

The Relation between the Financial Market Development and Economic Growth in Jordan

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Abstract

The purpose of this study is to examine the relationship between economic growth and financial market development in Jordan through the co-integration and error correction model between during the period 2000-2018. The study employs the error correction model to determine the short-run dynamics of the system and the cointegration test to examine the long-term relationship. The study is limited to a few variables, changes in real Gross domestic product GDP and the IMF indicator for financial market development. The results show that in the long-term there is a significant relationship between economic growth and financial market development for Jordan data., while in the short-term there is no statistically significant relationship between the stock market development and economic growth. Furthermore, causality is going from economic growth to financial market development, not vice versa.

Keywords: Economic Growth, financial market development, Amman stock market, IMF indicator.

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1. Introduction

The correlation between financial market development and economic growth has received considerable attention from researchers and decision makers in different countries, (especially developing countries), which aim to improve living standard's through increasing the individual share of their capital income. Subsequently, the question that arises here how certain economies have achieved high economic growth rate compared to other?

In an attempt to answer the previous question, most studies focused on the role of financial market development in the economic growth. Since the pioneering work by Gurley and Chaw (1955, 1960, 1967), Goldsmith (1969) and McKinnon (1973), a substantial volume of research has been devoted towards verifying and understanding the existence of linkages between the economic growth and financial sector development. The direction in which the financial markets have evolved over time and the strong association of this development with capital accumulation and growth, present striking regularities and common features in many economies.

The main purpose of this paper is to investigate the mutual relationships between economic growth (GDP) in Jordan and development of market financial system. To achieve this, the study was structured into 3 sections: section I deals with the Hypothesis and Methodology; section II discusses the Previous studies, in section III is about Theoretical Framework; in section IV is about financial markets indicators in Jordan, while Empirical Results and analysis of results are presented in section V.

1.2 Hypothesis

The research is based on the hypothesis that Assume that the financial market development helps explain the changes that occur in the economic growth.

1.3 Research Methodology

The study was based on the primary sources of references and books that are examined in the subject of the study. The descriptive statistical method was followed by analyzing the during the period 1998-2019. and in the empirical study we used Time series analysis techniques. First the stationarity of the variables was tested by Augmented Dickey Fuller (ADF) test. Second Co integration test was used to identify a long-run relationship among the variables. Finally, we used Error Correction Model (ECM). EVIEWS statistical software was used to perform the analysis.

2. Previous Study

A large body of empirical studies clearly shows that the development of stock markets is strongly and positively correlated with economic growth. Some are outlined below:

Goldsmith (1969). Using data on 35 countries in the period of 1860–1963 he showed a positive correlation between the financial system development and the level of economic activity. He pointed out that in some long sub periods of the above sample a rapid economic growth was often accompanied by an above average rate of financial development.

Calderon and Liu (2003), using data for 109 countries over the period of 1960–1994 and econometric models,

stated that: a) there was bi-directional causal relationship between financial development and economic growth; b) the impact of financial development on economic growth was more important than the impact of growth on financial development, particularly in developing countries; c) the longer examined period, the greater the influence of financial development on economic growth was observed; d) the impact of economic growth on financial development become insignificant over long periods (even in developed countries).

Nowbutsing, OditT (2009) this paper examines the impact of stock market development on growth in Mauritius. A time series econometric investigation is conducted over the period 1989 -20067. They analyse both the short run and long run relationship by constructing an ECM. Two measures of stock market development namely size and liquidity are used. The study define size as the share of market capitalization over GDP and liquidity as volume of share traded over GDP. They found that stock market development positively affect economic growth in Mauritius both in the short run and long run.

