Analyzing the Effect of Capital Gains and Stock Liquidity on Stock Expected Return

Mohammad Hassani[1]

Head of Accounting & Finance Department, Islamic Azad University-Tehran North Branch, Iran

Narges Nabizadeh

M.Sc. in Business Management (Finance), Islamic Azad University-Tehran North Branch, Iran

Abstract

This research investigated the effect of capital gains and stock liquidity on stock expected return. The stock expected return is measured based on capital assets pricing model. Stock liquidity is measured by stock trading turn over and capital gain is measured by the return made through the changes in stock prices. In order to control other factors that may have an effect on stock expected return, some variables like market to book ratio, size, dividend payout ratio, leverage and profitability have been studied. Research hypotheses tested using regression model based on pooled data. Research sample includes 172 companies listed in Tehran Stock Exchange over the period 2010 – 2014. Results showed that there is not any significant relationship between capital gains and stock expected return. But the results found that stock liquidity has a significant and positive effect on stock expected return. In fact, stock expected return is a direct function of changes in stock liquidity.

Keywords: Capital Gains, Stock Liquidity and Stock Expected Return, Capital Assets Pricing Model, Stock Trading Turn Over.

Introduction

Risk and return are of critical factors in securities market investment decisions. Investors are always looking for investment opportunities to maximize return on investment (ROI) and gains; thus, the investors need some means to predict an investment

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[1] *Corresponding author's email: m_hassani@iau-tnb.ac.ir*

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return and profit. An investor requires some information for return-focused investment such that the greater the information is credited the closer to the achievement. Rate of return is a concept necessitating more accurate estimation of effective factors and more real calculated values. Accuracy of determining return effective factors, given the unknown real value, is obtained through the effects of factor implementation and to what extent the determined factors may reflect the risk of economic unit.

Stock return is referred to the owner's revenues. To measure a stock return, it requires estimation of any change in pricing and its cash flow within the investment period. A return consists of two constituents; first, return results from dividend payout ratio or cash; and the second, a return from stock price change in capital gains. On the other side, investors always expect return on stock investment; this return is called stock expected return. Expected return, indeed, anticipates shareholder return of a stock over a given period proportional to the systematic risk of the very stock. Some return expectations of investors may be formed due to achieving capital gains. In addition, assets liquidity is of investment fundamental issues. Liquidity is a complex notion, which is never directly observed. There are several different definitions and implications related to the liquidity. Liquidity, as an asset in the simplest definition, is interpreted as market potential in attracting huge volume of transactions without causing severe price fluctuations. Asset liquidity necessarily demands market liquidity. Liquid asset (liquid markets) is deemed desirable due to the benefits such as better allocation and information efficiency. Stock liquidity is identified through the factors including firm trading turnover, the number of traded shares, the number of traded days, repeat deals, number of buyers, and the like (Saeidi and Afkhami, 2012).

It is critically important to examine risk and return effective factors. Research results indicate that liquidity is one of stock return effective factors; furthermore, since stock liquidity is one major concern of investors in Tehran stock exchange, it is significant to investigate this issue. Another research significance element on the relationship between liquidity and return is that the relationship between the two variables is maintained; however, it is not yet cleared. On the other hand, capital gains are provided as gains from stock price changes, which are anticipated to influence shareholders' expected return. According to the aforementioned and regarding research significance, the effect of capital gains and stock liquidity on stock expected return was analyzed.

Statement of the problem

It is required to simultaneously consider risk and return for investment decisions of securities market. In fact, risk and return are the two main foundations of investment decision making; further, the highest return given the least risk has always been a suitable investment measure (Raei and Saeidi, 2004).

Low-risk and high-return stock companies recognition as well as excess return gaining are approximately primary goals of any rational investment in company stocks. Therefore, adequate attention to the risk level and appropriate investment return are the conquest requirements for any investment. Return refers to the shares of income allotted to the owner. To obtain stock returns, price change and cash flow are estimated over

investment period. Return is composed of two parts including dividend yield (in cash or share) and stock price change return (capital gains) (Saeidi and Afkhami, 2012). Meanwhile, investors always anticipate returns on investment referred as expected return. Expected return is indeed the shareholder expected return of stock holding in a given period proportionate to the stock systematic risk.

