

The Impact of Financial Portfolio Diversification on Securities Return and Liquidity

An Applied Study in Khartoum stock exchange Market- Sudan

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Abstract

The study aimed to examine the relationship between the diversification in portfolio and its impact on the return, liquidity of investment portfolio as mediator. Research sample consist of investors in Khartoum stock exchange in Khartoum state Sudan. The sample was taken by – random probability sampling. In addition, the sample was taken from the investors who were still own the investment portfolio. This was done to facilitate the distribution of questionnaires and the return and accuracy of answers given by the investors. The analysis technique used in this research is quantitative data analysis technique using Path Analysis modeling using (AMOS v 25). The results revealed the diversification and liquidity have positive impact on return because it different from zero at 0.05 level of significance. And the diversification in portfolio doesn't affect the liquidity at 0.05 level of significance. Also liquidity un mediated the relationship between the diversification and return at 0.05 level of significance. Most of investors invest in different economic sectors & study overall components of investment portfolio. Also previous loss it makes investors more attention, Exchange rate effect on investor's investment decision, beside that Safety in investment is first for investors. The recommendation is Observation of individual portfolio suggest that people do not hold portfolio that are well

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diversified the investor don't care to invest in sectors that have less correlations (assets components of portfolio). The investor simply ignorant about benefit of diversification education may be solution. Secondly the achieved return of portfolio should be near to expect return should have known much about investor's goals and preferences to develop framework that describes how they form portfolio. Thirdly Khartoum stock exchange management should take care of marketing the financial securities. And make it easy to increase the efficiency of market. . The study makes theoretical contributions to body knowledge of portfolio management on economic environment. Practically, the study provides useful knowledge for investors to improve the construction and management of their portfolio.

Keywords: investment portfolio management, diversification, liquidity, return on investment .

المستخلص:

هدفت هذه الدراسة إلى دراسة العلاقة بين التنوع في المحفظة الاستثمارية، وأثرها على العائد، سيولة المحفظة الاستثمارية كمتغير وسيط. حيث تكونت عينة البحث من المستثمرين في سوق الخرطوم للأوراق المالية في ولاية الخرطوم، السودان. تم اختيار العينة العشوائية البسيطة. ولأجل ذلك أعتمد الباحثان أسلوب الاستبيان بغرض جمع البيانات حيث تم اختيار مفردات العينة من المستثمرين الذين لا يزالون يمتلكون محافظ استثمارية وذلك بغرض سهولة توزيع البيانات ودقة الإجابات المقدمة من قبل المستثمرين. تم استخدام التحليل الكمي للبيانات، نمذجة المعادلة البنائية واختبار الفرضيات عن طريق تحليل المسار عبر برنامج (أموس25v) كشفت النتائج أن التنوع في المحفظة الاستثمارية والسيولة تؤثران إيجاباً على العائد لأنها تختلف كثيراً عن الصفر عند مستوى معنوية 0.05، في حين أن كل من التنوع في المحفظة الاستثمارية لا تؤثر

علي السيولة عند مستوي معنوية. 0. 05 كذلك السيولة لا تتوسط العلاقة بين التنوع في إدارة المحفظة الاستثمارية و العائد عند مستوي معنوية 0. 05. كذلك معظم المستثمرين يستثمرون في قطاعات اقتصادية مختلفة ويقومون بدراسة شاملة لمكونات محافظهم الاستثمارية. غيضا الخسارة السابقة تجعل المستثمرين أكثر حذرا، يؤثر سعر الصرف علي القرار الاستثماري بجانب ذلك الأمان في الاستثمار أولا للمستثمرين. تتمثل التوصيات في ملاحظة أن محفظة الفرد المستثمر لا تمتلك تنوع جيد وكذلك المستثمر لا يلقي اهتماما للاستثمار في أصول ذات روابط ضعيفة فيما بينها (الأصول المكونة للمحفظة)، المستثمرين يجهلون المنفعة من التنوع في المحفظة الاستثمارية يتمثل الحل في التعليم. ثانيا لتحقيق عائد في المحفظة قريب من العائد المتوقع يجب أن نعلم أهداف وتفضيلات المستثمرين لتطوير ووصف الإطار عن تشكيلة المحفظة الاستثمارية، ثالثاً علي إدارة سوق الخرطوم للأوراق المالية أن تهتم بسرعة تداول الأوراق المالية وتبسيط الإجراءات لزيادة فاعلية السوق، قدمت الدراسة مساهمة نظرية من خلال نشر الوعي بأهمية المحافظ الاستثمارية على البيئة الاقتصادية في والمساهمة التطبيقية للدراسة تظهر من خلال المعرفة التي تقدمها للمستثمرين لتحسين تكوين وإدارة محافظهم الاستثمارية في بلادنا.