NURUDEEN (2009) This paper investigates whether stock market development raises economic growth in Nigeria, by employing the error correction approach. This study covers the period 1981-2007 The econometric results indicate that stock market development (market capitalization-GDP ratio) increases economic growth. The recommendations therein include: removal of impediments to stock market development which include tax, legal, and regulatory barriers; development of the nation's infrastructure to create an enabling environment for where business can thrive; employment of policies that will increase the productivity and efficiency of firms as well encourage them to access capital on the stock market; enhancement of the capacity of the Nigeria Security and Exchange Commission to facilitate the growth of the stock>market, restore the confidence of stock market participants and safeguard the interest of shareholders by checking sharp practices of market operators (particularly speculators)

Ake, B. (2010) explore causality relationship between stock market and economic growth based on the time series data compiled from 5 Euronext countries (Belgium, France, Portugal, Netherlands and United Kingdom) for the period 1995:Q1 to 2008:Q4. Granger causality test was used to find causality relationship between stock market proxies through market capitalization, total trade value, turnover ratio and economic growth (GDP and FDI). Causal relations were investigated for each country. The results of the study suggest a positive links between the stock market and economic growth for some countries for which the stock market is liquid and highly active. However, the causality relationship is rejected for the countries in which the stock market is small and less liquid.

Jahfer, Inoue (2014) examines the long run relationship between the financial development, stock market development and economic growth in Japan during the period 1974-2011. Johansen Cointegration Technique and Vector Error Correction Model are used to investigate the relationships. The results demonstrate that there is a long-run equilibrium relationship between the financial development, stock market development and economic growth in Japan and that financial development and stock market development causes economic growth, but there is no evidence of causality from economic growth to financial development or stock market development.

3. Theoretical Framework

Economists have done a lot of investigations on the topic of economic growth. They have created many theories explaining mechanisms of this growth. There are some examples of empirical researches which show that financial market development is not only correlated with economic growth but it causes this growth. This mechanism results from the fact that financial market facilitates higher investments and the allocation of capital, and indirectly the economic growth. Sometimes investors avoid investing directly to the companies because they cannot easily withdraw their money whenever they want. But through the financial stock market, they can buy and sell stocks quickly with more independence. (Levine and Zervos,1998).

Levin (1991) argue that stock market liquidity (the ability to trade stocks easily) is crucial to growth. Although many profitable investments require a long-term commitment to capital, savers do not like to give up control of their savings for long periods. Liquid equity markets relieve this tension by providing assets to savers who can sell quickly and inexpensively. At the same time, companies have permanent access to the capital raised through equity issues. Moreover, Holmstrom and Tirole (1993) argue that liquid stock markets can increase investor incentives to obtain corporate information and improve corporate governance.

Also, Levine (1991) and Benchivenga and Smith and Starr (1992) emphasized the positive role of liquidity provided by exchanges in the volume of investments in new real assets through joint stock financing. Investors are more easily persuaded to invest in common stocks, when there is little doubt about their marketability. This, in turn, motivates companies to target the public when they need more financing to invest in capital goods. So, the exchanges are expected to accelerate economic growth by increasing the liquidity of financial assets, making global diversification of risks easier for investors, encouraging wiser decisions in investing by providing surplus units based on available information, and forcing company managers to work harder for the interests of Shareholders, directing more savings to companies.

Dailami and Aktina (1990) find that well-developed stock market should increase saving and efficiently allocate capital to productive investments, which leads to an increase in the rate of economic growth. Stock markets

contribute to the mobilisation of domestic savings by enhancing the set of financial instruments available to savers to diversify their portfolios. In doing so, they provide an important source of investment capital at relatively low cost. In a well-developed stock market share ownership provides individuals with a relatively liquid means of sharing risk when investing in promising projects. Stock markets help investors to cope with liquidity risk by allowing those who are hit by a liquidity shock to sell their shares to other investors who do not suffer from a liquidity shock. The result is that capital is not prematurely removed from firms to meet short-term liquidity needs.

According to Bencivenga and Smith (1992) the new stock market can increase economic growth by reducing liquid asset holdings and increasing the rate of physical capital growth, at least in the long run. However, the capital equilibrium response to a new stock exchange may be negative in the short term because opening the exchange can increase household wealth and increase its contemporary consumption enough to temporarily reduce the capital growth rate.

