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The Impact of Stock Market Liquidity on Economic Growth in Jordan

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Abstract
This paper identifies the position of stock market liquidity at Amman Stock Exchange (ASE) during the period from 1991 to 2011 . For measurements of liquidity at ASE we have used tow measuring tools as; market capitalization to GDP, the turnover ratio. Also, The research aims to test the relationship between these indicators and the economic growth represented by the growth rate of GDP. The model adopted for testing the relationship is the simple linear regression model. It has been found that market capitalization to GDP doesn't exert significant effect upon the economic growth but the turnover ratio has significant effect upon the economic growth.
Keywords: Economic growth, stock market liquidity, GDP, ASE, Amman Stock Exchange, turnover ratio, market capitalization.

1. Introduction

Stock markets are playing a crucial role in the capital mobilization and provide secondary markets to the investors and financial institutions through buying and selling the securities. A stock market is to be considered as liquid when large transactions are executed with a small impact on prices of securities. The stock market liquidity is considered a best tool to measure the efficiency of a stock market. This research intends to study the liquidity position of Amman Stock Exchange through the period 1991 to 2011 and the impact of liquidity market on economic growth.

Stock market liquidity refers to the ability of investors to buy and sell securities in the stock market with easy transfers. Levine (1998) shows liquidity as the easy and speed with which capital market agents can convert assets into purchasing power at agreed prices. It is an important indicator of stock market development because it signifies how the market helps in improving the allocation of capital and thus enhancing the prospects of long-term economic growth. Focusing on liquidity, Bencivenga, et. al. (1991) argues that stock market liquidity plays a key role in economic growth. So without a liquid stock market, many profitable long term investments would not be undertaken because savers would be reluctant to tie up their investments for long periods of time. In contrast, a liquid equity market allows savers to sell their shares easily, thereby permitting firms to raise equity capital on favorable terms. By facilitating longer term, more profitable investments, a liquid market improves the allocation of capital and enhances prospects for long term economic growth.

However, Demetriades (1996) points out that increased liquidity can deter growth through at least three channels first, by increasing returns to investments; greater stock market liquidity may reduce saving rates through income and substitution effects. If savings rates fall enough and if there is an externality attached to capital accumulation, greater stock market liquidity may slow economic growth. Second, by reducing the uncertainty associated with investment, greater stock market liquidity may reduce saving rates because of the ambiguous effects of uncertainty on savings. Third, stock market liquidity encourages investor myopia, adversely affecting economic growth

The rest of the paper is as follows: Section II reviews existing literature on the link between stock market liquidity and economic growth; Section III describes the stock market in Jordan; section IV deals with the empirical analysis and section V conclusions of the study.

2.Hypotheses:

The hypotheses are:

Ho1: There is no significant relationship between market capitalization and economic growth.

Ho2: There is no significant relationship between turnover ratio and economic growth.

3.Literature Review:

A lot of studies exist on the causality between Stock Market Liquidity and economic growth. We summarize some studies that addressed this issue as follows:

Mawla (2011), aimed to test the relationship between stock market liquidity indicators and the economic growth represented by the growth rate of a group of Arab states from 1994 to 2007.The model adopted for testing the relationship is the simple linear regression model. It concluded that liquidity provided by stock market doesn't have significant effect upon the economic growth of the sample countries.

Ogunmuyiwa, M.S. (2010). studied the relationship as well as the channel through which investor's sentiment and liquidity affect growth by using appropriate econometric technique on time series data from 1984-2005. Empirical evidence showed that both investor's sentiment and stock market liquidity Granger-cause economic growth in Nigeria.

Moreover, Yartey (2008) studied the institutional and macroeconomic variables that contribute to stock market development. Through employing panel data of 42 emerging economies during the period between 1990 and 2004, he found that income level, gross domestic investment, banking sector development, private capital flows, and the liquidity of stock markets are fundamental determinants of stock market development. He also confirms that political risk, law and order, and bureaucratic quality are important causes of stock market development.

