

Illiquidity and stock returns: The Case of Amman Stock Exchange

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Abstract

The objective of this study to determine the relationship between illiquidity and stock returns of industry sector companies listed at the Amman Exchange stock. The research design was descriptive using Illiquidity ratio, the study was undertaken to ascertain the nature of this relationship at the ASE for a 5 year period 2013- 2018. The data was obtained from the Amman Stock Exchange in a daily format, which was then converted to a monthly format to fit with the research design, the Sample comprised from stocks that were continuously traded during this period. The Illiquid test shows there is effect of illiquidity in the returns of the shares of companies listed on the Amman Stock Exchange at the level of the industry sector.

Key words: Illiquidity, stock returns, Amman Stock Exchange, financial markets

Introduction

The obvious effects on the global stock exchanges require the necessity of increasing the awareness of dealers of the methods of analyzing and evaluating securities such as stocks and bonds, and if the clear features of the capital market are highly efficient, then the indicators are designed efficiently to measure the state of the market as a whole to be a true mirror of the general economic situation of the state, just as it can be Stock price indices are a reference to current prices and predict the future economic situation, before any change occurs and before any change (Aljawarneh & Atan, 2018). The future decision is made.

The stock exchange generally refers to the development and modernity and to the state of the various sectors in the overall economy concerned, and the importance of the stock exchange has emerged in the modern era as one of the most important financial tools in the evaluation and classification of countries, Economically, especially in light of globalization and the new international order, and economists consider these markets a true mirror that reflects reality (Aljawarneh et al., 2020). The investment conditions confined to them, and while those stock exchanges were a source of wealth for many adventurers and investors as well, they were a source of misery and bankruptcy for many of them, because they are characterized by excessive sensitivity, volatility and extreme risks (Alsafadi et al., 2020).

Organized and flexible financial markets play a vital role in mobilizing resources and savings and preparing them for investment, as well as in reviving the various sectors of the economy and

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moving the rates of economic growth increasingly and continuously, and contribute to attracting foreigners (Al-Omari et al., 2020). Moreover, national investments for immigrants. Moreover, it can be said that the success of the economic reform program depends on the presence of an active stock exchange that develops and expands the scope of dealing in securities in the market of the organization (Alshare et al., 2020).

The illiquidity rate indicator is one of the most prominent indicators in measuring the liquidity rates that are explained to investors and represents a measure of the temperature of the stock exchange (Al-Bourini et al., 2021). It has been proven that the state and degree of liquidity are among the most prominent indicators that affect investment decisions within the stock exchange (Aljawarneh, et al. 2021).

The importance of the study stems from the importance of investments and the return on investment in industrial companies, and from the role played by these investments in the development and modernization of any country's economy in light of the existence of the capital market, and therefore it is necessary to identify the factors that affect the returns of investments in industrial companies. In order to explain and analyze phenomena, identify their causes, search for appropriate solutions and work to raise and improve the level of the industrial sector's contribution to the market, which has a good impact on raising the level of the national economy in general. One of the applied studies conducted on the industrial sector in Jordan and based on the importance of this sector and the extent to which it is affected by economic developments, as this sector is one of the most prominent sectors with foreign investment (Aljawarneh, et al. 2021). This study comes to contribute to supporting scientific economic studies related to the industrial sector, as this study will focus on the factors that lead to fluctuation in the return on investment in Jordanian industrial companies.

Therefore, the study problem revolves around the impact of the illiquidity index on the stock returns of the industrial sector companies listed on the Amman Stock Exchange.

The Stock Return on the financial markets

The goal of any investor in investing in the financial markets is to achieve the largest possible return from the investment process, before and during the holding period.

This is what the investor needs to study and deeply scrutinize all the options available to take the right investment decision, taking into account the degree of risk and trying in that budget to raise the volume of return as required, as the return is the addition to the size of the investment during a specified period of time, and this is what it shows the relationship between the amount of risk and the expected return.