Another important contribution of stock exchanges to economic growth is through global risk diversification opportunities they offer. However, Deveraux and Smith (1994) and Obstfeld (1994) argue quite plausibly that opportunities for risk reduction through global diversification make high risk, high return domestic and international projects viable, and, consequently, allocate savings between investment opportunities more efficiently. Stock prices determined in exchanges, and other publicly available information help investors make better investment decisions. Better investment decisions by investors mean better allocation of funds among corporations and, as a result, a higher rate of economic growth. In efficient capital markets prices already reflect all available information, and this reduces the need for expensive and painstaking efforts to obtain additional information (Stiglitz, 1994). From the point of view of Schumpeter (1912), technological innovation is the force underlying long-run economic growth, and that the cause of innovation is the financial sector's ability to extend credit to the entrepreneur.

4. financial markets indicators

A financial market is a market or an arrangement of an institutions that facilitate the exchange of financial instrument and securities includes stocks, shares, bonds and commercial papers etc. Through regulated and organized exchanges financial markets play a major role in the economic growth of the countries.

In the early thirties, the Jordanian public already subscribed to and traded in shares; the Arab Bank was the first public shareholding company to be established in Jordan in 1930, followed by Jordan Tobacco and Cigarettes in 1931, Jordan Electric Power in 1938, and Jordan Cement Factories in 1951. Trading shares of public shareholding companies in Jordan was before foundation of Jordanian securities market. At the begging's unorganized securities markets was occurred which make the government think seriously of setting up a financial market to organize the process of issuance and trading the securities. In 1975 the central bank of Jordan recommended to establish an organized market for securities then temporary law No.31 was released to establish Amman financial market AFM which get started on Jan 1978.

Amman financial market had two main roles; the role of a Securities and Exchange Commission (SEC) and the role of a traditional Stock Exchange. Trading in secondary market has risen from 9.7 million JD in 1978 to 3.2 billion JD in 2016. The market capitalization of shares reached to 17.3 billion JD after it was 286 million JD in 1978. Also the number of listed companies increase from 66 in 1978 to 224 in 2016. At the end of 2019 the net profit of the listed companies on ASE reached to 930 million JD, and trading volume increased to 1.6 billion JD. Also the number of traded shares and non-Jordanian investment reached to 1.2 billion JD and 114 million JD respectively.

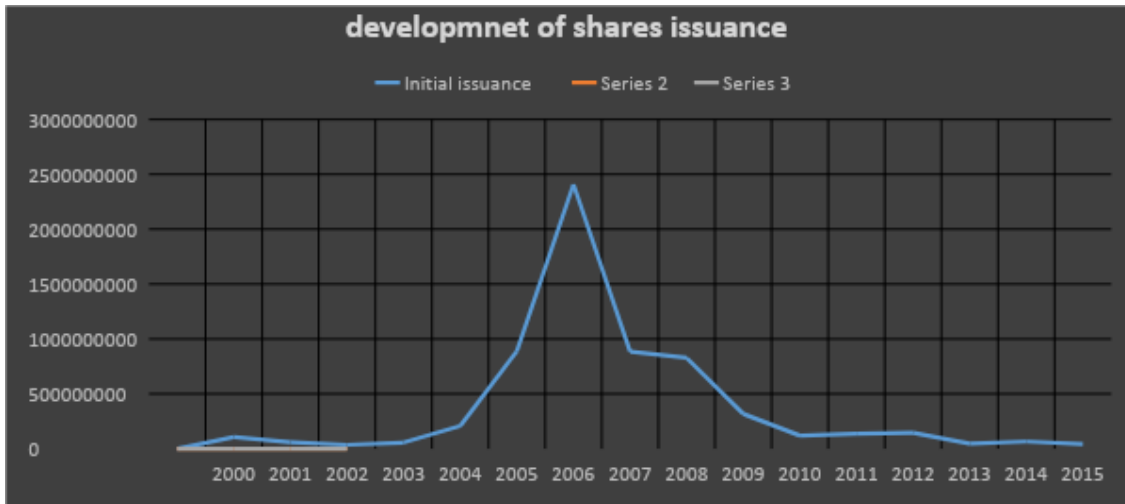
Due the expansion of Jordan economy and the increasing in volume trading the Jordanian government adopted a comprehensive reform policy for the market. The most important event in the reform policy was the issuance of the Companies Law No. 22 of 1997 and temporary securities law No 23 of 1997. The law included the creation of three new institutions to replace Amman Financial Market:

1. Jordan securities commission
2. Amman stock exchange (ASE)
3. Securities depository center.

On February 20th, 2017 The ASE has been registered as a public shareholding owned by the government aimed to provide a fair, efficient and transparent market for securities trading. After that ASE has several developments on various levels; legislative and technical such as activate Market watch live (AseLive application) and Client Trading Analysis (CTA) and release Really Simple Syndication (RSS).