الكلمات المفتاحية: إدارة المحفظة الاستثمارية ، التنويع ، السيولة ، العائد علي الاستثمار .

Introduction

Diversification or in other words every way of diversifying money among several assets is called a portfolio (Fernández and Gómez, 2007). **The Proper diversification does not require investing in large number different industries and securities (Gup, 1985)** One of the first definitions of a well-diversified portfolio is the market portfolio. Based on the Capital Asset Pricing Model, there exists a linear relationship between systematic risk and portfolio return. (Apolln ,2014). Another common way to think about a diversified portfolio is to analyze one that contains a large number of securities. To investigating the relationship between risk and number of stock in portfolio (Elton and gumber, 2003). Diversification should be increase as long as marginal benefits exceeding the marginal cost. (Mier statman,1983). The proper diversification means eliminating all un systematic (unique) variability The recent innovation suggested by (arnott hus and west 2008) in this area is to weight the stocks is an index fund based on fundamental such as earring ,cash flow, dividends rather than market value. (Frank. k. Reilly & Keith c. brown2013). the benefits of diversification lie not in return enhancement, but in risk reduction. 1 Thus, the true benefits of diversification are sensitive to the choice of risk measure. (apallon ,2014). Well diversified portfolio randomly chosen stocks must include at least 30 stocks for borrowing investor and 40 for lending investor (Meir statmen 1987) . The concept of portfolio management has been introduced by Markowitz (1952) , (Milad Jasemi a, Ali M. Kimiagari b, A. Memariani c ,2011). Portfolio theory has been organized to

overcome the challenge of assigning one's wealth among different assets (Deng et al,2005) Portfolio management recognizing the best portfolio of assets is one of the major challenges of financial world (Ballestero et al, 2007) and is called portfolio selection. As a matter of fact, portfolio selection is the process of making a portfolio that maximizes the investor's satisfaction. the majority of professional among mangers cannot beat a buy and hold policy on risk adjusted basis. (Frank. k. Reilly & Keith c. brown, 2013). Portfolio management refers to managing money of an individual under the expert guidance of portfolio managers. In a layman's language, the art of managing an individual's investment is called as portfolio management. . (John L. Maginn, 2010) - the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk vs. performance. Bogdan Bilaus 2010) the investor chooses its portfolio including fit his needs, within the framework of focusing on the best yield when A certain level of risk or risk aversion and reduction at the lowest level. Portfolio management processes have rarely been addressed from the dynamic capabilities perspective. This perspective provides, in our view, important complementary insights into the nature, determinants and differences of portfolio processes. For example, portfolio managementresearch has traditionally focused on finding 'one best process', optimal for all firms and environments (Cooper, 2001) , or on adjustments required in order stimulate more radical innovation (Leifer et al. , 2000). Yet, recent empirical research suggests that many differences in portfolio management practices may be related to the nature of environmental dynamics with which firms are confronted (Florice and Miller, 2003). Definition of the securities portfolio: as a cluster of financial assets or investments are

known As well as that it had "portfolio, which includes all securities and financial assets traded in the market capitalism According to the relative value of each of them to the total market portfolio includes assets used in this portfolio Stock returns calculated risk and return” (Rodriguez,, 2016.) Douglas Hubbard, 2009) is also known as:" they present a selection of one or more of assets .