Asset expected return rate shows lost returns under equal risk arising from acquisition of assets. Asset liquidity is one of the major investment issues. It significantly contributes in assets valuing. Financial markets are provided a variety of investment instruments given market depth and breadth where investors decide on the considered assets with regard to the investment risk and return. Liquidity is the ability of quick purchase or sell of high volume of securities at low cost without causing drastic change in asset's price. Stable price means asset's price is stable from order to purchase. Liquidity is a multi-dimensional measure and since there is yet no unique benchmark covering all liquidity dimensions; hence, inevitably, several singular criterion are used each representing a liquidity dimension. So far, many alternative variables are introduced for liquidity including transaction value, size, volume, turnover, as well as bid–offer spread (Bigdeli and Saranj, 2008).

Liquidity is a function of quick trading at high securities turnover and low price i.e. asset's price undergoes no drastic change from order to purchase (Liu, 2006). An investment low liquidity is where the fair price is not quickly attained. Stock liquidity influences investment decisions portfolio. To state the matter differently, rational investors demand higher risk for low liquidity stocks and anticipate larger expected return. Therefore, there is a negative (adverse) relationship between stock liquidity and return at microstructure levels, as low liquidity equals higher risk; and thus, higher risk is followed by larger returns. However, at macro level, it is expected that the higher the stock liquidity, the more it embraces new data for stock gradual change, which consequently causes higher returns (Bortolotti et al, 2006). Although, liquidity significantly contributes in decision- making; it is still infant in objectively and quantitatively measurement. Liquidity, as a stock return determinant factor, was introduced in the mid-1980s. Some authors like Baker and Stein (2003) found a positive relationship between stock return and liquidity; while, others like Omri, Zayani, and Loukil (2004) announced a negative relationship. However, studies still keep going, as the results demonstrate that liquidity influences asset return; and further, it has always been interested by investors (Yahyazade et al, 2010).

High liquid stocks are naturally low-risk holding, as they are quick liquid. Therefore, investors, due to risk aversion nature, try to pick up high liquid stocks in order to quickly sell the asset without causing drastic change in asset's price, if necessary (Saeidi and Dadar, 2010). The less liquid the stock, the more investors are attracted; unless the shareholder gains higher return (Geoffrey et al, 2003). In fact, lack of liquidity may negatively influence stock value (Omri et al, 2006). The issue of liquidity in Tehran Stock Exchange is the major concern for investors. The investors in well-known stocks are not as much worried for stock liquidity as in Tehran Stock Exchange; hence, it is critically significant to investigate Tehran Stock Exchange.

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According to the aforementioned, the present research analyzes the effect of capital gains and stock liquidity on stock expected return. However, it is largely associated to the concept of information asymmetry. Information asymmetry referred a situation where one party has more information than the other. Lack of information asymmetry among capital market traders is considered a key mechanism for decreased cost of capital and increased market efficiency (Milgrom and Glosten, 1985; Lang and Lundholm, 1996; Welker, 1995). According to theoretic analyses and empirical evidences, increased information asymmetry or imbalance is related to the decreased number of traders, high costs of transactions, low liquidity of securities, and low trading turnover. Moreover, results also demonstrate that information asymmetry significantly influences excess return. Otherwise, increased (decreased) information asymmetry, in parallel, may lead to increased (decreased) excess returns gained in market. Theoretically, it intensifies market irregularities showing market inefficiency (Hasani and Bayat, 2013). Therefore, information asymmetry may affect firms' stock trading or endure the effect. Of important issue of market trading is a security liquidity, which is implied easily trading of a security at a particular market. In case of high liquidity securities at market, investors are enabled to easily and fairly trade their securities; whereas, low liquidity securities are hardly traded.