To analyze ASE performance we rely on a set of indicators:

initial issuance in primary market have several fluctuations up or down, it has reached 105,924,067 JD in 2000, and reached to 888,825,951 JD in 2005 because of the increasing of listed companies in ASE. In 2009 initial issuance has decreased to 371,321,922 JD because of global financial crises, then it increased again in following years reached to 5340.24 million JD in 2016.



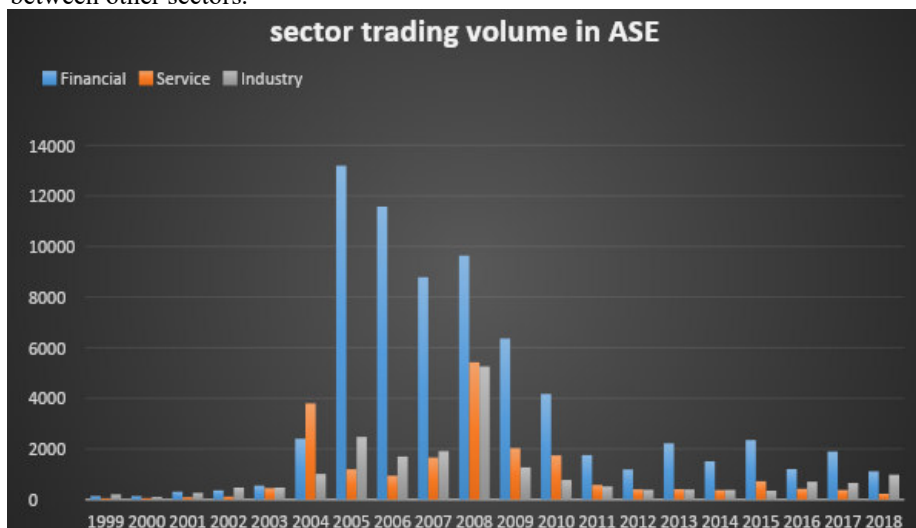
- Number of listed companies is Another indicator we can analyze the development of ASE, as shown in the table ASE started with 100 companies then the number increases rapidly reached to 237 in 2009 and 240 in 2013. In 2017 the number decreased to 194 because the third market has been canceled therefore shares of 29 companies have been canceled and transferred to trading in OTC market due to the failure to fulfill the conditions of listing in the second market.

Table 1 : Number of listed companies in ASE

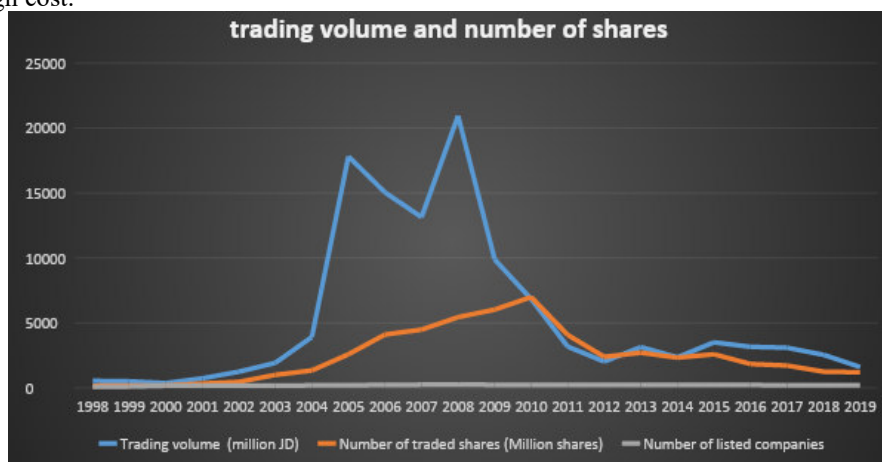
Year	Number of listed companies	year	Number of listed companies
1998	100	2009	237
1999	99	2010	236
2000	163	2011	233
2001	161	2012	231
2002	158	2013	240
2003	161	2014	236
2004	192	2015	228
2005	201	2016	224
2006	227	2017	194
2007	245	2018	195
2008	262	2019	192

Table prepared by researchers based on ASE financial reports

- The Sector trading volume in ASE: The listed companies in ASE were divided into to three main sectors; financial, services and industrial as shown in the following figur, where the financial sector was the first between other sectors.



