ANALYSIS OF LIQUIDITY FACTORS THAT INFLUENCE EXCESS STOCK RETURN WITH RELATIVE MEASURE OF LIQUIDITY INCLUDED; WITHIN COMPANIES ALWAYS LISTED IN LQ45 2002-2012

Name : **S. Richard Kamie**
Supervisor : **J. Sukmawati Sukamulja**
Study Program : **International Management**
Faculty : **Economy**
University : **Atma Jaya Yogyakarta, Jalan Babarsari 43-44, Yogyakarta**

Abstract

This study used the sample of companies always listed in the Indonesian stock index LQ45 period of 2002-2012. The purpose of this study is to reexamine the relationships of size, book value of equity to the market value of equity (BM), turnover, price, and relative measure of liquidity with excess stock return (RML). The data was secondary in nature. With Excess stock return as the dependent variable while size, BM, turnover, price, and RML as independent variable. The result of this study shows that size gives impact to excess stock return. BM, turnover, price, and RML has no effect on excess stock returns. Size, BM, turnover, price, and RML explained the excess stock return changes by 14, 4%. With size, BM, and turnover have positive effect on excess return. While price, and RML negative effect of excess return.

Keywords: LQ45, Liquidity factors, Excess stock return

A. Introduction

1. Study Background

There are various associations to everything. When asked who is the writer's favorite character is, the first thing that comes floating into mind would be a fictional character by the name of Andrew Dufresne from the seven nominated academy awards film The Shawshank Redemption; the same metaphor could be said about liquidity. When it comes to this particular subject, the writer noticed that in almost every literature about liquidity, the name YakovAmihud and HaimMendelson shows up in the bibliography or in citation. In year 2000 journal of applied finance about the liquidity route to a lower cost of capital by YakovAmihud and HaimMendelson was the journal that piqued the interest of the writer to look for this subject. The elaboration on the connectivity between stock price and its level of liquidity was very interesting, which made the writer curious about the workings of liquidity, about its calculations and in the end decide to look into the journal by MdHamid about liquidity and its relative measure.

2. Problem Formulation

There are many factors that will decide whether you will win big or lose big in trading stocks such as: economic condition whether its domestic or international, exchange rate, current trend in society, some even say human psychology. But liquidity was seldom to be considered part of it. In result, the aim is to achieve a better understanding of liquidity risk and its method of measurement because undoubtedly liquidity risk plays a part in investment decision.

3. Research Objective

The objective of this research is to help us examine and to analyze the variables of the stock market gathered from their historical data with its relationship to liquidity, its comparative form or relative measure of liquidity, and the level of the excess stock return.

B. Theoritical Background and Hypothesis

Amihud and Mendelson (2000) argue that a company can raise its stock price by enhancing the liquidity of its stock. The greater the stock's liquidity, the lower the expected return that the investor will require which in turn will lower corporate cost of capital and a higher valuation for any given cash flows that the company generates. In addition to the argument about the stock's co-movement with liquidity, Kalok (2008) found that regardless of theilliquidity measures theyuse, an increase instock price synchronic, results in a decline inthese illiquidity measures.Furthermore, the effect on liquidity is not confined to co-movementwith the market.

After controlling for the market returns, the industry co-movement also hassignificant effects on liquidity.Their results alsoshow that the relationship prove true not only for index stocks, but also for nonindexstocks. That the twoeffects might be indeed related, as the increase of R-square is related to the rise in liquidity forthose stocks added to the S&P 500 index. Lastly, theyalsoshow that the lower bid-ask spread of exchange traded funds is due to their relatively large stock price synchronicity. The evidence suggests thatthe degree of return co-movement has a significant impact on market liquidity.

It is a widely known fact that there is a negative relationship between stock return and its level of liquidity (Amihud & Mendelson, 1986; Fiori, 2000). This fact suggest that stocks that are less traded gives higher return to investors.

H0: The relationship between the level of relative measure ofliquidity and excess stock returns isnegative.

If the relation between stock return and liquidity is negative, it means that stocks that are not that frequently traded give higher return to the investors. This has been interpreted as the mirror of liquidity risk

premium, since stocks that are less liquid or illiquid might be riskier than its counterpart since investor cannot quickly adjust their portfolio when the time comes.