Research background

Amihud and Mendelson (1986), Brennan and Subrahmanyam (1996), Brennan et al (1998), and Fiori (2000) found that low liquidity stock and high risk liquidity cause larger returns. Amihud and Mendelson (1988) showed that there is a negative relationship between assets liquidity and asset expected return. Datar et al (1988) discovered that expected return is raised through long-term stock holding (low liquidity) or less trading turnover. Brennan and Subrahmanyam (1996) concluded that illiquidity measure have a positive effect on stock return. Brennan et al (1998) represented that stock trading turnover has a negative, significant effect on risk-based adjusted stock returns. Amihud (2002) revealed a negative relationship between stocks expected returns and liquidity. Easley and O'Hara (2002) realized that high-risk information firms may benefit larger expected returns. Pastor and Stambaugh (2003) uncovered a positive relationship between stock expected return and stock liquidity risk. Baker and Stein (2003) came upon a positive relationship between stock return and stock liquidity. Omri et al (2004) found out that stock return is negatively related to liquidity. Jiang et al (2005) showed that firms with large unknown information, on average, would gain less future returns. Grinblatt and Han (2005) figured out a positive relationship between capital gains and stock return. Controlling beta, size, and book to market value ratio, Nguyen et al (2005) deduced that trading turnover may negatively and significantly influence returns, which is consistent with liquidity effects on returns. Dey (2005), regarding stock trading turnover as stock liquidity factor, found out that investors expect more returns from markets with higher stock trading turnovers. Fujimoto and Masahiro (2006) achieved to the positive relationship between illiquidity and stock return fluctuations. Zhang (2006) concluded that the more uncertain information causes higher expected return following good news, and lower expected returns following bad news. Ogneva (2008) expressed a negative significant relationship between realized returns and accrual quality once cash flow shocks are controlled. Yuhdin (2009) showed that the relationship between stock excess

return and liquidity relative measure level is negative; however, it is nonlinear. The results also shed light to a negative relationship between liquidity relative measure variability and stock excess return. Akbas et al (2010) discovered a positive relationship between illiquidity and stock expected return. Doroshenko (2011) observed a positive relationship between illiquidity and stock expected return. Lin et al (2012) explained that firm liquidity and market liquidity are directly related to stock excess returns following the effects of market risk, size, and book to market ratio factors were adjusted. Shieh et al (2012) provided liquidity and stock momentum effect as the major effective factors of stock price change; while, stock market value and book to market ratio play no significant roles in stock price changes. Lei et al (2013) presented a positive relationship between capital gains and stock expected returns; furthermore, they also found out that there is a positive relationship between illiquidity and stock expected return.

Salimpour (2005) observed no significant relationship between stock illiquidity and investors' excess returns. Yahyazade and Khoramdin (2008) showed that illiquidity and firm size negatively influence stock excess return; whereas, market excess return and book-to-market ratio have a positive effect on stock excess return. Ahmadpour and Rasaeiyan (2006) discovered no significant relationship between stock bid–offer spread (stock liquidity measure) and stock return fluctuations. Mehrani and Rasaeiyan (2009) realized that there is no significant relationship among stock return and bid–offer spread, firm stock turnover, monetary trading turnover, and the number of trading. The results also demonstrated a negligible significant relationship between stock return and the number of trading days in percent. Yahyazade far et al (2010) discovered a positive, significant relationship between stock turnover ratio and stock return. Sirani et al (2011) presented that market risk, firm size, and (free) float are significantly associated to return; while, book-to-market ratio and liquidity risk showed no significant relationship with return. Hasani and Salamati (2012) demonstrated that there is a significant relationship between firm performance and liquidity measure of stock trading turnovers. On the other side, there was seen no significant relationship between firm performance measure and Amihud illiquidity measure.

According to Saeidi and Afkhami (2012), free float (%) is not significantly associated to risk and return; despite the fact that the significant relationship between free float percentage and liquidity rank was maintained. Hassani and Haratinik (2014) represented that stock liquidity measures including stock trading turnovers and the number of stock trading negatively influence information asymmetry; however, it is not statistically significant. In addition, stock liquidity risk positively and significantly affects information asymmetry, too. Hashemi et al (2013), using stock trading turnover ratio, bid–offer spread, and false choice of bid–offer spread as liquidity measures, demonstrated that different levels of liquidity differently influence stock mere return through portfolio of sample firms based on stock liquidity. Foroughi and Matinnezhad (2014) showed that size, book-to-market ratio, and leverage have a positive, significant effect on expected return; further, assets growth rate showed a negative, significant effect on expected returns.

