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**An Empirical Investigation of Liquidity and Stock Returns Relationship in Vietnam  
Stock Markets during Financial Crisis**

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**Abstract**

This paper investigates the relationship between liquidity and stock returns in the Vietnam stock market during financial crisis using a data set ranging from 2006 to 2010. Employing a rich and detailed dataset of characteristics of firm listed in Ho Chi Minh City Stock Exchange, the results from the analysis indicate that liquidity positively affects stock returns. Our results contradict previous results that liquidity is negatively correlated with stock returns as investors required a premium to compensate for illiquid stocks in developed markets.

**Keywords:** Liquidity, stock returns

**JEL Classification:** G10, G12

# **An Empirical Investigation of Liquidity and Stock Returns Relationship in Vietnam Stock Markets during Financial Crisis**

## **1. Introduction**

The flow of funds to emerging markets has increased sharply in recent years. Investor interest in these markets surges in response to their prospects for rapid economic growth, financial deregulation, and the benefits of international diversification. The Institute of International Finance estimates that net private capital flows to emerging economies is about \$908 billion in 2010, which is 50% higher than in 2009 and projects to grow to above \$1009 billion in 2012.

Liquidity is one of the important factors to attract investors in emerging markets as highly liquid stocks are considered to be cheaper in trading costs. In addition, it is suggested by many research that liquidity helps to promote economic development. For example, Levine & Zervos (1998) present cross-country econometric evidence showing that, in a sample of 47 countries, stock market liquidity contributed a significant positive influence to GDP growth between 1976-93.

Stock markets may affect economic activity through the creation of liquidity. Many profitable investments require a long-term commitment of capital, but investors are often reluctant to relinquish control of their savings for long periods. Liquid equity markets make investment less risky--and more attractive--because they allow savers to acquire an asset--equity--and to sell it quickly and cheaply if they need access to their savings or want to alter their portfolios. At the same time, companies enjoy permanent access to capital raised through equity issues. By facilitating longer-term, more profitable investments, liquid markets improve the allocation of capital and enhance prospects for long-term economic growth. Further, by making investment less risky and more profitable, stock market liquidity can also lead to more investment. Put succinctly, investors will come if they can leave (Levine 1996).

Vietnam is an emerging market and it is gradually gaining in quality and efficiency of the market. Bekaert and Harvey (1997) clearly points out that the behavior of emerging markets is changing significantly over time with respect to their degree of integration with the global economy. It is, therefore, important to examine the possible changes in the liquidity of these markets over time and to explore the impact of such changes on equity returns. This research attempts to uncover the impact of liquidity on equity returns using a data set on Vietnam stock market.

The question whether liquidity affect stock returns is a central topic in finance. A large amount of papers in the literature focuses on investigating factors that affect stock returns. Liquidity is considered as a major determinant of stock returns and many authors argue that liquidity has first order effect on stock returns.

It is generally accepted that liquidity, marketability or transactions costs are important attributes of assets which influence investors' portfolio investment decisions. Since investors care about expected holding period returns net of trading costs, less liquid (and more costly to trade) assets need to provide higher gross returns compared to more liquid assets.

However, some authors argue that liquidity can positively affect corporate governance and firm performance, and in turns, affect the stock returns (Fang et al. 2009). Liquid stocks make it easier for non-blockholders to intervene and become blockholders (Maug 1998), facilitate the information of a toehold stake (Kyle & Vila 1991), promote more management compensation (Holmstrom & Tirole 1993), reduce managerial opportunism (Admati & Pfleiderer 2009; Edmans 2009; Palmiter 2002), and stimulate trade by informed investors thereby improving investment decisions through more informative share prices (Khanna & Sonti 2004; Subrahmanyam 2001).

Haugen and Baker (1996) report that the liquidity of stocks is one of several common factors in explaining stock returns across global markets. Their research indicates that the cross-sectional stock returns in developed markets have common determinants from

period to period and from country to country, and that the liquidity of stocks is one of the important determinants of stock returns. Estrada (2000) shows that the semi-deviation with respect to the mean is a useful variable in explaining the crosssection of industry returns in emerging markets. He further indicates that the semideviation might be a plausible variable to be used in a CAPM framework to compute the cost of equity in emerging markets.

Amihud and Mendelson (1980) formalize the important link between market microstructure and asset pricing. Their study show that, in equilibrium, illiquid assets would be held by investors with longer investment horizons. As a result of this horizon clientele, they argue that the observed asset returns must be an increasing and concave function of the transactions costs. Using the quoted bid-ask spread as a measure of liquidity, they report evidence consistent with the notion of liquidity premium.