Levine (2003) focus on the ambiguous predictions about the relationship between stock market liquidity and economic growth. The paper presents cross-country evidence on the association between one measure of stock market liquidity and average economic growth rates over the period 1976 – 1993. The data suggest that there is a strong positive relationship between long-run economic growth rates and stock market liquidity.

Zhu and others (2002) showed that the Levine-Zervos results are not robust to alternative specifications because of the incomplete manner in which they control for outliers in their data. And they showed that when one properly controls for outliers, stock market liquidity no longer exerts any statistically observable influence on GDP growth

Levine and Zervos (1998) presented cross-country econometric evidence showing that, in a sample of 47 countries, stock market liquidity contributed a significant positive influence on GDP growth between 1976-1993. We show that the Levine-Zervos results are not robust to alternative specifications because of the incomplete manner in which they control for outliers in their data. We show that when one properly controls for outliers, stock market liquidity no longer exerts any statistically observable influence on GDP growth.

4. The Amman Stock Exchange Market (ASE)

The law of the stock exchange market established in March 1999 as an alternative market of Amman Financial Market; namely "Amman Stock Exchange". Membership in this market consisted of financial brokers in order to detach the supervisory role from the executive; which was left for the private sector. ASE is mandated to serve as a regulatory and control authority over securities exchange transactions by providing an appropriate environment for the interaction of the supply and demand forces on securities and to control, regulation, registration, settlement of transactions, and control the movement of prices, as well as to follow-up on the extent to which brokers apply trading procedures and auditing contracts concluded in the market, registration in the market records, and submitting them to the shareholders departments of companies and distribute them to brokers, who in turn shall distribute them to their clients and collect applicable fees and commissions payable on securities property transfer, monitoring and follow-up activities of brokerage firms to ensure the safety and health of its operations, and following up on bond market in Jordan to increase its activity and offer technical and functional facilities to provide investors with the necessary information

ASE has different connections with its neighboring Arab financial markets. The ASE performance is reliant on external financial inflow such as workers' remittances, Arab aid, and foreign investment. This has strengthened the portfolio diversification products and liquidity assets. Nevertheless, the ASE experiences economical fluctuations, and is surrounded by political conflict , deficient of transparency, social conditions, accounting criteria's, and investor safety, which have all lead to Jordan being exposed to external economic fluctuations.

The figures in table 1 indicate that the ASE has developed quickly in volume and value. The trading value has quickly increased from only JD 302.8 million in 1991, to JD 20318.0 million in 2008, but however fell to JD 2850.3 million in 2011. This provides a sign of the economic growth fluctuation in Jordan. With regards to liquidity, it is noticeable that it is not augmented in proportion to market capitalization. Moreover, the turnover ratio has oscillated throughout the period

5.Data and Methodology

Generally, previous research using cross-country data supports the hypothesis that financial development leads to economic growth. Levine and Zervos (1996), use the regression equation:

$$GROWTH = \alpha X + \beta(STOCK) + \varepsilon_i$$

where X is a set of control variables, GROWTH is the real GDP growth rate and STOCK represents measurements of the stock market. So relationship of the form is :

GROWTH = β0 + β1 MC + β2MTR + e3

Where

MC = market capitalization as percentage of GDP
MTR = market turnover ratio as measure of stock market liquidity.
The 20-year time-series (1991-2011) data used for this study was collected from Amman Stock Exchange Annual Reports and Accounts, Central Bank of Jordan Statistical Bulletin, various issues.
The summary descriptive statistics of the variables used (Table 1) show the mean, standard deviation and minimum and maximum value of the data. It is obvious from the table that GDP growth in Jordan ranges from 2% to 14% with an average of 5%. The average market capitalization as percentage of GDP has remained on 1.47 and its ranking continuously rise from 0.49 to 3.6 in the year 2005. The market turnover ratio is averaged at 51.9 starting from its minimum value of 11.59 in year 2000 to 102.1 in 2010.
5.1 Stationary Test: table 2 shows the unit root test using the augmented Dickey- Fuller (ADF). The objective of the unit root test is to empirically examine whether series contains a unit root or not. If the series contains a unit root, this means that the series is non-stationary. Otherwise, the series will be categorized as stationary.
The unit root tests show that Economic growth, market capitalization as percentage of GDP and market turnover ratio are not stationary at the zero order both with constant and constant and trend terms. Hence, we move ahead to conduct the ADF test at first difference to further ascertain the stationary of the series. The unit root results at first difference rejects the null hypothesis of non-stationary at both 1 and 5 percent levels for Economic growth, market capitalization as percentage of GDP and market turnover ratio.