Research hypotheses

Research main hypotheses are as follows:

1. There is a significant relationship between capital gains and stock expected return.

2. There is a significant relationship between stock liquidity and stock expected return.

Regarding that stock return is of challenging concept in stock market studies influenced by different factors; thus, other sub-hypotheses are introduced assuming the effect of other factors on stock expected return as follows:

1. There is a significant relationship between market to book ratio and stock expected return.

2. There is a significant relationship between firm size and stock expected return.

3. There is a significant relationship between dividend payout ratio and stock expected return.

4. There is a significant relationship between leverage and stock expected return.

5. There is a significant relationship between return on assets and stock expected return.

Research model and variables

Research model is mathematically expressed by the following equation. The model indicates the effect of capital gains and stock liquidity on stock expected return given the effect of potential factors:

$$E(R_{i,t}) = \alpha + \beta_1 CG_{i,t} + \beta_2 LIQ_{i,t} + \beta_3 MTB_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 DPO_{i,t} + \beta_6 LEV_{i,t} + \beta_7 ROA_{i,t} + \varepsilon_{i,t}$$

$E(R_{i,t})$ is stock expected return.

Beta coefficient is initially obtained using the following model. Next, once beta was calculated and substituted in capital assets pricing model and given asset return and risk-free return data (long-term bank deposit interest rate approved by Central Bank of Iran), stock expected return was measured.

$$E(R_{i,t}) = R_f + \beta_i{}^*(R_{m,t}-R_f)$$

$$R_{i,t} = \alpha + \beta_i R_{m,t} + \varepsilon_{i,t}$$

$CG_{i,t}$: capital gains

Capital gains are, indeed, stock price change return measured by the difference ratio of two successive stock prices to the earlier stock price.

$LIQ_{i,t}$: stock liquidity.

The measure in this research is stock turnover calculated using the ratio of the number of traded shares to the total shares.

$MTB_{i,t}$: market to book ratio (stock market to equity book ratio)

$SIZE_{i,t}$: size (natural log of stock market value)

$DPO_{i,t}$: stock dividend payout ratio (dividend payout to earnings per share ratio)

$LEV_{i,t}$: leverage (debt book value to equity book value ratio)

$ROA_{i,t}$: return on assets (operating profit minus tax to assets book ratio)

Research methodology

This is an applied research in term of purpose, and a regression descriptive study according to the method. Moreover, it is an ex post facto research concentrated on historical data. Theoretical background data were collected through library method; and quantitative data were gathered through document mining. Research subject domain focuses on financial management framework and stock market decisions. Research geographical area is Tehran Stock Exchange; in other words, research statistical population included the companies listed in Tehran Stock Exchange. Research samples were selected through systematic elimination and screening sampling methods. Research investigated a 5-year period from 2009-2013.

Inclusion criteria for screening were companies already entered stock before 2009, which are still active until 2013; stable financial year within study period; and few trading lags over understudied period due to stock return data availability over the financial period. Finally, 172 of the listed companies in Tehran Stock Exchange were selected as research sample analyzed and tested within a 5-year period.

Research findings

Descriptive statistics of research variables are illustrated in Table 1. Results showed that investors, in understudied firms, expect about 18.4% returns- an optimistic return as it is positive. However, data of real return are not represented in descriptive statistics table, studying the data reveals that real return was 12.9%; comparing real return with stock expected return may indicate optimistic anticipations of the investors from expected returns respecting to stock market terms. Stock price of each period, compared to the previous, increased around 47.7% as firm gains of stock investment. The positive value also confirms stock price increasing trend in understudied periods indicating that stock firms, within understudied period, encountered stock price positive growth and market positive response such that investors gained from stock price positive changes. The

number of shares traded, on average, was around 22% of total current issued share. The higher ratio means that investors more interestedly participated in stock purchase and sell. It consequently influenced stock trading liquidity and led to the prosperity of stock market trading because of positive perspective of market participants to the given stock. It is clear that the lower ratio may also uncover outcomes of investors' negative perspectives to stock trading in stock market; keeping negative attitude causes market negative response (reaction), and thus, stock market trading depression.

Table 1: Descriptive statistics of research variables

Description	Variables							
	ER	CG	LIQ	MTB	SIZE	DPO	LEV	ROA
Mean	0.183557	0.476617	0.220137	2.344146	27.04179	1.119595	0.631207	0.306981
Median	0.174835	0.136530	0.097710	1.906535	26.93092	0.562545	0.640110	0.049830
Maximum	0.199980	7.315700	2.353960	95.33333	32.09589	23.30534	3.060400	10.27104
Minimum	0.155090	-0.849240	1.00E-05	-120.7767	23.75822	-12.74177	0.040550	-1.682080
Standard deviation	0.014384	1.136137	0.338973	9.738768	1.601676	3.158953	0.265981	0.911419
Skewness	-0.056349	2.875907	3.285053	-5.234158	0.518665	3.482690	2.931885	6.422498
Kurtosis	1.197143	14.39614	16.02078	111.9935	2.863281	23.52607	27.85960	56.90007
Observations	448	448	448	448	448	448	448	448