The empirical evidence to the relationship between liquidity and stock returns is mixed.

There is a large body of research that supports the view that the liquidity of securities affects their expected returns. The influence of trading costs on required returns examined by Amihud and Mendelson (1986), Brennan and Subrahmanyam (1996), Jacoby et al. (2000) implies a direct link between liquidity and corporate cost of capital. Those studies present a model showing that liquidity, marketability or transactions costs influence investors' portfolio decisions. Since rational investors require a higher risk premium for holding illiquid securities, cross-sectional risk-adjusted returns are lower for liquid stocks. This proposition has been empirically supported in various studies on *mature* capital markets.

Amihud and Mendelson (1989) conduct cross-sectional analyses of US stock returns and show that risk-adjusted returns are decreasing with respect to liquidity, as measured by the bid-ask spread. Brennan et al. (1998) investigate the relation between expected returns and several firm characteristics including market liquidity, as measured by trading

volume. They find a significant negative relation between returns and trading volume for both NYSE and NASDAQ stocks, thus linking expected returns and liquidity.

Amihud et al. (1997) report that liquidity improvement on the Tel Aviv Stock Exchange was associated with a positive and permanent price appreciation. Datar et al. (1998) use turnover rate as a measure of liquidity, and provide evidence for a negative correlation between liquidity and stock returns.

Eleswarapu and Reinganum (1993) empirically examine the seasonal behavior of the liquidity premium in asset pricing and document a strong seasonal component in the association between liquidity and stock returns as this relationship is mainly positive the month of January. For the non-January months, the research cannot detect a positive liquidity premium. The impact of the relative bid-ask spreads on asset pricing in non-January months cannot be reliably distinguished from zero. Brennan and Subrahmanyam (1996), take an innovative approach and segregate the cost of transacting into a variable and a fixed component. In contrast to the results of Eleswarapu & Reinganum (1993), they do not find any evidence of seasonality in liquidity premium.

Baker & Stein (2004) build a model that helps to explain why increases in liquidity predict lower subsequent returns in both firm-level and aggregate data. The model features a class of irrational investors, who under-react to the information contained in order flow, thereby boosting liquidity. In the presence of short-sales constraints, high liquidity is a symptom of the fact that the market is dominated by these irrational investors, and hence is overvalued.

The traditional explanation for why liquidity might affect expected returns is that investors holding stocks recognize that they will face transaction costs when they sell their stocks at some time in the future. Therefore, investors will discount stocks with higher transaction costs (Amihud & Mendelson 1986; Vayanos 1998). Another

explanation proposed by Baker & Stein (Baker & Stein 2004) is that high liquidity is a sign that irrational investors is positive and expected returns are abnormally low.

A theoretical models developed by Easley & O'Hara (2004) and Easley et al. (2002) indicate that private information affects the process by which prices become informational efficient and this affects the risk of holding stocks. Therefore, stocks with higher probability of information based trading will have higher expected returns. In addition, Glosten & Harris (1988) report that adverse selection costs are the primary cause of illiquidity in financial markets. Hence, there should be a negative return between liquidity and returns.

The inconclusive evidence on the return–spread relationship leads to the development of turnover rate as a liquidity proxy. Turnover rate is defined as the total dollar value of trading in a stock over a given period divided by market capitalisation. Haugen & Baker (1996) report a statistically significant negative return–turnover rate relationship for stocks that were part of the Russell 3000 stock index. In other words, less liquid stocks are found to have higher returns. Datar et al. (1998) and Hu (1997) confirm this finding using NYSE data. Using volume traded rather than turnover rate to proxy for liquidity, Brennan et al. (1998) find a negative relationship for both NYSE and NASDAQ stocks.

On the other side, a number of authors report a positive link between liquidity and stock returns in emerging markets (Jun et al. 2003).

A potential explanation for the positive correlation between liquidity and emerging stock market returns can be made from the perspective of lower level of global market integration. While Longin and Solnik (1995) report an overall increase in the correlation structure among developed markets, Bekaert and Harvey (1997) find evidence for varying degrees of integration of emerging equity markets with the world economy. If emerging markets are not fully integrated with the global economy, lack of liquidity will not function as a risk factor, and thus cross-sectional returns will not necessarily be lower

for liquid markets. In this sense, our findings are supportive of the view that emerging equity markets have a lower degree of integration with the global economy.

