Financial Development and Economic Growth in Egypt: A Re-investigation

Kamal, Mona

23 July 2013

Financial Development and Economic Growth in Egypt: A Re-investigation[*]

By:
Mona Kamal
July 2013

Abstract

In light of the political and economic conditions that Egypt has challenged during the last two years and its influences, it is crucial to re-investigate the link between financial sector and economic growth using recent data sample. This paper re-explores it using annual data for the period from 1988 to 2012. The results imply that the banking sector development has a unidirectional causal impact on economic growth. However, stock market development does not cause growth. The interpretation of such outcomes has to be taken with caution since other relevant factors are more likely to affect this link.

Keywords: Financial Development, Economic Growth, Egypt.
JEL classification: E44; O53.

[*] The views expressed in this paper were those of the author and did not necessarily represent those of any institution the author was affiliated to.

1. Introduction

The role of the financial development in promoting economic growth has been largely studied by many authors. Theoretical as well as empirical papers have showed that financial development has an impact on economic growth through mobilizing saving, exerting control, allocating resources and improving innovation. (Inoubli and Khallouli, 2011, p.2).

Consequently, any investigation of the relation between economic growth and financial development (EG-FD link, *hereafter*) has to consider both the stock market and banking sector improvements. Many authors have explored this link in different contexts (e.g. Ayadi et al., 2013; Ben Naceur and Ghazouani, 2007; Shen and Lee, 2006).

In principle, a well-developed stock market will increase savings and efficiently allocate capital to productive investments, which leads to an increase in the rate of economic growth. Accordingly, stock markets enhance the set of financial instruments available to savers to diversify their portfolios and potential risks. (Nowbutsing, 2009, p.78).

Nevertheless, economic growth is a complex process that is influenced by several factors other than the stock market. Therefore, it is usually difficult to establish and isolate the causal relation between stock market development, on one hand, and economic growth, on the other hand. (Brasoveanul et al., 2010, p. 67).

Moreover, there is no doubt that the political and economic circumstances that Egypt has faced during the last two years have affected the overall economy and the performance of the *Egyptian Exchange* (EGX, *hereafter*) in a negative way.

A decision of closing the EGX has been taken during the period 28/1-22/3/2011 in the wake of 25th of January Revolution. The main index (EGX 30) has dropped significantly by almost 16% from 6723.2 points (on 24th of January) to 5646.5 points (on 27th of January, before closing the EGX). The share traded value has decreased by around LE 794.4 million and the trading volume by LE 97.1 million.[1]

This is attributed to the massive sale of shares from the side of both Arab and foreign investors during the peak of the political events and portfolio investment outflows. This, in turn, highlights the importance of studying the relation between the stock market evolvement and the Egyptian economic growth using recent data.

Furthermore, banks as the other partner in financial development are the dominant financial institutions in Egypt, as they control most of the financial flows and possess most of the financial assets. (Bolbol et al., 2005, p. 176).

This is reflected in 2012 figures [2], as the aggregate financial position of registered banks operating in Egypt (40 banks) has posted LE 1366.2 billion at end of June 2012 compared with 1269.7 billion at end of June 2011, up by LE 96.5 billion or 7.6 percent.

Banks' deposits (including government deposits) have grown by LE 66.5 billion or 6.9 percent at end of June 2012 (against LE 64.5 billion and 7.2 percent at end of June 2011). In addition, banks' lending and discount balances have grown by LE 32.6 billion or 6.9 percent (against LE 8.1 billion and 1.7 percent).

1 According to Egyptian Stock Exchange Data. http://www.egx.com.eg.
2 Central Bank of Egypt, 'Annual Report for Fiscal Year 2011/2012', pp. 43 & 46-47. The official website of the Central Bank of Egypt: http://www.cbe.org.eg.

Taking into consideration the above developments in financial markets, this topic becomes so demanding for further research, especially, after the downturn that the Egyptian economy has faced after 25th of January Revolution.[3]

This suggests the importance of a frequent exploration of the EG-FD link depending on the economic conditions that the economy is facing which represents the core motive behind this research.

Accordingly, the research objectives are as follows:

- To investigate the EG-FD link using Egyptian annual data for the period from 1988 to 2012.
- To check the relevance of the empirical outcomes to the theoretical assumptions of a causal link between financial growth and economic growth.
- To provide the Egyptian policymakers with recommendations depending on the results.

In addition, this research answers the following questions:

- What is the causal link between financial development and Egyptian economic growth?.
- Is there any change in the EG-FD link if other relevant factors are incorporated in the analysis?.

3 According to the financial development index published in 2012, Egypt's rank has retreated from (the 49th out of 62) in 2011 to the (53rd) in 2012. A very low rank is assigned to the non-banking financial services pillar (the 56th) compared to other emerging market economies and Arab countries. (World Economic forum, 2012, p.12).