Stock market value, in understudied period, was, on average, 2.34 times the book value of equity investment funds. The size in understudied firms is approximately 27 logarithmic units. It suggests the large size and volume of stock trading. Cash dividend per share was, on average, 1.12 times earnings per shares meaning that understudied firms have distributed a figure, in cash, higher than the declared earnings per shares among investors. On average, debts were about 63% of the equity. Assets return approximately obtained 30.7%. It represents a proper assets return to generate earnings.

According to the obtained results, stock expected return variables and market-to-book ratio represent negative skewness; while, variables of capital gains, stock liquidity, size, stock dividend payout ratio, leverage, and return on assets show positive skewness. Respecting that skewness and kurtosis values of all variables diverge in normal distribution; it is concluded that no variables follow normal distribution.

Table 2 represents reliability test results of research variables using Levin, Lin, and Chu unit root test based on t- statistic and p value. According to the values of t-statistic and the probability (less than 5% error), all variables are reliable. As a result, there is no unreliability and false root is not true for data analysis.

Table 2: Reliability testing results of research variables

Description	Variables							
	ER	CG	LIQ	MTB	SIZE	DPO	LEV	ROA
T- statistic	-93.2113	-53.4551	-44.9418	-16.3246	-3801.96	-1660.03	-3.98245	-16.1835
P value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Correlation of research variables is examined through Pearson correlation coefficient, as shown in Table 3. Pearson correlation coefficient, indeed, shows paired correlation between the variables, which is significant regarding t-statistic and p value.

Table 3: Results of correlation between research variables

ROA	LEV	DPO	SIZE	MTB	LIQ	CG	RE	p- value correlation
							1.000000 -----	RE
						1.000000 -----	0.042981 0.3641	CG
					1.000000 -----	0.200720 0.0000	0.230906 0.0000	LIQ
				1.000000 -----	0.182301 0.0001	0.115071 0.0148	0.013347 0.7781	MTB
			1.00000 -----	0.01074 0.8205	0.04078 0.3891	0.16198 0.0006	0.13118 0.0054	SIZE
		1.00000 -----	-0.0300 0.5265	-0.00534 0.9103	-0.02494 0.5985	-0.05419 0.2523	-0.02461 0.6033	DPO
	1.0000 -----	-0.0324 0.4938	-0.2654 0.0000	-0.03986 0.4000	0.19371 0.0000	0.03016 0.5242	0.05905 0.2122	LEV
1.00000 -----	-.0417 0.3784	-0.0021 0.9638	-0.2205 0.0000	0.02163 0.6479	0.00715 0.8800	-0.02744 0.5623	-0.13221 0.0051	ROA

Given t- statistic and the probability (larger than 5% error), independent variable capital gains showed no significant paired correlation with stock expected return; whereas, independent variable stock liquidity had a positive significant paired correlation with stock expected returns regarding t-statistic and the p-value $< 5\%$. Respecting to control variables, only size and assets return variables showed significant paired correlation to stock expected return regarding t-statistic and the probability of less than 5%; further, paired correlation direction between size and stock expected return is positive; while, paired correlation direction between assets return and stock expected return is negative. Moreover, research results also demonstrated that market-to-book ratio, stock dividend payout ratio, and leverage variables, given t-statistic and the probability of less than 5%, lack significant paired correlation with stock expected return. Multicolinearity controlling is a function of correlation coefficients interested in regression model tests. Theoretically, the strong correlation only among descriptive research variables may lead to multicolinearity problem. Respecting paired correlation coefficients, t-statistic, and p-value, there is a significant correlation seen between paired variables; although, it may not cause multicolinearity problem. Thus, it is possible to simultaneously study research variables.

The main objective the research is to analyze the effect of capital gains and stock liquidity on stock expected returns. Prior to describing research variables test, it is worth

to notify that since stock expected return was necessarily measured by beta systematic risk data; hence, statistically significant beta data were inevitably applied i.e. in observations where firm real stock return, in the given year, showed a statistically significant relationship to stock market return, it was used as significant beta in capital assessment pricing model and stock expected return obtained. Model pre-test results are provided in Table 4.