In terms of using country data of mature markets, many authors investigate the effect of liquidity on stock returns using Australian data and report a negative relationship indicating the existence of a positive liquidity premium (Chan & Faff 2003; Marshall 2006; Marshall & Young 2003). Lam & Tam (Forthcoming) study the liquidity impact on stock return in Hong Kong markets and stress the importance of liquidity in stock return pricing.

However, there is not much published research investigating this relationship in emerging market as Vietnam stock markets and this paper is one of the first to attempt to fill the gap in this field. In this paper, we employ a dataset of Vietnamese firms listed on Ho Chi Minh City Stock Exchange (Hose) to further shed light on this relationship. This paper is one of the very first research carefully investigating the relationship between stock return and liquidity in Vietnam stock markets. Our main contribution to the financial literature is to provide an empirical analysis to uncover whether liquidity is priced in Vietnam stock market.

The remainder of this paper is structured as follows. Section two describes the data. Section three introduces the methodology. Section four presents the empirical results. Finally, section five concludes the paper.

## **2. Data description**

The data employed in this paper are collected from different sources. We use both the firm specific data from financial reports of listed companies and market data from Ho Chi Minh Stock Exchange. Our data set includes of all listed firms from January 2007 to June 2010. This is an extended time period in the case of HCMC Exchange. We employ monthly data for our analysis.

Many papers attempt to shed light on the relation between liquidity and asset returns using a proxy for liquidity which is the bid - ask spread. The bid-ask measure is widely used by researchers in the current literature. However, the bid-ask spread measure is not relevant in Vietnamese stock market because all exchanges in Vietnam employ the order system rather than bid-ask system. Therefore, we propose the turnover rate of an asset as a proxy for its liquidity. We define the turnover rate of a stock as the number of shares traded divided by the number of shares outstanding in that stock and think of it as an intuitive metric of the liquidity of the stock. As discussed in Datar et al. (1998), there are many advantages of using the turnover rate to measure liquidity. Firstly, it has strong theoretical appeal. Amihud & Mendelson (1986) prove that in equilibrium liquidity is correlated with trading frequency. So, if one cannot observe liquidity directly but can observe the turnover rate, then one can use the latter as a proxy for liquidity. Secondly, Vietnamese stock market is trading using the order system and the data on turnover rates is relatively easy to obtain. This enables us to capture month by month variation in the liquidity of assets and allows the examination of liquidity effects across a large number of stocks over a long period of time.

We use the turnover rate to measure the liquidity as this is the only reliable measure with enough data to compute. For each stock and each month, we calculate the average daily trading volume during the month and divide it by the number of outstanding shares. We then express this ratio as a percentage to obtain our turnover rate variable.

Other variables are constructed as follows: The size variable is the log of the capitalization of the firm at the end of each month. The book to market ratio is calculate as the ratio of book value at the end of the preceding quarter and the market value of the end of each month. Beta is calculated using the price data of the previous year (weekly), where the return on Vnindex is used to proxy for market return. All returns are continuously compounded.

Table 1 describes the data statistics for the sample used in our analysis.

**Table 1 Description of Data**

	<b>RETURN</b>	<b>TURNOVER</b>	<b>BETA</b>	<b>SIZE</b>	<b>BE_ME</b>
Mean	-0.008107	0.005717	0.950267	11.72967	0.720460
Median	-0.011196	0.002873	0.957632	11.62219	0.594203
Maximum	0.434299	0.124468	1.544886	13.71822	3.627284
Minimum	-0.404926	1.48E-05	0.407163	10.57047	0.023715
Std. Dev.	0.083845	0.007826	0.246617	0.610170	0.510563
Skewness	0.173811	3.875399	0.151824	0.813839	1.322844
Kurtosis	4.652361	30.92224	2.485943	3.127009	5.124955
Jarque-Bera	399.1594	117561.7	49.90396	373.1651	1612.114
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	-27.23827	19.20764	3192.897	39411.68	2420.745
Sum Sq. Dev.	23.61346	0.205752	204.2948	1250.583	875.6071
Observations	3360	3360	3360	3360	3360

Table 2 provides a comparison of return and liquidity over time in Vietnam from 2007 to 2010. On average, the return on the stocks in Vietnam equity markets is 0.47%, -4.77%, 1.62% and -0.30% for the year 2007, 2008, 2009, and 2010 respectively. The turnover ratio is 0.52%, 0.29%, 0.84% and 0.72% for the year 2007, 2008, 2009, and 2010.