- Trading volume in ASE was reached to the maximum in 2005 with an amount 17813.7 billion JD and then it started to decrease in 2009 because of global financial crises. Trading mechanism in ASE is weak resulted from weak liquidity its difficult to execute investors orders at any time they choose, in addition to high cost.



5. Empirical Results

5.1 The Data and Descriptive statistics:

This paper employs most recent data than the previous studies. The data used for this study are basically time series data for Jordan covering the period 2000- 2018. Data were sourced from The Central Bank of Jordan and The international monetary fund. The two economic variables included in this study are the Economic Growth rate which calculated by changing in Real Gross Domestic Product At Constant Prices (GDP) and financial market development index was developed for IMF staff, it focus on stock market and debt market development.(This index was originally prepared for the IMF Staff Discussion Note “Rethinking Financial Deepening).

Table (2) shows descriptive statistics for the Economic Growth rate and financial market development . The mean Economic Growth value is about 5% with the highest 8.5% in 2004 and lowest 1.9% in 2017. in the other hand the mean of financial market development is 39% with the highest 64% in 2009 and lowest 24% in 2017.For each Economic Growth rate and financial market development, are not normal distribution as shown by an insignificant Jarque-Bera statistic.

Table 2 : Descriptive statistics

	FM	GDP growth
Mean	0.397228	0.047218
Median	0.352307	0.042026
Maximum	0.635790	0.085677
Minimum	0.236486	0.019703
Std. Dev.	0.119693	0.024240
Skewness	0.643282	0.410172
Kurtosis	2.166780	1.628436
Jarque-Bera	1.762127	1.915614
Probability	0.414342	0.383733
Sum	7.150105	0.849917
Sum Sq. Dev.	0.243548	0.009989
Observations	18	18

5.2 Unit Root Test:

Before beginning with data analysis, the stability of time series and whether they are stationary or not must be confirmed to avoid the problem of spurious regression. we used the Augmented Dickey-Fuller (ADF) technique. The ADF equation was performed for the case without intercept and time trend.

Table 3 shows the results of the unit root tests ,The results indicate that both variables Economic Growth rate

and financial market development are not stationary on their levels. In other words, they have a unit root. Then, we repeated the unit root test for the first difference for both variables. The results point out that Economic Growth rate and financial market development became stationary after the first difference. Since the calculated absolute values are greater than the critical absolute values at a 1% and 5% levels of significance, the null hypothesis of nonstationary variable can be rejected.

Table 3: Augmented Dickey-Fuller Test

Variable	ADF		Level	First difference
	Critical values 1%	Critical values %5	ADF	ADF
GDP growth	-2.7	-1.96	-0.77	-4.2
FM	-2.7	-1.96	-0.45	-3.5

5.3 Co-integration Test:

There are several ways to test for Cointegration in this study we used Johansen and Juselius test(1990) to explore the long-run relationships among the variables. The results show that there is one (1) cointegrating equation at 0.05 level of significance. This result shows that the Economic Growth rate and financial market development are related in the long run.

Table 4 : Johnson Co integration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob. **
None *	0.552940	12.85023	12.32090	0.0407
At most 1	0.050311	0.774306	4.129906	0.4360

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

5.4 Vector Error Correction:

The vector Error Correction Model (VECM) is used to generate the short run dynamics. The estimation result of the vector error correction (VEC) model is given in Table 5. In the model the lag we used two lags depended on the Akaike Information Criteria (AIC) and Schwarz Information Criteria (SIC).