Table 4: Pre-test results of capital gains and stock liquidity effect model on stock expected return

Test	Statistics	Value	Degree of freedom	Probability
Chow test combining models	F limer	1.018113	(164,276)	0.4441
Hausman test	Chi square	-	-	-

According to research results and based on F-Limer statistic and the probability (larger than 5%), it is proper to apply the pooled, effectless model. Considering that there is no need to testing effects; so, no data were provided. Table 5 represents model final test results. In understudied model, f-Fisher statistic and the probability of less than 5% indicate that the tested regression model has significant linear relationships. Model Durbin-Watson statistic (1.5-2.5) indicates independence of model residuals and lack of autocorrelation among model residuals. Model adjusted coefficient of determination is about 23% revealing that model variables may explain about 23% of stock expected return changes.

According to the findings and regarding t-statistic and the probability of smaller than 5%, capital gains showed no significant relationship with stock expected return. In fact, capital gains represent stock price change return and apparently influence stock return; however, no evidences obtained maintaining the assumption. In other word, stock expected return in Tehran Stock Exchange sample firms is not a significant function of capital gains. In general, research first main hypothesis is rejected.

Moreover, according to the results and given t-statistic and the probability of less than 5%, stock trading turnover is significantly related to stock expected return. Due to the variable positive impact in the model, a direct, significant relationship is observed. Stock trading turnover is extracted through the number traded stocks to the total stock ratio. Stock trading turnover may express stock trading momentum. The larger the ratio is, it means investors are more interested in stock trading. Thus, it influences stock trading liquidity and leads to the prosperity of stock market trading due to positive attitude of market participants to the given stock. As a result, it is expected that stock expected return follows increased stock trading turnover and raises. It is evident that the decreased ratio may reflect investors' negative attitudes to stock trading. If the negative perspective goes on, market would negatively react and cause stock market downturn. In this way, it is expected that stock expected return also decreases. According to the evidences, research second main hypothesis is maintained.

Table 5: Test results of capital gains and stock liquidity effect model on stock expected return

ER: Dependent variable				
Model: cross-sectional regression	Method: Generalized least squares	Asymmetric observations: 448		
Descriptive variables	Coefficients	Standard error	T-statistic	P value
C	0.138148	0.010806	12.78456	0.0000
CG	-0.000567	0.000472	-1.201719	0.2301
LIQ	0.011742	0.001573	7.463096	0.0000
MTB	-3.77E-05	3.98E-05	-0.947610	0.3438
SIZE	0.001538	0.000383	4.015604	0.0001
DPO	7.97E-06	0.000137	0.058138	0.9537
LEV	0.003326	0.002453	1.355928	0.1758
ROA	-0.001900	0.000193	-9.825756	0.0000
Adjusted coefficient of determination	0.232054	F Fisher statistic		20.29605
Durbin-Watson statistic	1.541584	F Fisher p value		0.000000

Given t-statistic and the p-value> 5%, market-to-book ratio showed no significant relationship with stock expected return. Market-to-book ratio implies firms' growth in stock market and shows that to what extent market values firm investment funds. Otherwise, the noted ratio reveals market reaction (response) to the equity book values. Larger market-to-book ratio uncovers market positive view to shareholders' investments in understudied companies; while, the closer the values may be followed by stock market negative response. Obtained results showed no evidences of maintaining the effect of market-to-book ratio on stock expected return. In a better word, stock expected return in Tehran Stock Exchange sample firms is not a significant function of market-to-book ratio.

Respecting to t-statistic and p-value of less than 5%, size is significantly related to stock expected return. As the variable impact factor is positive, a direct significant relationship is observed. Large size signifies stock trading associated turnover in the considered companies. In other word, the larger value implies that investors and stock traders more concern for the given firm stocks; active participation in the firm stock trading results in the prosperity of stock trading and higher turnovers. Evidently, this process results from positive response (perspective) of stock market actors to the firm

relevant events. Therefore, it anticipates that stock expected return follows increased size in the form of stock market value; hence, it naturally increases. On the other side, by reducing the positive attitude to firms' activity trend, current and potential investors are less inclined to stock trading, which causes declined stock trading and less turnover. Hence, it is anticipated that stock expected return decreases, too.