**Table 2 Description of liquidity and stock returns over time**

	2007		2008		2009		2010	
	RETURN	TURNOVER	RETURN	TURNOVER	RETURN	TURNOVER	RETURN	TURNOVER
Mean	0.47%	0.52%	-4.77%	0.29%	1.62%	0.84%	-0.30%	0.72%
Median	-0.31%	0.33%	-5.44%	0.18%	1.25%	0.42%	-0.48%	0.37%
Maximum	43.43%	4.71%	29.72%	3.02%	31.78%	12.45%	30.49%	5.94%
Minimum	-35.36%	0.03%	-33.37%	0.00%	-40.49%	0.01%	-37.42%	0.01%
Std. Dev.	8.25%	0.55%	8.44%	0.33%	8.24%	1.08%	5.59%	0.88%
Skewness	40.42%	277.04%	66.70%	293.77%	-19.76%	324.69%	-51.87%	241.35%
Kurtosis	561.29%	1418.17%	462.24%	1527.06%	462.12%	2214.44%	1249.91%	1061.80%
Observations	960	960	960	960	960	960	480	480

Table 3 presents the correlation coefficients between stock returns, liquidity measure, beta, size and book-to-market value in our sample for analysis and regressions. Overall, stock returns are positively correlated with liquidity measure and book to market but

negatively correlated with beta and size. Liquidity is also positively correlated with beta and book-to-market value.

Another particular note here in the correlation results is that there seems to be a strong positive link between beta and size of the firms indicating that firms with larger size tend to have higher systematic risk. This is inconsistent with the commonly accepted proposition that size and beta are negatively correlated because larger firms are more likely to have lower systematic risk.

**Table 3 Correlation Matrix between variables**

	RETURN	TURNOVER	BETA	SIZE	BE_ME
RETURN	1				
TURNOVER	0.236117	1			
BETA	-0.01889	0.209916	1		
SIZE	-0.04238	-0.16476	0.213421	1	
BE_ME	0.02251	0.0726	-0.06624	-0.53266	1

### 3. Econometric Method

In this paper, multivariate linear regression analysis is employed to explore the relationship between foreign ownership and firm characteristics. The estimated equation is a standard linear regression model as follows.

$$y_{i,t} = \alpha + \beta X_{i,t} + \varepsilon_{i,t}$$

where  $y_{i,t}$  denotes the stock return of firm  $i$  at time  $t$ ;  $X_{i,t}$  is a vector that represents liquidity measure and other control variables at time  $t$ ; and  $\varepsilon_{i,t}$  is the error term.

Following the method of Fama and French (1992) which has been used widely in previous studies (Aitken & Comerton-Forde 2003; Beaver & Ryan 2000; Datar et al. 1998), other control variables in the model are firm size, book to market ratio and the firm beta.

The existence of monthly seasonal effects in stock returns is now well established in the empirical finance literature (Heston & Sadka 2008). It normally manifests as the well-known January effect. To this end, we also take into account of the January effect in our analysis.

In the first approach, we estimate regressions on a year-by-year basis. The advantage of this approach is that every year we can compare the differences in the result. The disadvantage of these regressions is that they make no use of the time-series information. In the second approach, we use panel data regressions. To ensure the validity of the results, we also conduct several robustness checks. For example, we run the above regressions with different year.

#### 4. Empirical Results

We first examine the influence of liquidity on the cross-section of stock returns without any other control variables and then gradually adding other control variables.

Table 4 reports the regression results. The liquidity measure is positive and significant in all regressions. This is different from the results of most of the current papers considering this relationship in the literature using data from developed markets. Moreover, beta is negatively and significantly correlated with stock returns and this is consistent with the theory.

**Table 4 Regression results for the whole sample**

Variable	C	TURNOVER	BE_ME	SIZE	BETA
Coefficient	-0.023181	2.525306	0.000886		
t-Statistic	-8.957115	14.01836	0.320899		
Prob.	0	0	0.7483		
Coefficient	-0.016775	2.5232		-0.000491	
t-Statistic	-0.607063	13.85169		-0.210018	
Prob.	0.5438	0		0.8337	
Coefficient	-0.021586	2.524018	0.000805	-0.00013	
t-Statistic	-0.638574	13.85196	0.247165	-0.047335	
Prob.	0.5231	0	0.8048	0.9622	
Coefficient	-0.034823	2.730798	0.001701	0.002943	-0.025934
t-Statistic	-1.028586	14.5257	0.522918	1.036895	-4.299214
Prob.	0.3037	0	0.6011	0.2999	0