The Vector Error Correction model depends on following equations:

$$\Delta FM_t = \alpha_0 + \rho_1 e_{t-1} + \sum_{i=1}^m \alpha_i \Delta FM_{t-i} + \sum_{j=1}^n \alpha_j \Delta GDP_{t-j} + U_t$$

$$\Delta GDP_t = \beta_0 + \rho_2 u_{t-1} + \sum_{i=1}^m \beta_i \Delta GDP_{t-i} + \sum_{j=1}^n \beta_j \Delta FM_{t-j} + V_t$$

Our model contains co integration relationship among the variables, then we can proceed to VECM . The estimation of long term relationship of the Economic Growth rate and financial market development are shown in equations

Standard errors in () & t-statistics in []

Cointegrating Eq:		CointEq1	
FM(-1)		1.000000	
GDP(-1)		-63.56434 (17.5837) [-3.61496]	
C		2.693295	
Error Correction:		D(FM)	D(GDP)
CointEq1		-0.059759 (0.01677) [-3.56382]	0.000332 (0.00500) [0.06642]
D(FM(-1))		-0.432891 (0.26275) [-1.64754]	-0.069055 (0.07836) [-0.88130]
D(FM(-2))		-0.386958 (0.26991) [-1.43363]	-0.015813 (0.08049) [-0.19646]
D(GDP(-1))		-3.054619 (1.42455) [-2.14427]	-0.077592 (0.42482) [-0.18264]
D(GDP(-2))		-2.263011 (1.16017) [-1.95059]	0.089614 (0.34598) [0.25902]
C		-0.014865 (0.01643) [-0.90460]	-0.002651 (0.00490) [-0.54087]
R-squared		0.592691	0.149850
Adj. R-squared		0.366409	-0.322456
Sum sq. resid		0.034514	0.003069
S.E. equation		0.061926	0.018467
F-statistic		2.619253	0.317273
Log likelihood		24.27430	42.42338
Akaike AIC		-2.436574	-4.856451
Schwarz SC		-2.153353	-4.573231
Mean dependent		-0.005336	-0.002542
S.D. dependent		0.077798	0.016059
Determinant resid covariance (dof adj.)			1.19E-06
Determinant resid covariance			4.28E-07
Log likelihood			67.42126
Akaike information criterion			-7.122834
Schwarz criterion			-6.461987

stimation Proc:

EC(C,1) 1 2 FM GDP

VAR Model - Substituted Coefficients:

$$D(FM) = -0.06*(FM(-1) - 63.6*GDP(-1) + 2.7) - 0.4*D(FM(-1)) - 0.4*D(FM(-2)) - 3.1*D(GDP(-1)) - 2.3*D(GDP(-2)) - 0.01$$

$$D(GDP) = 0.0003*(FM(-1) - 63.6*GDP(-1) + 2.7) - 0.07*D(FM(-1)) - 0.015*D(FM(-2)) - 0.08*D(GDP(-1)) + 0.09*D(GDP(-2)) - 0.003$$

5.5 The Granger causality test

A simple Granger causality test involving Economic Growth rate and financial market development is written as:

$$GDP_t = \sum_{i=2}^n a_i FM_{t-i} + \sum_{j=1}^n B_j GDP_{t-j} + U_{1t}$$

$$FM_t = \sum_{i=2}^n \eta_i FM_{t-i} + \sum_{j=1}^n \delta_j GDP_{t-j} + U_{2t}$$

The below table show that there is a causal relationship between economic growth and financial market development but in one direction so that changes in from economic growth have effects on financial market development and not vice versa.

Table (6) Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause FM	15	3.08539	0.0900
FM does not Granger Cause GDP		0.76540	0.5447

Conclusions

The study examines a link between economic growth and financial market development. A large number of theoretical and empirical studies have analyzed this relationship. Therefore, this study provides empirical evidence on this relationship in Jordan based on data for the period 2000 to 2018. The paper employed new index of financial market development developed by IMF staff. The relationship between the growth of real GDP and financial market development are investigated using the concept of Granger causality, after testing the cointegration. The empirical results find long run relationship between financial market development and growth rate of real GDP. Also, causality test results show that causality is running from growth rate of real GDP to financial market development. This has the implication that economic growth has 'caused' financial market development in Jordan. On the other hand, the estimate for short run relationship by using The Error Correction Model concludes that no significant relationship between the stock market development and economic growth

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