Stock dividend payout ratio, given t-statistic and the p-value larger than 5%, shows no significant relationship with stock expected return. Stock dividend payout ratio indicates management decision-making on dividend payout ratio and represents that to what extent management pay dividend to shareholders based on the adopted decisions. In cases where shareholders receive more dividend, the firm is assumed profitable, which may increase later. As a result, stock expected return is augmented; while, if stock dividend payout ratio reduced, stock expected return would decrease, too. However, on the other side, it is largely influenced by firm investment decisions meaning that if firms have the appropriate means of investment, they would try using dividend funds as an internal funding source to finance the projects; therefore, dividend payout to shareholders is declined. In such condition, if investors and shareholders are informed of future earnings through investments of the considered firms, they would warmly welcome; further, positive stock expected return is intensified. On the other hand, if non-payment of stock dividend reveals lack of liquidity of the current period; and or shareholders find out that management investment decisions may not lead to future earnings and values, they would negatively respond and higher stock expected return would reduce. Obtained results failed to maintain the effect of stock dividend payout ratio on stock expected return. To state the matter differently, stock expected return in firms listed in Tehran Stock Exchange is not a significant function of stock dividend payout ratio.

Regarding t-statistic and the probability (smaller than 5%), leverage shows no significant relationship with stock expected return. Leverage implies firms' capital structure representing that to what extent the capital structure is financed through debts. When managements use debts more than equity for finance, shareholders may assume that managements enjoy the funds for financing profitable investment projects; therefore, it probably intensifies future earnings; despite, the costs of leveraged finance through debts. Accordingly, stock expected return would increase. The other side, new shareholders are added to the firm once managers prefer equity, which naturally lessens access to future returns of the current shareholders. Finally, stock expected return declines. Obtained results failed to maintain the effect of leverage on stock expected return. Otherwise, stock expected return of research sample firms listed in Tehran Stock Exchange is not a significant function of leverage. According to t-statistic and p-value of less than 5%, return on assets is significantly related to stock expected return. Due to the variable negative impact factor, an inverse significant relationship is observed. Return on assets infers firms' profitability and shows the amount of assets' operating margin. However, it appears that increased profitability causes multiplying stock expected return. Inverse effect may stems from lack of certainty of reported profits. It is assumed that managers manipulate profits for individual interests rather than the interests of owners and shareholders, according to the agency theories. In this regard, negative view toward reported profits, which is along profit management probability, may result in negative reaction (response); and finally, stock expected return decreases. Since if management

profit manipulations –traced through high-quality audit- are relatively assured, shareholders and investors show lack of inclination to the firm stock trading, which causes declined stock trading turnover. Consequently, stock prices also drop influencing stock expected return (leads to falling).

In the following analyses and after testing research hypotheses, stock expected return variable was initially classified, in terms of values smaller than overall mean observations and larger than overall mean observations, to control research results. Next, according to means equality test (t-test), research variables were compared at different levels of stock expected return as shown in Table 6. Research total observations were 448 firm-year observations in which, on average, stock expected return mean was 18.4%. According to the evidences, 226 firm-year observations showed less stock expected return than total observations with mean observation of 17%. On the other side, 222 firm-year observations with an average 19.8% stock expected return represented higher stock expected return than overall mean observations. Results verified that mean values of stock expected return at different levels, respecting to t-statistic and p-value <5% are not the same (equal) i.e. there is a significant difference between means. The mean significant differences indicate accuracy of firms' stock expected return-based breakdown into various levels. T minus sign also shows that the group less than the mean benefited less stock expected return; whereas, the group larger than the mean has larger stock expected return comparing others.

Table 7: Mean comparison test results of research variables at different levels of stock expected return

Variables	Mean values of stock expected return at different levels						Mean comparison test	
	Less than mean		Larger than mean		Total		T statistic	P value
	Observation	Value	Observation	Value	Observation	Value		
ER	226	0.169629	222	0.197736	448	0.183557	-99.26160	0.0000
CG	226	0.406014	222	0.548494	448	0.476617	-1.328268	0.1848
LIQ	226	0.137502	222	0.304261	448	0.220137	-5.365497	0.0000
MTB	226	2.329398	222	2.359160	448	2.344146	-0.032304	0.9742
SIZE	226	26.81908	222	27.26851	448	27.04179	-2.995804	0.0029
DPO	226	1.186473	222	1.051512	448	1.119595	0.451723	0.6517
LEV	226	0.613482	222	0.649251	448	0.631207	-1.424766	0.1549
ROA	226	0.394305	222	0.218084	448	0.306981	2.053463	0.0406