Where investors accept the purchase process in the stock market if the rate of return that complies with the investor's requirements is equal to or less than the expected rate of return from the stock supply, and in the case of the investor's decision to sell, he proceeds to the sale if the desired rate of return from the investor is higher than The expected rate of return, where the expected rate of return is considered a compensation for the investor due to the postponement of immediate consumption, including the measurement of the degree of risk for this investment (Al-Al-Dagher, 2005)

The illiquidity of the financial markets

The concept of illiquidity constitutes a good attractive element for research among academics and researchers in the global financial markets, as this topic is of great importance among its dealers, by allocating portfolios to guide their clients' investment horizons and the objectives of identifying the impact of illiquidity on their investments and the returns derived from them, as various studies have shown. On the extent of the relationship between illiquidity and stock returns and the extent of the impact on it, as it showed that the American markets have a very strong and positive relationship between illiquidity and stock returns, in contrast studies in the German market showed a positive relationship, but at a level less than the level of the relationship apparent in the American markets. As for the Chinese market, the results varied between the size of the positive impact between portfolios and the different sectors, but the rest of its results are positive for the relationship between illiquidity and stock returns for listed companies. A study (Martinez, 2005) showed in analyzing the illiquidity in the Spanish stock market from (1991-2000), where the results showed that the relationship between illiquidity and stock returns in the Spanish financial market does not exist.

Illiquidity rate: They are financial instruments around which there are difficulties in converting them easily into liquidity and bear a high storage cost and a high degree of risk (Koch, 2010). The illiquidity of a stock exchange is defined as the daily absolute average ratio of returns to trading volume (dollars) on that day.

On the other hand, with the passage of time, the expected illiquidity in the market positively affects the returns of the surplus stocks, and this indicates that the expected surplus stock return represents a penalty of liquidity, as the stock return is negatively related with the passage of time to illiquidity, which indicates that liquidity affects the Small companies are larger than large companies. The measure of illiquidity is the average of stocks from the daily ratio of stock returns to trading volume in dollars, which can be obtained from all the daily stock data from financial bulletins and for long-term time series from available and displayed in various financial markets. This can be measured by:

$$ILLIQ_{iy} = 1/Diy \sum_{t=1}^{Diy} |R_{iyd}| / VOLDiv_{iyd}$$

Diy: is the number of days for I stock data in year Y.-

Riyd: the return on stock I on day d of year Y.-

VOLDiv_{iyd}: The appropriate daily return in dollars.-

This shows the absolute percentage change (percentage) of price per dollar of daily trading volume, or the effect of the daily price on the flow of demand (Amihud, 2002).

Relationship between Illiquidity and Stock Returns

If the lack of liquidity affects the prices of assets, then surely changes in liquidity must change the prices of assets (remains *ceteris paribus*). (Amihud Y. H., 1990) Examined this hypothesis. The liquidity asset pricing theory suggests that a downward revision in liquidity should lead to a fall in the stock price. Moreover, the expected returns are theoretically an increasing function of illiquidity cost, and its relationship is concave due to customer effect.

Illiquidity is a risk factor in determining returns. Risk factors are all factors that contribute to a certain degree to stock returns, and their effect is beta-specific. The main risk factors in

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determining stock returns are business risk, financial risk (leverage), liquidity risk (liquidity), exchange rate risk, and country (political risk) (Duncan Brown, 2013)

Empirically, studies investigating the relationship between liquidity/liquidity and asset prices include (Amihud Y. ., 1986a), (Brennan, 1996), (Datar, 1998), (Michael Brennan, 1998), (Fiori, 2000), (H. Chan, 2005), (Viral V. Acharya, 2005)among others Using a variety of measures of liquidity, these studies have generally found that less liquid stocks have higher average returns (Lubos Pastor, 2003)(Matthew Spiegel, 2005) found a significant cross-sectional relationship between stock returns and liquidity diversity.

(Njiinu, 2007)Found significant changes in NSE liquidity for the period under study; the results of (Gacheru, 2007)revealed that there is no significant correlation between trading volume and stock market prices in NSE. (Koech, 2012)Found that there is an infinite relationship between liquidity and returns for companies listed on NSE.