Returnthe main objective behind all the investment process is Achieve "return" and in the light of this objective is the design plans Future financial (Bnmoussa-2004) the return variance of a portfolio of agroup of securities is lower than the average variance of the individual securities, unless all of the securities are perfectly correlated. This was first examined in detail by Evans and Archer, 1968) who showed the impact on the variance of a portfolio’s return as the number of securities increases. Various assets in the type and quality ". (John L. Maginn,2010) the portfolio securities foundations to manage them are as follows (planning, time, The reservation andprudence, Supervision and follow-up). (bin Amer bin Hacene 2013) concluded that approximately ten stocks will do the good diversification in investment portfolio (evans & archer1968) ,

1. Statement of problem:

The research problem related to the difficulty of managing portfolio in different global economic circumstances faced by the investors in over all the world the impact of factors like (diversification of financial assets, systematic and unsystematic risk , return expected and achieved , Marketability of financial securities , liquidity management). Have direct impact on the portfolio performance. . Also the problem related to know in depth investor behavior in Khartoum stock exchange regarding managing his portfolio . Many investors particularly those of limited means do not hold well diversified portfolio the analysis of return realized by



them confirm that these investors have expected to far greater risk than necessary.

2. Sources of data:

The primary data have been collected by making use of a structured questionnaire.

The secondary data have been collected by books, magazine, reports, and scientific papers .

3. Area of Study

The present study is confined to the investors of Khartoum stock exchange market.

4. Sample Design

By adopting random probability sampling of 60 investors have been selected

5. Framework of Analysis

The collected data have been analyzed by quantitative data analysis technique using Path Analysis modeling using (AMOS v 25).

6. LIMITATION

The present study covered only Khartoum city. Hence utmost care is exercised while generalizing the result .

7. Hypotheses development

7.1 Relationship between a diversification and liquidity

Portfolio management is a component of the dynamic capabilities of firms, defined as the ‘ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments’ (Teece,1997). For (Eisenhardt and Martin,2000) , The benefit of holding a large number of securities was clearly demonstrated in a more recent study, where Sankaranand Patil (1999) created a set of portfolios whereeach portfolio can hold a maximum of Number of stocks. . However, the marginal benefit from diversification decreases with the number of securities. Their findings are based on no constraints on short-selling and the same pairwise correlations. (Sankaran and Patil (1999). the

benefit of diversification lie not a return enhancement but risk reduction (merstatman1983). proving that diversification of an investment portfolio is preferable to a homogenous portfolio based on the dimensions risk and return .

An important predication of CAPM a descriptive (positive) model based on , markowitz idea is that ever investor would hold a portfolio of all securities in the market (given efficient market perfectly divisible securities and no transaction cost. (kathuria. myers 2013) .

Based on these findings, we posited the following hypothesis:

H1 there is statistical denotable relationship between Diversification in financial securities and liquidity at 0. 05 level of significance .

H2 there is statistical denotable relationship between Diversification in financial securities and return at 0. 05 level of significance .

H3 there is statistical denotable relationship between liquidity of financial securities and return at 0. 05 level of significance .

H4 liquidity mediate the relationship between Diversification in financial securities and return at 0. 05 level of significance .

8. Measurement

Measures for all constructs were taken from the existing literature. Moreover, the questionnaire items were adapted from different sources. First we measured diversification using 10 items from Shigeri nouri , marwn (2007) and liquidity was measured by a 9 item scale from Yu Tian (2009). . And measured return by used 8 items from Malaz khalafallah (2014) .

9. Sample and Data analysis

A literature survey can help anyone to enlighten that a significant portion of portfolio scholars considered students as their subject of study because a well-educated individual has shown the higher probability to create a healthy venture as

compared to his non-educated counterparts (Kennedy and Drennan 2001; Cooper et al. 1994; R. Roy 2017). Base on this context selected (60) investors at Khartoum stock exchange. To analysis our data (R. Roy 2017) said to test the validity and reliability of the conceptual model and then creating structural models were constructed to assess the model fitness, to testing hypotheses in PM recommend to use SPSS and AMOS .