Examining seasonality in stock returns is motivated by Eleswarapu and Reinganum (1993) and Datar et al. (1998), among others. Chui and Wei (1998) examine seasonality in the context of size, book-to-market and beta for stock markets in the Pacific Basin region and Chan & Faff (2003) in Australia. To account for the well known January seasonality effect and to compare the results with the sample with January data, we run

regressions without January data. Table 5 reports the regression results without January data. The results are not much different for the return impact of liquidity. We can see that liquidity measure is positive and significant in most of the regressions.

**Table 5 Regressions Results without January data**

Variable	C	TURNOVER	BE_ME	SIZE	BETA
Coefficient	-0.024303	2.459456	0.001958		
t-Statistic	-8.895904	13.31514	0.666799		
Prob.	0	0	0.505		
Coefficient	0.003487	2.440747		-0.002239	
t-Statistic	0.119503	13.06466		-0.907825	
Prob.	0.9049	0		0.364	
Coefficient	-0.001022	2.441077	0.000758	-0.001902	
t-Statistic	-0.028614	13.06396	0.218971	-0.653681	
Prob.	0.9772	0	0.8267	0.5134	
Coefficient	-0.016974	2.680903	0.001757	0.001749	-0.030523
t-Statistic	-0.474869	13.90937	0.508376	0.583758	-4.809477
Prob.	0.6349	0	0.6112	0.5594	0

In addition, we re-run the above regressions for the month of January only. Table 6 reports the results of the regressions. We find that there is no difference when we separate the data for January for the impact of liquidity as the liquidity measure is still positively correlated with return in all regressions. However, size is reported to significantly and positively affect stock return in January.

**Table 6 Regression results for January data only**

Variable	C	TURNOVER	BE_ME	SIZE	BETA
Coefficient	-0.02315	4.346436			
t-Statistic	-4.01435	5.002484			
Prob.	0.0001	0			
Coefficient	-0.01942	4.294825	-0.00497		
t-Statistic	-2.3078	4.915038	-0.61048		
Prob.	0.0217	0	0.542		

Coefficient	-0.23348	4.568212	0.005434	0.017529	
t-Statistic	-2.25116	5.195371	0.569724	2.070709	
Prob.	0.0251	0	0.5693	0.0392	
Coefficient	-0.22764	4.409607	0.004699	0.016078	0.013
t-Statistic	-2.18541	4.842252	0.489168	1.839784	0.677411
Prob.	0.0296	0	0.6251	0.0667	0.4986

Although Fama and French (1992) argue that systematic risk is not priced in their sample, Jagannathan and Wang (1996), Amihud et al. (1992) (1993) and Kothari et al. (1995) note otherwise. As the debate about the significance of beta is far from over, we also control for beta in our regressions while examining the influence of the liquidity variable. We find that, the coefficient for beta is negative and significant in our regressions. Hence, beta is likely to be priced in our sample with and without controlling for January effect.

Table 7 report the regression results in different quintiles. We find that turnover variable is positive and significant in all regressions. In addition, beta is also positive and significant in most of the regressions and the exceptions are in the lowest and second quintiles.

**Table 7 Regression results for different quintiles**

Variable	Coefficien	t-Statistic	Prob.
First Quintile			
C	0.267598	0.884775	0.3766
TURNOVER	1.649062	4.497506	0.0000
BE_ME	-0.002024	-0.282972	0.7773
SIZE	-0.024227	-0.890362	0.3736
BETA	-0.014074	-0.833422	0.4049
Second Quintile			
C	-0.607923	-1.385737	0.1663
TURNOVER	2.775545	8.634975	0.0000
BE_ME	-0.000771	-0.148404	0.8821
SIZE	0.053021	1.376265	0.1692
BETA	-0.019680	-1.285778	0.1990
Third Quintile			
C	-0.868374	-1.624943	0.1046
TURNOVER	2.837000	6.479612	0.0000
BE_ME	0.007847	0.912103	0.3620
SIZE	0.075083	1.639531	0.1016
BETA	-0.040000	-2.896223	0.0039