According to the results, means of capital gains are equal at different stock expected returns, given t-statistic and p-value >5%; and, there is no significant difference between means. While, according to t-statistic and p-value <5%, stock liquidity means are not equal at various levels of stock expected return i.e. there is a significant difference among means. The results, in general, demonstrated that observations of different levels of stock expected return are not critically different in respect to capital gains; whereas, they are majorly different in terms of stock liquidity. Results comparisons to research first main hypothesis test results indicated no significant relationship between capital gains and stock expected return. Mean comparison test also revealed no significant difference

between capital gains mean values at different stock expected return. In fact, these results are confirmatory. In addition, according to the results of research second main hypothesis, a positive, significant relationship was observed between stock liquidity and stock expected return. Otherwise, mean comparison tests showed a significant difference in stock liquidity means at different levels of stock expected return; in general, it is deduced that firms, at different stock expected returns, experienced different levels of stock trading turnover. According to research findings, observations with smaller (larger) stock expected return than the mean enjoy less (higher) stock trading turnover ratio than others. According to mean comparison test results, a positive relationship was seen between stock trading turnover and stock expected return in addition to means' significant difference. Research regression model tests representing a positive, significant relationship between stock trading turnover ratio and stock expected return are confirmed.

Market-to-book ratio means, stock dividend payout ratio means, as well as leverage means at different stock expected return levels are the same (equal), given to the t-statistic and p-value >5%, and no significant difference is seen among means. The results showed that observations of different levels of stock expected return are not majorly different in terms of market-to-book ratio, stock dividend payout ratio, and leverage. According to mean comparison test results, not only the lack of significant difference among means is maintained, but also no significant relationship is observed between market-to-book ratio, stock dividend payout ratio, and leverage with stock expected return. This confirms research regression model test results where no significant relationship was obtained between market-to-book ratio, stock dividend payout ratio, and leverage with stock expected return.

Given to t-statistic and p-value <5%, size and return on assets means are not equal at different levels of stock expected return and a significant difference is observed. It is totally concluded that firms with different levels of stock expected return underwent various sizes and return on assets. According to the results, mean observations less (larger) than stock expected return enjoy smaller (larger) size and higher (fewer) return on assets than others. It means that according to means comparison test results not only means are significantly different, but also a positive and negative relationship was observed between size and stock expected return, and return on assets and stock expected return, respectively. This verifies research regression model test results, where size and stock expected return were positively and significantly related; further, a negative relationship was seen between return on assets and stock expected return.

Conclusion and further recommendations

According to research results, capital gains have no significant effect on stock expected return. However, it seems that the main source of stock return is stock price change return referred as caporal gains; according to the research results, stock expected return may not merely follow stock price change return, or capital gains i.e. other potential factors also influence. Therefore, it is recommended that other factors are also considered in stock expected return evaluation in addition to capital gains. On the other hand, stock liquidity positively and significantly influences stock expected return. Hence, it is

suggested that not only various potential factors are considered in stock expected return evaluation, but also stock liquidity is regarded.

Since increased stock liquidity risk intensifies information asymmetry, financial analysts and investors are recommended to adequately attend to the present research results and also analyze disclosure and information asymmetry in order to prevent misinterpretation of a business unit and to induce more rational capital market behavior; and finally, to avoid their losses at cost of the interest of some jobbers. Comparison of real values and stock expected return revealed optimistic expectations; hence, investors and shareholders are advised to seriously consider the requirement meeting not to harm for expecting more return, as studies showed that optimism harmful outcomes are worse than pessimism. It is associated to behavioral biases of investment domain. Thus, it is recommended to reduce occurrence of such biases for investment so that the expectations are closer to come true. For further studies, authors are suggested to study:

- The relationship between stock expected return and stock price fall risk.

- The relationship between stock expected return and information asymmetry.

- The relationship between stock expected return and financial reporting quality.

- The relationship between abnormal return and capital gains with stock liquidity risk.

- The relationship between liquidity and stock liquidity stock with stock price fall risk.

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