10. Literature review

10.1 Diversification of portfolio:

As an explanation of diversification decision, there has been growing research placing particular focus on behavioral explanation, informational advantage, and excessive extrapolation of past returns and misinterpretation of risk concept (Barber & Odean, 2000). Diversification of Portfolio: Portfolio management is purposely designed to reduce the risk of loss of capital and/or income by investing in different types of securities available in a wide range of industries. The investors shall be aware of the fact that there is no such thing as a zero risk investment. More over relatively low risk investment give correspondingly a lower return to their financial portfolio. (Rodriguez. 2016) Number of securities another common way to think about a diversified portfolio is to analyze one that contains a large number of Securities numbers. The return variance of a portfolio of a Group of securities is lower than the average variance of the individual securities, unless all of the securities are perfectly correlated. Evans and Archer (1968) (Apollon Fragkiskos, 2010) ,Their findings are based on no constraints on short-selling and the same pairwise correlations. Focusing on the return profile of multiple stock portfolios, de Vassal (2001) examined the performance of portfolios with an increasing number of stocks. De Vassal reported that portfolios with bigger sizes demonstrated returns that had lower variance or

downside risk. Total return investor has long embraced opportunities in less liquid assets.

10.2 Liquidity:

Liquidity it starts with identify cash flow requirement and constrains right amount of liquidity. Liquidity classification, crucial given highly volatile market and increasingly complex investment options, the misalignment of portfolio liquidity profile with cash flow demand can lead to liquidity squeeze. This problem particularly challenging in stress of stock market environment, as demonstrated by global financial crisis (GFC) 2008. Maturity is defined as time required to liquidate assets is orderly manner without incurring forced losses. (kathuria,myers. 2013). liquidity categories various assets as ranging from high liquid to illiquid. high liquid assets can be liquidated within days where orderly liquidation of semi liquid securities could take up to one year. illiquid securities are those will take more than 18 months to liquidate. (Lawrence b siegel 2008). The levels of liquidity on optimal portfolios obtained when there is a positive preference for liquidity are much lower than on those optimal portfolios where investors show no sign of preference for liquidity. (Ana González2007)

10.3 return:

The return on an investment and the risk of an investment are basic concepts in finance. Return on an investment is the financial outcome for the investor. For example, if someone invests \$100 in an asset and subsequently sells that asset for \$111, the dollar return is \$11. Usually an investment's dollar return is converted to a rate of return by calculating the proportion or percentage represented by the dollar return. For example, a dollar return of \$11 on an investment of \$100 is a rate of return of $\$11/\100 , which is 0.11, or 11 % per cent. In the remainder of this chapter the word return is used to mean rate of return. An investor's total portfolio return consists of

the change in value of the portfolio, plus any income provided by the portfolio during the investment period. Translating this into an equation, assuming no additions or withdrawals, is relatively simple; it compares the ending value to the beginning value to determine a percentage change in value (maria1998) .

$$\left[\frac{\text{End Portfolio Value}}{\text{Begin Portfolio Value}} - 1 \right] \times 100 = \text{Return (\%)}$$

11. Theory and conceptual model

A portfolio has to be actively managed. There were many ways to build a portfolio with the aim to create a model can Portfolio Manager of expected returns and potential risks meet the tendencies and trends of investors, as characterized by some of the models are complex as the model presented by the (Markowitz 1952) , which depends on the formulation of the problem of choosing the portfolio efficient problem quad Programming He then presented (Sharpe) model per index was designed from behind streamlining information and procedures calculations required by the model Markowitz as presented in this field the first two models based on the market's response as a measure of risk (Beta) and the second depends on the covariance (Covariance) as a measure of risk and then made models Others aim to simplify the procedures necessary for the construction of investment portfolios using different methods Among those methods use linear programming method Simplex way in building investment portfolios that are compatible with the goals and desires and conditions of the investor .

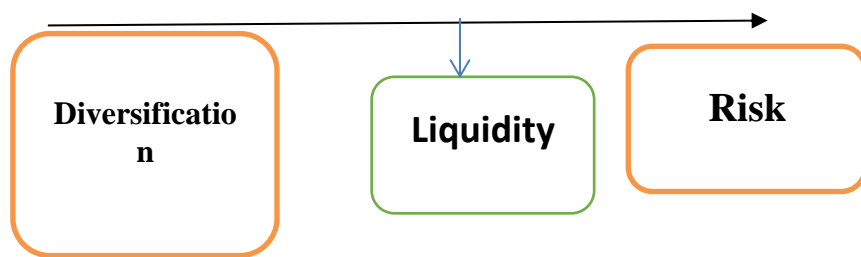
The approach presented in this article included portfolio formation by considering the expected rate of return and risk of individual stocks and, crucially, their interrelationship as measured by correlation. Prior to this investors would examine investments individually, build up portfolios of