Fourth Quintile			
C	-0.353779	-1.429331	0.1534
TURNOVER	6.110150	10.38465	0.0000
BE_ME	0.006222	0.714692	0.4750
SIZE	0.028719	1.379440	0.1682
BETA	-0.030600	-2.910958	0.0037
Fifth Quintile			
C	0.006646	0.048713	0.9612
TURNOVER	3.049015	4.450866	0.0000
BE_ME	-0.012464	-0.937897	0.3486
SIZE	0.000686	0.065596	0.9477
BETA	-0.033785	-2.293577	0.0221

We also re-run the above regressions on a year by year basis. Table 8 reports the regression results for 2007, 2008, 2009 and 2010. The results indicate that liquidity positively and significantly affect stock returns for all years. Book to market, size and beta do not have any significant impact on stock returns for the year 2007 but all of these firm attributes have significant impacts on stock returns for 2008. Book to market and size have positive impacts while beta have negative impacts. Again, in 2009, only liquidity has a positive impact while the other firm attributes do not. In 2010, beta has a negative impact on stock returns.

**Table 8 Regression results for different year**

Variable	Coefficien	t-Statistic	Prob.
<b>2007</b>			
C	-0.08264	-1.16567	0.244
TURNOVER	4.259278	8.000968	0
BE_ME	0.013576	0.616428	0.5378
SIZE	0.005616	0.997664	0.3187
BETA	-0.00587	-0.50597	0.613
<b>2008</b>			
C	-0.20217	-2.88674	0.004
TURNOVER	4.202396	4.910985	0
BE_ME	0.026126	3.920121	0.0001
SIZE	0.015007	2.570984	0.0103
BETA	-0.05756	-5.00945	0
<b>2009</b>			
C	-0.00464	-0.06856	0.9454
TURNOVER	1.356856	5.314094	0
BE_ME	0.003233	0.555807	0.5785
SIZE	0.000687	0.121835	0.9031
BETA	-0.00176	-0.15409	0.8776
<b>2010</b>			
C	0.105454	1.635622	0.1026

TURNOVER	1.474904	5.014921	0
BE_ME	0.00051	0.067799	0.946
SIZE	-0.00797	-1.50824	0.1322
BETA	-0.02719	-2.55942	0.0108

In more US recent work, Lee and Swaminathan (2000) discuss the relationship between turnover and momentum. In particular, they argue that price momentum might induce a relation between turnover and expected returns that has little to do with liquidity. As such, this suggests the need to control for any momentum effects before any strong conclusions are drawn on share turnover as a (priced) liquidity factor. To this end, Chordia et al. (2001) control for momentum effects and find that there is still a significant cross-sectional relationship between returns and turnover.

Table 9 presents the regression results when we include momentum effect. We add a momentum variable which is previous returns. The results indicate that stock returns are dependent of previous returns and there is a strong price momentum effect in Vietnam stock markets. Liquidity also has a positive and significant effect on stock return after controlling for momentum. This is consistent with the previous study of Chordia et al. (2001). In addition, beta has negative and significant effect on stock return. However, size variable is insignificant.

**Table 9 Regression results with momentum variable included**

Variable	C	MOMENTUM	TURNOVER	BE_ME	SIZE	BETA
Coefficient	-0.0210	-0.0839	2.6744	0.0016	0.0019	-0.0303
t-Statistic	0.0337	0.0168	0.1849	0.0033	0.0028	0.0062
Prob.	0.5346	0.0000	0.0000	0.6344	0.4958	0.0000

## 5. Conclusion

Liquidity and stock returns nexus is an interesting topic on its own merits. By using a new dataset, the paper attempts to provide the answer to the question of whether liquidity affects stock returns in Vietnam during financial crisis. In this paper, we use share turnover to proxy for liquidity and examine the role of liquidity in explaining stock returns in the context of Fama and French cross-sectional framework for the Vietnam stock market. We also enhance the robustness of the analysis by considering seasonality and introducing various regressions.

The main finding is that liquidity strongly and positively affects stock returns during the current financial crisis and this is inconsistent with most of the papers in the literature investigating the relationship between stock return and liquidity in developed market. The analysis also reports that this relationship is significant when we include momentum in our regressions. We also find that size has no significant pricing role in most of the regressions.

The findings of the paper show a positive relationship between liquidity and stock returns. It demonstrates the importance of liquidity in stock markets. The policy implications of the findings of the paper are twofold. Firstly, liquidity is an important factor in asset pricing. Therefore, policy makers in emerging market should ease the barriers for firms to enhance liquidity. Vietnamese policy makers should lower the trading costs for traders to increase liquidity. Secondly, liquidity is more important during time of financial crisis as liquidity helps to improve stock returns.