With that reason, the investors should require a premium for bearing liquidity risk that cannot be diversified and if RML captures a significant part of the liquidity risk then the hypothesis will be accepted. Besides from illiquidity of stocks, the fluctuation of liquidity also can be considered as risky to the investors (as more it fluctuates, the higher the uncertainty) which, of course, worry them. This happens because they think that their analysis of the case of market goes against their way becomes less reliable. Therefore, investors seek higher return from trading in a market with more volatility in its behavior, and the hypothesis will be rejected.

C. Research Methodology

The following variables will be listed and calculated for every stocks included in the sample set:

1. SIZE
2. BM
3. TURN
4. STDTURN
5. CVTURN
6. PRICE
7. EXCESS STOCK RETURN

The RML measure is calculated for each stock as(Hamid, 2009: 28):

$$RML_{j,t} = \frac{TV_{j,t}}{ATV_{N-j,t}}$$

The next steps will be the classical assumption tests which will be comprised as:

1. Descriptive Statistics
2. Normality Test
3. Multicollinearity Test
4. Heteroscedasticity Test
5. Autocorrelation Test
6. Coefficient of Determination
7. Hypothesis Testing

D. Data Analysis and Discussion

1. Descriptive Statistics

Table 4.1
Descriptive Statistics Result

	N	Minimum	Maximum	Mean	Std. Deviation
Excess Stock Returns	77	-1.00	-0.05	-0.0953	0.10812
SIZE	77	27.19	35.61	30.8259	1.36778
BM	77	0.03	1.00	0.5306	0.26914
TURN	77	0.00	0.07	0.0052	0.00883
STDTURN	77	0.00	0.07	0.0045	0.00873
CVTURN	77	0.00	1.99	0.8553	0.30029
PRICE	77	-0.85	1.60	0.2885	0.42379
RML	77	0.03	12.48	1.6423	2.67646
STDRML	77	0.03	11.02	1.4210	2.25847
CVRML	77	0.55	6.90	0.9820	0.72919

Source: Appendix 2

2. Normality Test

Table 4.2
Normality Test Result 1

		Unstandardized Residual
N		77
Normal Parameters	Mean	0.0000000
	Std. Deviation	0.104688(
Most Extreme Differences	Absolute	0.316
	Positive	0.285
	Negative	-0.316
Kolmogorov		2.773
Asymp. Sig. (2-tailed)		0.000

Source: Appendix 3

Trimming is done by eliminating outlier data. Preliminary data of this study a total of 77 data, the amount of data that was trimmed are as many as 21 data and the final data in this study were 55 data. Here is the end data after normality test which results in the following numbers:

Table 4.3
Normality Test Result 2

		Unstandardized Residual
N		56
Normal Parameters	Mean	0.0000000
	Std. Deviation	0.02428907
Most Extreme Differences	Absolute	0.138
	Positive	0.079
	Negative	-0.138
Kolmogorov		1.029
Asymp. Sig. (2-tailed)		0.240

Source: Appendix 3

3. Multicollinearity test

Table 4.4
Multicollinearity Test Result 1

Variable	Collinearity Statistics	
	Tolerance	VIF
SIZE	0.211	4.750
BM	0.365	2.741
TURN	0.027	37.173
STDTURN	0.020	48.973
CVTURN	0.181	5.532
PRICE	0.794	1.260
RML	0.031	32.179
STDRML	0.029	34.787
CVRML	0.226	4.426

Source: Appendix 3

The next step proceeds to eliminate the variable STDRML and STDTURN. Multicollinearity test results that have been carried out after removing the STDTURN and STDRML are as follows:

Table 4.5
Multicollinearity Test Result 2

Variabel	Collinearity Statistics	
	Tolerance	VIF
SIZE	0.216	4.630
BM	0.366	2.730
TURN	0.330	3.031
CVTURN	0.258	3.869
PRICE	0.752	1.330
RML	0.271	3.688
CVRML	0.208	4.813

Source: Appendix 3

4. Heteroscedaticity Test

Table 4.6
Heteroscedaticity Test Result

Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig
(Constant)	0.097	0.101		0.959	0.343
SIZE	-0.002	0.003	-0.210	-0.690	0.494
BM	0.000	0.014	0.006	0.024	0.981
TURN	0.495	1.999	0.061	0.248	0.806
CVTURN	0.006	0.013	0.130	0.464	0.645
PRICE	-0.011	0.007	-0.231	-1.413	0.165
RML	-0.008	0.008	-0.288	-1.057	0.297
CVRML	-0.014	0.015	-0.284	-0.912	0.367

Source: Appendix3

5. Autocorrelation Test

Table 4.7
Autocorrelation Test Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,516	0,266	0,144	0,02599	2,084

Source: Appendix 3

Durbin Watson value gained (DW) is located between 1,861 and 2,139 which is 2,084. Therefore it can be concluded that there is no autocorrelation.