attractive stocks, and not consider how they related to each other. Markowitz showed how it might be possible to better of these simplistic portfolios by taking into account the correlation between the returns on these stocks. The diversification plays a very important role in the modern portfolio theory. Markowitz approach is viewed as a single period approach: at the beginning of the period the investor must make a decision in what particular securities to invest and hold these securities until the end of the period. Because a portfolio is a collection of securities, this decision is equivalent to selecting an optimal portfolio from a set of possible portfolios. Essentiality of the Markowitz portfolio theory is the problem of optimal portfolio selection .

The method that should be used in selecting the most desirable portfolio involves the use of indifference curves. Indifference curves represent an investor's preferences for risk and return. These curves should be drawn, putting the investment return on the vertical axis and the risk on the horizontal axis. Following Markowitz approach, the measure for investment return is expected rate of return and a measure of risk is standard deviation (Kristina Levišauskait, 2010) base on this theory try to make to test this model .

Figure1: **Research framework**



Source:: apolln frgkiskos ,2014,mukesk davidh,2003, shigri nori, 2007 .

12. Data analysis:

Table 1: Demographic information

Variable		Frequency	Percent
Gender	Male	36	60. 0
	Female	24	41. 0
Age	less than 25	6	10. 0
	25-35	25	41. 7
	36-45	14	23. 3
	above 45	15	25. 0
Education	under graduate	2	3. 30
	Graduate	31	51. 7
	post graduate	27	45. 0
Specialization	Engineering	1	1. 70
	Medical	1	1. 70
	Social	8	13. 3
	Others	50	83. 3
Activities	special sectors	42	70. 0
	government sector	10	16. 70
	free business	2	3. 30
	Others	6	10. 0
Experience	less than 5	15	25. 0
	5 less than 10	13	21. 7
	10 less than 15	11	18. 3
	15 less than 20	9	15. 0
	more than 20	12	20. 0
Total		60	100%

Source: prepared by researcher from statistical analysis results 2018 .

12. 1 Measurement model: reliability and validity

Measurement model is used for the qualitative assessment of validity and reliability of the constructs included in a study (Henseler et al. 2009). In this research, we first conducted an exploratory and confirmatory factor analysis (EFA) and (CFA), to verify whether the predetermined sets of variables were interrelated in the hypothesized manner.

12. 2 Exploratory Factor Analysis

Researcher used EFA to measure the adequacy of the sample by using Bartlett's test of sphericity and the Kaiser- Meyer-Olin's (KMO) measure of sampling adequacy. EFA result found KMO = 0. 763 and a significant Bartlett's test ($\chi^2 = 160. 378, p < 0. 000$), indicating that factor analysis is appropriate (Hair et al. 2010). Reliability analysis was done on all the constructs by calculating Cronbach's alpha. By reliability analysis of the questionnaire, some items were removed and the rest was retained for structural equation modeling analysis as shown in Table 2:

Kaiser-Meyer-Olkin Measure of Sampling Adequacy .	.768		
Bartlett's Test of Approx. Chi-Square	160. 378		
Sphericity Df	28		
Sig .	.000		
	Component		
	1	2	3
diversification2		.818	
diversification3		.799	
Return1	.901		
Return2	.788		
Return3	.826		
Return5	.830		
Liquidity2			.889
Liquidity5			.796

Source: prepared by researcher from statistical analysis results 2018 .

Table: 3 Descriptive Statistics (mean and standard deviation) and correlation analysis

	Mean	Std. Deviation	Liquidity	diversification	Return
Liquidity	1.8750	.64850	1		
diversification	2.3083	.70164	0.105	1	
Return	2.0875	.76028	.349**	.314*	1

Source: prepared by researcher from statistical analysis results 2018 . *. Correlation is significant at the 0.05 level .