6.Results and discussions:

The methodology of the series of the regression using the Ordinary Least Squares (OLS) model to prove a significant correlation between market liquidity and economic growth.
The Table 3 shows the regression results for the impact of Stock Market Liquidity on Economic Growth in Jordan. It shows that over 28 percent of the total changes in economic growth rate are explained by the included exogenous variables. The adjusted R-square result explains over 20 systemic changes in the model. The Durbin Watson Statistics indicates insignificant autocorrelation in the model represented above. The F-statistics is statistically significant at the 5 percent level
The coefficient of market capitalization as percentage of GDP (MC) is negative but it is statistically insignificant. The coefficient of market turnover ratio (MTR) is significant at the 5% level and the sign is positive indicating that 1% increase in market turnover ratio will increase the growth rate of GDP by 0.06%. This means that market turnover ratio has more positive influence on economic growth in Jordan.

7. Conclusion

This study investigates the relationship of stock market liquidity and economic growth by taking market capitalization to GDP and turnover ratio as independent variables. The impact of these variables is empirically tested on economic growth as a dependant variable for the period of 1991 to 2011 using ADF unit root testing methodology and OLS regression. We find that the market turnover ratio has a stronger influence on economic growth than the of market capitalization to GDP
Finally,, governments should promote stock market liquidity by for instance propagating knowledge to the public of the benefits of investing in stock markets and to ensure higher liquidity on stock markets. These incentives would promote both domestic and foreign investments to penetrate the domestic economies, and thus help to increase economic growth.

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Table (1) Descriptive Statistics

	GDP growth	market capitalization as percentage of GDP	market turnover ratio
Mean	0.054031	1.465114	51.93310
Median	0.049866	0.833422	49.10000
Maximum	0.143511	3.613624	102.1770
Minimum	0.016085	0.491349	11.59200
Std. Dev.	0.029801	0.986557	33.37653
Skewness	1.234758	0.903932	0.316186
Kurtosis	4.823943	2.449547	1.464853
Jarque-Bera	8.247120	3.124948	2.412000
Probability	0.016187	0.209617	0.299393
Sum	1.134651	30.76740	1090.595
Sum Sq. Dev.	0.017762	19.46588	22279.85
Observations	21	21	21

Table (2) :Augmented Dickey-Fuller test

Variable	Level ADF	First difference ADF	Critical values 1%	Critical values %5
GROWTH	-2.56	-11.5**	-3.88	-3.05
MC	-1.39	-5.01**	-3.80	-3.02
MTR	-1.4	-4.35**	-3.80	-3.02

Ho: unit root; H1: trend stationary,* significance at 1 and 5 % level of significance

Table(3): The Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MC	-0.008283	0.01039	-0.797278	0.4357
MTR	0.000649	0.000307	2.114066	0.0487
Constant	0.032451	0.011179	2.902807	0.0095
R-squared	0.279528	Mean dependent var		0.054031
Adjusted R-squared	0.199476	S.D. dependent var		0.029801
S.E. of regression	0.026663	Akaike info criterion		-4.279493
Sum squared resid	0.012797	Schwarz criterion		-4.130276
Log likelihood	47.93468	Hannan-Quinn criter.		-4.247109
F-statistic	3.491813	Durbin-Watson stat		1.844863
Prob(F-statistic)	0.052306			

Figure 1. Trading volume in the Amman Stock Exchange by sector for the period (2000-2010)