## References

- Admati, A.R. & Pfleiderer, P.C. 2009, 'The "Wall Street Walk" and Shareholder Activism: Exit as a Form of Voice', *Review of Financial Studies*, vol. 22, no. 7, pp. 2445-2485.
- Aitken, M. & Comerton-Forde, C. 2003, 'How should liquidity be measured?', *Pacific-Basin Finance Journal*, vol. 11, no. 1, pp. 45-59.
- Amihud, Y., Christensen, B.J. & Mendelson, H. 1992, 'Further Evidence on the Risk-Return Relationship', *Working Paper*.
- Amihud, Y. & Mendelson, H. 1980, 'Dealership market : Market-making with inventory', *Journal of Financial Economics*, vol. 8, no. 1, pp. 31-53.
- Amihud, Y. & Mendelson, H. 1986, 'Asset pricing and the bid-ask spread', *Journal of Financial Economics*, vol. 17, no. 2, pp. 223-249.
- Amihud, Y. & Mendelson, H. 1989, 'The Effects of Beta, Bid-Ask Spread, Residual Risk, and Size on Stock Returns', *The Journal of Finance*, vol. 44, no. 2, pp. 479-486.
- Amihud, Y., Mendelson, H. & Lauterbach, B. 1997, 'Market microstructure and securities values: Evidence from the Tel Aviv stock exchange', *Journal of Financial Economics*, vol. 45, no. 3, pp. 365-390.
- Baker, M. & Stein, J.C. 2004, 'Market liquidity as a sentiment indicator', *Journal of Financial Markets*, vol. 7, no. 3, pp. 271-299.
- Beaver, W.H. & Ryan, S.G. 2000, 'Biases and lags in book value and their effects on the ability of the book-to-market ratio to predict book return on equity', *Journal of Accounting Research*, vol. 38, no. 1, pp. 127-148.
- Bekaert, G. & Harvey, C.R. 1997, 'Emerging equity market volatility', *Journal of Financial Economics*, vol. 43, no. 1, pp. 29-77.
- Brennan, M.J., Chordia, T. & Subrahmanyam, A. 1998, 'Alternative factor specifications, security characteristics, and the cross-section of expected stock returns', *Journal of Financial Economics*, vol. 49, no. 3, pp. 345-373.
- Brennan, M.J. & Subrahmanyam, A. 1996, 'Market microstructure and asset pricing: On the compensation for illiquidity in stock returns', *Journal of Financial Economics*, vol. 41, no. 3, pp. 441-464.
- Chan, H.W. & Faff, R.W. 2003, 'An investigation into the role of liquidity in asset pricing: Australian evidence', *Pacific Basin Finance Journal*, vol. 11, no. 5, pp. 555-572.
- Chordia, T., Subrahmanyam, A. & Anshuman, V.R. 2001, 'Trading activity and expected stock returns', *Journal of Financial Economics*, vol. 59, no. 1, pp. 3-32.
- Chui, A.C.W. & Wei, K.C.J. 1998, 'Book-to-market, firm size, and the turn-of-the-year effect: Evidence from Pacific-Basin emerging markets', *Pacific-Basin Finance Journal*, vol. 6, no. 3-4, pp. 275-293.
- Datar, V.T., Y. Naik, N. & Radcliffe, R. 1998, 'Liquidity and stock returns: An alternative test', *Journal of Financial Markets*, vol. 1, no. 2, pp. 203-219.
- Easley, D., Hvidkjaer, S. & O'Hara, M. 2002, 'Is information risk a determinant of asset returns?', *Journal of Finance*, vol. 57, no. 5, pp. 2185-2221.
- Easley, D. & O'Hara, M. 2004, 'Information and the cost of capital', *Journal of Finance*, vol. 59, no. 4, pp. 1553-1583.
- Edmans, A. 2009, 'Blockholder Trading, Market Efficiency, and Managerial Myopia', *Journal of Finance*, vol. 64, no. 6, pp. 2481-2513.