6. Multiple Regression Analysis

Table 4.8
Regression Analysis Result

Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig
(Constant)	-0.585	0.191		-3.060	0.004
SIZE	0.016	0.006	0.782	2.749	0.009
BM	0.028	0.026	0.234	1.069	0.291
TURN	3.200	3.781	0.195	0.846	0.402
CVTURN	-0.006	0.024	-0.063	-0.243	0.810
PRICE	-0.020	0.014	-0.216	-1.414	0.165
RML	-0.013	0.015	-0.218	-0.857	0.396
CVRML	0.019	0.029	0.192	0.661	0.512
Adjusted R Square		0.114			
F Square		2.175			
Sig.		0.056			

Source: Appendix 4

Based on the results of multiple regression analysis, the multiple linear regression model is as follows:

EXSR= -0.585 + 0.016 SIZE +0.028 BM + 3.200 TURN – 0.006 CVTURN – 0.020 PRICE – 0.013 RML + 0.019 CVRML

Discussion

Size does have effect on excess stock returns. Sofyaningsih and Hardiningsih (2011) stated that the company has large total assets shows that the company has reached a stage of maturity in this stage where the company has a positive cash flow and is considered to have good prospects in a relatively long period of time, but it also reflects that the company relatively more stable and better able to generate profits than firms with small total assets. The ability to generate high profits will increase demand for the company's stock. The high demand to improve the stock price and the stock price will further increase the excess stock returns.

Khodamipour (2013) stated thatprofitability refers to the health of an economy agency and its liquidity power as well as the sign of its survival. Although both of these are important, however; liquidity has more significance. Companies with low profitability or even non-profitabilitycan serve the economy for a long duration of time,but companies without liquidity are less likely tosurvive which itself has so many consequences. His research was aimed to study the relationship between liquidity and company size with value of thecompany in companies listed onthe Tehran Stock Exchange and the obtained results regarding there is no significant relationship between stock risk and company size with stock return and

between company size and company value, respectively. Also the results obtained indicate that there is a significant and direct relationship between company size with book value to market value ratio and liquidity volume.

E. Conclusion and Future Research Advice

1. Conclusion

The result of data analysis that has been done shows that:

a. SIZE does affect excess stock returns.
b. Book value of equity to the market value of equity has no effect on excess stock returns.
c. Stock turnover rate has no effect on excess stock returns.
d. Coefficient of variation of turnover has no effect on excess stock returns.
e. Price has no effect on the variable of excess stock returns.
f. Relative measure of liquidity (RML) has no effect on excess stock returns.
g. Variation of the relative measure of liquidity does not have any effect on excess stock returns.

2. Research Limitation

This study has a couple of limitations items, namely:

a. This study has limitations those variables that affect excess stock returns only size. Future studies may add other variables that affect the stock excess returns.
b. This research was conducted only at the companies always listed in LQ 45 years from 2002 to 2012.

3. Future Research Advice

This research is far from perfect, so if anyone wants to this or similar type of research, there are some things that they need to take heed, they are:

a. Use other types of index, IHSG for example. And try not to put the category of "Always in index A" for different results. By taking another sample hopefully it will yield more accurate, better results and give contribution to this area of study.
b. Taking more time series data to make the analysis better. With the usage of more time series data hopefully it will give results that are more comprehensive and more precise than before. In that it will contribute further to increase the level of competence in the particular discipline served.

REFERENCE

Akbas, Ferhat.Armstrong, W.J. Petkova, Ralitsa. 2011. Idiosyncratic Volatility of Liquidity andExpected Stock Returns.

Amihud, Yakov. Mendelson, Haim. 2000. The Liquidity Route to a Lower Cost of Capital. Journal of Applied Corporate Finance.Vol 12.4.8-25.

Amihud, Yakov. Mendelson, Haim. 2005. Liquidity and Asset Prices. Foundations and Trends in Finance.vol.1, no. 4, pp. 269-364.

