled down to the stock markets and thus negatively impacting on the market return. Following the recovery of the economy the Market return then rose in 2012 and a slight decline in 2013 and this decline was mainly attributable to the state of affairs in the country which had just concluded its elections and thus at this time the investor confidences were negatively impacted for fear of the repeat of a state of political instability in the country.

FIGURE 3

Annual Trends of Market Returns 2009 - 2013

4.3 Estimation Results

This section presents the pre-estimation and post estimation results, namely the correlation matrix, the test for normality, Heteroscedasticity and autocorrelation.

4.3.1 Correlation Matrix

The table 2 below presents the correlation matrix between the predictor and predicted variables. The table indicates that the correlation coefficient between PortfolioReturn and MarketReturn is positive (r= 0.565) and significant (p-value<0.000) at 5%, and this therefore implies that an increase (or decrease) MarketReturn would be accompanied by an increase (or decrease) PortfolioReturn.

5.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The study findings that the portfolio return and market return are positive (r= 0.565) and significantly (p-value<0.000) correlated and thus an increase in market return would lead to an increase in the portfolio return as well. Further the regression results indicates a positive (β=3.38) and significant (p-value<0.05) relationship between Market return and Portfolio return. Specifically, this implies that a unit increase in market return would lead to a 3.38 unit increase in portfolio return. This finding is consistent with that of Oludoyi(2003) who examined the risk characteristics of the Nigerian quoted firms also found that a positive relationship exists between portfolio returns and market return. He further asserts that marketreturns tend to move in the same direction with return on the portfolio.

Secondly, the study findings indicate a positive (r= 0.417) and significant correlation (p-value<0.000) between portfolio return and market beta. This indicates that an increase in market beta (Risk) would also lead to an increase in portfolio returns. The regression results further indicates that the market beta and portfolio return are positive (β=25.93) and significant. This also indicates that the more risky a portfolio is the more the returns it receives. This finding is in contradiction with that of Battilossi & Houpt (2006) who examined risk, return and volume in an emerging stock market, using Bilbao Stock Exchange, and found an insignificant risk-return relationship. However it is consistent with the findings of Menggen who examined the dynamic risk-relationship and found a positive and statistically significant risk-return relationship for returns in Shenghen Stock Exchange.

The third objective of the study was to establish the joint effect of market return and market beta on portfolio returns. The study findings indicate a negative and significant relationship between the interaction between market beta and market return on the portfolio returns. This implies that the increase in market return and market beta jointly would result to a decrease in the portfolio returns.

The findings also indicate that the model was significant in explaining the observed variations as indicated by an F-Statistic probability of less than 5%. The results further indicates that 52.21 percent of the variations in portfolio returns were jointly explained by the variations in the market beta, market return and by the interaction between the market beta and market return.

5.2 Conclusion

From the above findings this study concludes that the portfolio return is positive and significantly related to market returns.

5.3 Recommendations of the Study

The study recommends that investors who would want to maximize the returns from their portfolios should invest when the market return is favorable. This would ensure that they derive maximum returns from their investments.

5.4 Areas for Further Research

The study recommends that further studies on determining the optimal portfolio size be carried out as this would enable investors be better placed in making sound investment decisions. Further studies should be conducted for periods longer than the five years.

REFERENCES

Akwimbi, W.A (2003). Application of the APT in predicting Stock Returns at the Nairobi Stock Exchange, Unpublished MBA Project, University of Nairobi.

Apuoyo, B. (2010). *Relationship between Working Capital Management Policies and Profitability for Companies Quoted at the NSE*. Unpublished MBA Project, University of Nairobi

Black, F. (1972). Capital Market Equilibrium and Restricted Borrowing, *Journal of Business* 48(3).

Bowman, E. EL.(1980). A Risk/Return Paradox for Strategic Management.*SloanManagemnt Review*. 25(1.

Busher, S.A., &Sadorsky, P. (2006). Oil price risk and emerging stock markets. *Global Finance Journal*. 17, 224-251

Campbell, J.Y., Lo, A., &MacKinlay, A. C. (1997). "The econometrics of financial markets." Princeton NJ Princeton University Press.

Cohen, R. D. (2002). The relationship between the equity risk premium, duration and dividend yield. *Wilmott magazine*, *6*, 84-97

Elton, E. J., Gruber, M. J., Brown, S. J., &Goetzmann, W. N. (2009). *Modern portfolio theory and investment analysis*. John Wiley & Sons.

Fama, E. F., French, K. R., 2010. Luck versus skill in the cross-section of mutual fund returns. *Journal of Finance 65, 1915-1947.*

Fama, E. F., Macbeth D., (1973). Risk, Return and equilibrium: Empirical Tests, *Journal of political Economy* 81(3).

Fama, E.F. and French, K.R. (2001) changing firms characteristics or low propensity to pay? *Journal of finance and economics, 60(1) 3- 43*

-

Gitari, A., (1990). *An Empirical Investigation into the Risk-Return Relationship Among Kenyan Publicly Quoted Companies.* MBA Project, University of Nairobi.

Gorieaev, A (2004), Risk Factors in the Russian Stock Market. *Emerging Market Review, 2(1); 67-89*

Harvey, C.R., Geert B., and Lundland, C. T. (2005). Liquidity and Expected Returns: Lessons from Emerging Markets. AFA 2004 San Diego Meetings; EFA 2003 *Annual Conference.*

Menggen, C. (2007), The Risk-Return tradeoff in Emerging Market. Evidence from China. A Seminar Paper Presented at ARRC Audition, A/RC/014. Hosted by Department of Economic and Related Studies (DERS).

Mossin, J. (1966). Equilbrim in a Capital Asset Market. *Econometrica,41*, 867-887.

Muga D. N. (1974). The Nairobi stock exchange; its history, organization and role in the in the Kenyan economy. *Unpublished MBA Dissertation University of Nairobi*.

Ribeiro et al. 2006, Fan et al. 2007, Lima et al. 2008). Initially named AgaricusblazeiMurrill (Heinemann 1993).

Robicheck, A. A. (1969). Risks and the Value of Securities, *Journal of Financial and Quantitative Analysis.*

Ross, S. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory 13*, 341−360.

Sarin, S. (2010). Market Segmentation and Targeting. *Wiley International Encyclopedia of Marketing*.

Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium. *Journal of Finance*, 19, 425-442

Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium. *Journal of Finance*, 19, 425-442.

Sharpe, W.F. (1965).Risk Aversion in the Stock market, *Journal of Finance*

Shiller, R. J. (1995). Aggregate income risks and hedging mechanisms. *The Quarterly Review of Economics and Finance*, *35*(2), 119-152.

Shiller, R. J. (1995). Aggregate income risks and hedging mechanisms. *The Quarterly Review of Economics and Finance*, *35*(2), 119-152.

Tofallis, C. (2008). Investment volatility: A critique of standard beta estimation and a simple way forward. *European Journal of Operational Research*, *187*(3), 1358-1367.

Tofallis, C. (2008). Investment volatility: A critique of standard beta estimation and a simple way forward. *European Journal of Operational Research*, *187*(3), 1358-1367.

Tunali, Halil. (2010). The Analysis of Relationships between Macroeconomic Factors and Stock Returns: Evidence from Turkey Using VAR Model. *International Research Journal of Finance and Economics 57*.