- Eleswarapu, V.R. & Reinganum, M.R. 1993, 'The seasonal behavior of the liquidity premium in asset pricing', *Journal of Financial Economics*, vol. 34, no. 3, pp. 373-386.
- Estrada, J. 2000, 'The cost of equity in emerging markets: a downside risk approach', *Emerging Markets Quarterly*, vol. 4, pp. 19-30.
- Fama, E.F. & French, K.R. 1992, 'The Cross-Section of Expected Stock Returns', *The Journal of Finance*, vol. 47, no. 2, pp. 427-465.
- Fang, V.W., Noe, T.H. & Tice, S. 2009, 'Stock market liquidity and firm value', *Journal of Financial Economics*, vol. 94, no. 1, pp. 150-169.
- Glosten, L.R. & Harris, L.E. 1988, 'Estimating the components of the bid/ask spread', *Journal of Financial Economics*, vol. 21, no. 1, pp. 123-142.
- Haugen, R.A. & Baker, N.L. 1996, 'Commonality in the determinants of expected stock returns', *Journal of Financial Economics*, vol. 41, no. 3, pp. 401-439.
- Heston, S.L. & Sadka, R. 2008, 'Seasonality in the cross-section of stock returns', *Journal of Financial Economics*, vol. 87, no. 2, pp. 418-445.
- Holmstrom, B. & Tirole, J. 1993, 'Market Liquidity and Performance Monitoring', *Journal of Political Economy*, vol. 101, no. 4, pp. 678-709.
- Hu, S.-y. 1997, 'Trading Turnover and Expected Stock Returns: The Trading Frequency Hypothesis and Evidence from the Tokyo Stock Exchange', *Working Paper*.
- Jacoby, G., Fowler, D.J. & Gottesman, A.A. 2000, 'The capital asset pricing model and the liquidity effect: A theoretical approach', *Journal of Financial Markets*, vol. 3, no. 1, pp. 69-81.
- Jagannathan, R. & Wang, Z. 1996, 'The conditional CAPM and the cross-section of expected returns', *Journal of Finance*, vol. 51, no. 1, pp. 3-53.
- Jun, S.-G., Marathe, A. & Shawky, H.A. 2003, 'Liquidity and stock returns in emerging equity markets', *Emerging Markets Review*, vol. 4, no. 1, pp. 1-24.
- Khanna, N. & Sonti, R. 2004, 'Value creating stock manipulation: feedback effect of stock prices on firm value', *Journal of Financial Markets*, vol. 7, no. 3, pp. 237-270.
- Kothari, S.P., Shanken, J. & Sloan, R.G. 1995, 'Another Look at the Cross-Section of Expected Stock Returns', *Journal of Finance*, vol. 50, no. 1, pp. 185-224.
- Kyle, A.S. & Vila, J.-L. 1991, 'Noise Trading and Takeovers', *RAND Journal of Economics*, vol. 22, no. 1, pp. 54-71.
- Lam, K.S.K. & Tam, L.H.K. Forthcoming, 'Liquidity and asset pricing: Evidence from the Hong Kong stock market', *Journal of Banking & Finance*, vol. In Press, Corrected Proof.
- Lee, C.M.C. & Swaminathan, B. 2000, 'Price Momentum and Trading Volume', *The Journal of Finance*, vol. 55, no. 5, pp. 2017-2069.
- Levine, R. 1996, 'Stock Markets: A Spur to Economic Growth', *Finance & Development*, vol. March.
- Levine, R. & Zervos, S. 1998, 'Stock markets, banks, and economic growth', *American Economic Review*, vol. 88, no. 3, pp. 537-558.
- Longin, F. & Solnik, B. 1995, 'Is the correlation in international equity returns constant: 1960-1990?', *Journal of International Money and Finance*, vol. 14, no. 1, pp. 3-26.

- Marshall, B.R. 2006, 'Liquidity and stock returns: Evidence from a pure order-driven market using a new liquidity proxy', *International Review of Financial Analysis*, vol. 15, no. 1, pp. 21-38.
- Marshall, B.R. & Young, M. 2003, 'Liquidity and stock returns in pure order-driven markets: evidence from the Australian stock market', *International Review of Financial Analysis*, vol. 12, no. 2, pp. 173-188.
- Maug, E. 1998, 'Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control?', *Journal of Finance*, vol. 53, no. 1, pp. 65-98.
- Palmiter, A.R. 2002, 'Mutual Fund Voting of Portfolio Shares: Why Not Disclose? ', *Cardozo Law Review*, vol. 23, no. 1419-1491.
- Subrahmanyam, A. 2001, 'Feedback from Stock Prices to Cash Flows', *Journal of Finance*, vol. 56, no. 6, pp. 2389-2413.
- Vayanos, D. 1998, 'Transaction costs and asset prices: A dynamic equilibrium model', *Review of Financial Studies*, vol. 11, no. 1, pp. 1-58.