Benic, Vladimir.Franic, Ivna. 2008. StockMarketLiquidity: ComparativeAnalysisofCroatianandRegionalMarkets. Financial Theory and Practice 32, 477-498.

Bickenbach, Frank. Bode, Eckhardt. Krieger-Boden, Christiane. 2010. Closing the Gap between Absolute and Relative Measures of Localization, Concentration or Specialization. Kiel Institute for the World Economy. Germany.

Chan, Kalok. Hameed, Allaudeen. Kang, Wenjin. 2008. Stock Price Synchronicity and Liquidity.

Chen, Langnan. Li, Steven. Wang, Jinan. 2010. Liquidity, Skewness and Stock Returns: Evidencefrom Chinese Stock Market.

Elleuch, Jaouida. Trabelsi, Lotfi. 2009. Fundamental Analysis Strategy and thePrediction ofStock Returns. International Research Journal of Finance and Economics.

F.S, Mirfeys.Zamanian, Gholamreza.Kahreh, Z.S. Kahreh, M.S. 2011.The Relationship between Liquidity Risk and Stock Price:An Empirical Investigation of the Tehran Stock Exchange. European Journal of Economics, Finance and Administrative Sciences.

Ghalibaf, A.Hassan. Karimi, Mehdi. Eghbali, Elham. 2012. Studying Liquidity Premium Pricing, Size, Value, and Risk Market in Tehran Stock Exchange. International Journal of Economics and Finance; Vol. 4, no. 9.

Ghozali, Imam. 2006. *AplikasiAnalisis Multivariate DenganSPSS.*UniversitasDiponegoro, Semarang.

Imbs, Jeans. Mejean, Isabelle. 2010. Trade Elasticities.

Khodamipour, Ahmad. Gholestani, Shahram. Khorram, Majied. 2013. The relationship between liquidity and the company size withcompany value in companies listed on the Tehran Stock Exchange. European Online Journal of Natural and Social Sciences; vol.2, No. 3(s), pp. 1210-1217.

Kubota, Keiichi. Takehara, Hitoshi. 2009. Expected Return, Liquidity Risk,andContrarianStrategy: Evidencefrom the Tokyo Stock Exchange. 655-679.

Muranaga, Jun. 1999. Dynamics of market liquidity of Japanese stocks:An analysis of tick-by-tick data of the Tokyo Stock Exchange.

Murhadi, R.Werner. 2009. *PengaruhIdiosyncraticRiskdan Likuiditas Saham TerhadapReturnSaham.* Faculty of Business& Economics, University of Surabaya.

Oliveira, Blandina. Fortunato, Adelino. 2006. Firm Growth and Liquidity Constraints: A Dynamic Analysis. P.139-156.

Salehi, Mahdi. Talebnia, Ghodratallah. Ghorbani, Behzad. 2011. A Study of the Relationship Between Liquidity and Stock Returnsof Companies Listed in Tehran Stock Exchange. World Appl. Sci. J., 12 (9): 1403-1408.

Simlai, Pradosh. 2009. Stock Returns, Size, and Book to Market Equity. Journal of Economy and Finance. Vol. 26, No. 3 pp. 198-212.

Wyss, Rico von. 2004. Measuring and Predicting Liquidity in the Stock Market. University of St. Gallen, Switzerland.

http://www.answers.com/topic/glejser-test#page2

http://www.entrepreneur.com/article/187606)

http://en.wikipedia.org/wiki/Jakarta_Stock_Exchange

http://en.wikipedia.org/wiki/Liquidity

http://en.wikipedia.org/wiki/Liquidity_crisis_of_September_2008

http://en.wikipedia.org/wiki/Liquidity_premium

http://en.wikipedia.org/wiki/Liquidity_risk

http://www.business.qld.gov.au/business/starting/supplier-stock-management/stock-control-basics/calculating-stock-turnover

http://www.investopedia.com/terms/l/liquidity.asp#axzz29dj8aLG6

http://www.investopedia.com/terms/b/bvps.asp#axzz29dj8aLG6

http://www.investopedia.com/terms/m/market-value-of-equity.asp#axzz29dj8aLG6

http://www.investopedia.com/terms/t/turnoverratio.asp#axzz29dj8aLG6

http://www.publishyourarticles.net/knowledge-hub/statistics/absolute-and-relative-measures-of-dispersion.html

http://wiki.answers.com/Q/What_is_relative_measure