** . Correlation is significant at the 0.01 level 12.3

Measurement Model (Confirmatory Factor Analysis)

Measurement model is used to find out the relationship between items and latent variables. In the proposed model, 16 items were loaded on three exogenous factors (attitude, subjective norms and perceived behavioural control) and one endogenous factor (entrepreneurial intention). Descriptive statistics and correlation of the variables used in the study are given in Table 2. Confirmatory factor analysis was done in order to measure the reliability and validity shown in Figure2. Structural model estimation

Discussion

This study focuses on the relationship between a component of diversification and return. The findings of the study are discussed based on tested hypotheses. The study contributes to make awareness for all the interested groups how can construct and manage the portfolio. The current environment needs the managers of Sudanese companies to have wisdom and skills and knowledge to deal with dynamic environment with high compaction from global wise. They should know the best strategy for construct the portfolio.

H1 the probability of getting a critical ratio as large as 0.447 in absolute value is .655. In other words, the regression weight for diversification in the prediction of Liquidity is not significantly different from zero at the 0.05 level. Each liquidity bucket contains a diverse mix of strategies and asset classes. Thus, the argument that one might still choose to invest in an illiquid bucket since it has investments with low correlation to the rest of the book and adds to the diversification, is one which rings hollow. One may find ample diversification in the more liquid buckets. ([Ranjan Bhaduri and Christopher Art 2008](#)).

H2 The probability of getting a critical ratio as large as 2.181 in absolute value is .029. In other words, the regression weight for diversification in the prediction of Return is significantly different from zero at the 0.05 level. Agree with ([Reza Raeia, Banafsheh Farhangzadehb,, Meisam Safizadehb, Fatemeh Raei,2016](#))

H3 The probability of getting a critical ratio as large as 2.185 in absolute value is 0.029. In other words, the regression weight for Liquidity in the prediction of Return is significantly different from zero at the 0.05 level. Agree with One would expect a higher return in the buckets that contain investments that are less liquid. -([Rasa Norvaišiena*, Jurgita Stankeviiieb.2014](#))([Ranjan Bhaduri and Christopher Art 2008](#)).
·([Lubo-s Pastor &Robert F. Stambaugh.2002](#))

H4 the indirect (mediated) effect of diversification on Return is .052. That is, due to the indirect (mediated) effect of diversification on Return,

when diversification goes up by 1, Return goes up by 0.052. This is in addition to any direct (unmediated) effect that diversification may have on Return on portfolio and manage. disagree with (Ana González 2007). . Portfolio performance, measured by the Sharpe ratio relative to the tangency portfolio, varies significantly with liquidity. Moreover, although mean-variance performance becomes clearly worse, the levels of liquidity on optimal portfolios obtained when there is a positive preference for liquidity are much lower than on those optimal portfolios where investors show no sign of preference for liquidity. Because the Sudanese investors focus on return and did not pay attention for liquidity.

Conclusions

Neither the importance of the current environment needs the managers of Sudanese companies to have wisdom and skills and knowledge to deal with dynamic environment with high compaction from global wise. They should know the best strategy for construct the portfolio and manage. (researcher 2018). Despite its significance, it is striking to see that there are rare studies on the impact of diversification on return , liquidity as moderator in Sudan. not much research on this issue have been undertaken from the least developed countries perspective (2017) In an attempt to fill this gap, this study has tested the direct effect of diversification on return in the context of Sudan, the findings demonstrate that diversification and liquidity has positive effect on return are a strong predictor of investor' to manage the portfolio. The findings of this study provide theoretical and practical implications. The study's

findings corroborated evidence from previous studies that positive outcomes result from portfolio management.

Limitations and Future Research Directions

This study examined the factors that appear to exercise the greatest influence on the individual stock investor, and included not only the factors investigated by previous studies and derived from prevailing portfolio theories, influence the stockholders' investment decisions in Sudan.

First, future research should attempt to explain the relative importance of decision variables have for individual investors making stock purchase decisions, Secondly, the study was conducted to investors in Sudan. The findings can be verified by conducting the same study in the rest of the African countries, and thirdly, whether there are homogeneous clusters or groups of variables that form identifiable decision determinants that investors rely upon when making stock investment decisions.

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