Amman Stock Exchange Market (ASE)

The Amman Stock Exchange (ASE) is an emerging stock market since its establishment on January 1, 1978. The Amman Stock Exchange has connections with neighboring Arab stock exchanges. It is highly dependent on foreign capital inflows (deposit; and foreign investment), which has consequently improved portfolio diversification, product support and liquidity. The stock market in Oman has witnessed remarkable developments in rapid economic growth. This may be due to the implementation of the new Electronic Trading System (ETS). This is why measuring the effect of inflation, interest rate and exchange rate on stock prices in emerging markets has more than a few advantages such as: being more dodgy, more volatile, often accompanied by low trading volumes and subject to more handling compared to mature markets (Khaled, 2011) The Amman Stock Exchange was established on March 11, 1999 as a result of the Jordanian capital market reform process. It is described as a private, non-profit organization with administrative and financial independence, and is authorized to exchange securities. In addition, the Amman Stock Exchange is an efficient market for trading securities, and therefore it provides an attractive and safe environment for investment, develops securities trading processes and systems in the stock market, meets the latest international standards, and disseminates trading information to as many as possible. Of the participants. Then, in 1997, Law No. 23 was issued as a turning point for the Jordanian capital market. The act introduced three new institutions to replace the AFM, namely:

1. Jordan Securities Commission (JSC)
2. Amman Stock Exchange (ASE)
3. Securities Depository Center (SDC)

The Joint Services Authority is responsible for defining regulations and monitoring the market, and the Center is responsible for managing settlements and maintaining property records. In fact, the Amman Stock Exchange is one of the largest stock exchanges in the region that allows foreign investment.

Methodology

This paper will discuss the relationship between illiquidity and returns on the shares of companies listed on the Amman Stock Exchange using the data from Jordan Stock Exchange. The Panel Data method was relied on in order to analyze the relationship between stock returns and illiquidity indicators for public shareholding companies listed on the Amman Stock

Exchange, and in order to test the hypothesis of the study the Collecting data and statistical methods used in economic analysis by conducting a data static test, testing the nature of the relationship between variables, and then verifying the validity of the study hypothesis. The hypothesis that will be used is:

H1: there is relation between Illiquidity and returns of the shares of companies listed on the Amman Stock Exchange.

The study's time horizon extends from the year 2013 till 2018. The population of this study consists of Amman stock exchange listed companies.

The standard approach was used to analyze the variable of this study during the study period. The variable were studied to provide a theoretical description. In order to illustrate the expected effects on variable under examination, the standard analytical method was used to calculate the statistical significance values showing the relationship between Illiquidity and returns of the shares of companies listed on the Amman Stock Exchange and by estimating standard models for the variable, we investigate of the relation between Illiquidity and stock returns in Amman stock exchange.

Research sample

Annual data was used in the analysis of variable of the study. Data on the Illiquidity was obtained from the Amman stock exchange for the study period. The E-Views program was used to analyze the annual data series for the years (2013 until 2018). The results of the study were presented based on the analysis and processing of the hypothesis of the study.

The sample in this research consist of industry sector (66) companies, (Jordan Securities Commission, 2021).

In order to reach certain measures in determining the value of illiquidity, the law of illiquidity used in the study (Amihud Y. , 2002)was relied upon, due to the adoption of many international studies in measuring illiquidity through it, and it is considered the most prominent in the world. The daily return of shares to the trading volume in dollars

In choosing the sample, there were pre-determined criteria as follow:

- (1) The firm has published its complete financial statements for 5-year period from 2013 to 2018.
- (2) The firm's fiscal year-end is December.
- (3) The firm does not have negative equity.

Data Collection Techniques

Data will be obtained from secondary sources, which are the various stock data that is available from the Amman Stock Exchange. The data set includes portfolio of selected stocks from specific market sector strata, and the study employs monthly data for opening and closing stock prices

Illiquidity Calculations

The Turnover Rate as the first proxy given by:

$$ILLIQ_{iy} = 1/Diy \sum_{t=1}^{Diy} |Riyd|/VOLDivyd$$

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Model

The following equation was estimated through Eviews 9 program to measure the effect of illiquidity in the returns of the shares of companies listed on the Amman Stock Exchange:

$$Y = \alpha * (X1 * \beta1) + S.Error$$

Where:

Y: stock returns.

X: illiquidity.

α : constant.

$\beta1$: the regression coefficient of the independent variable (stock dividend).

S.Error: Standard or random error.

Descriptive statistics:

The summary of descriptive statistics for the variable used in the empirical analysis is presented in Table (1)

Table (1) Descriptive statistics

Variable	Median	Mean	Std. Dev.	Minimum	Maximum	skewness
illiquidity/industry sector level	1.00	1.37	0.33	0.00	1.38	34.17

Based on that table (1) we can make the following observations The arithmetic mean of illiquidity at the level of the industry sector during the period (2013-2018) reached a value of (1.37), with a standard deviation of (0.33) and a median of (1.00), as it ranged between (0.00) the lowest value, and (1.38) the highest value, and the skew coefficient is heading towards The positive has a value of (34.17).

Statistical and Standard Analysis and Hypothesis Testing

Table (2) unit roots test results at the industry sector level

Variables	level	T – Value	T Table Level $\alpha = 0.05$	Statistical significance
Illiquidity/industry sector level	Difference	-6.58	152.7	0.00

Table (3) results of the fixed effect model / at the level of the industry sector

Independent variable	Reg. coefficient	(T) Value	Statistical significance
(Constant)	0.008	15.61	0
Illiquidity	0.49	33.54	0
R-squared	0.33		
Adjusted R-squared	0.33		

Durbin. Watson	0.74
Hannan-Quinn criter	-4.47
(F) Value	379.2
Statistical significance of (F) value	0

Table (4) results of the random effect model (EGLS) / at the level of the industry sector

independent variable	Reg. coefficient	(T) Value	Statistical significance
(Constant)	0.008	14.76	0
Illiquidity	0.49	33.68	0
Effects Specification			
		S.D	Rho
0.007	0.08	Period random	

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Period random	0.08	1	0.76
0.02	0.91 0.02	Idiosyncratic random	
Weighted Statistics			
R-squared	0.33		
Adjusted R-squared	0.33		
Durbin. Watson	0.74		
(F) Value	1123		
Statistical significance of (F) value	0		

Table (5) Hausmann test results/industry sector

In order to find out the appropriate model for estimation (fixed effect model or random effect model), the Hausmann test was estimated and through the results of the Hausmann test in Table (5) and through the value of chi-squared and statistical significance of 0.76)) which is greater than (0.05) and thus was Acceptance of the main hypothesis which states that the random effect model is appropriate for estimating the impact of illiquidity on stock returns for companies listed on the Amman Stock Exchange.

The hypothesis test

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It is evident from the results of estimating the random effect model in Table (4) and through the value of the coefficient of determination of (0.33) that 33% of the changes in the returns of the shares of companies listed on the Amman Stock Exchange at the level of the industry sector are due to illiquidity.

It also shows through a statistical value (F), which amounted to (1123) and a statistical significance (0) that the model is valid for measuring the impact of illiquidity on stock returns for companies listed on the Amman Stock Exchange.

Hypothesis testing results.

In order to test the main hypothesis, the random effect model was used for the independent variable (lack of liquidity) and stock returns as a dependent variable, based on the Hausmann test and based on the results of Table (4) as follows:

-There is an effect of illiquidity in the returns of the shares of companies listed on the Amman Stock Exchange at the level of the industry sector, where the calculated value (t) reached (33.68) and its statistical significance was (0.00) which is less than (0.05), and therefore the main hypothesis is rejected and the hypothesis that states: There is a statistically significant effect of illiquidity on the stock returns of companies listed on the Amman Stock Exchange.

Contributions

This paper presents that the illiquidity index has a clear and significant impact on the volume of returns of the study sample companies, which are the industrial companies, where this is included and that the stock exchange is characterized by a high degree of low liquidity, and this shows us that the small size of investment within the Amman Stock Exchange and the size of investment in The industrial companies sector represents one of the biggest reasons for the high scores of the illiquidity index, and despite the importance of the study sample sector, it is not the least of the sectors in the number of companies listed on the stock exchange, and although this sector is also characterized by the size of foreign investment, the size of the impact is clear to the lack of liquidity. Within the sector, the study found the need to increase the knowledge base of investors in the Amman Stock Exchange with the factors and indicators affecting the volume of returns, which were relied upon in the study, in order to increase the efficiency of investment operations.

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