2. *Review of the Literature*

In theory, financial development and economic growth are commonly regarded as being positively linked. However, based on the results of extensive empirical literature, this theoretical assumption remains ambiguous. (Shen and Lee, 2006, p. 1909; Levine, 2004, p.85).

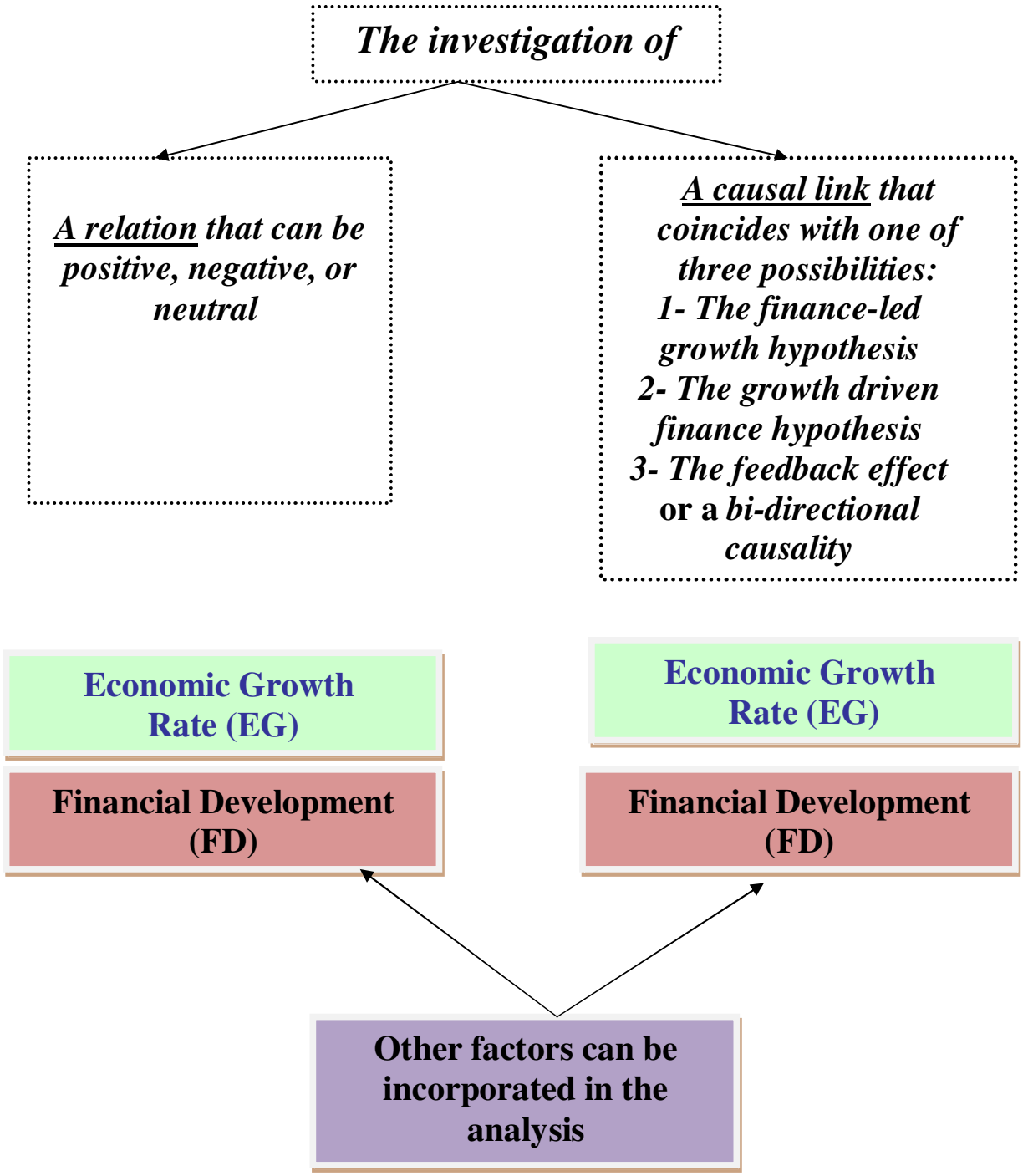
Reviewing the relevant empirical literature has indicated that there have been growing concerns and controversies on saying a final word regarding the EG-FD relation. The findings of the literature have indicated that the EG-FD relation could be *positive*, *negative*, or *neutral*. (Donwa, and Odia, 2010, p.136).

This variety of the empirical results is attributed to the utilization of different proxies for financial development and economic growth in developed as well as developing countries. (e.g. Ayadi et al., 2013; Cecchetti and Kharroubi, 2012; Brasoveanul et al., 2010; Ben Naceur et al., 2008; Ben Naceur and Ghazouani, 2007).

The *positive EG-FD relation* has been illustrated by (Nowbutsing, 2009, p.77) as follows, a large capital market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis. In addition, the value of stock traded should positively reflect liquidity in the whole economy. On the banking sector side, financial intermediaries play an effective role in directing scarce financial resources to potential investment that, positively, promotes future economic growth.

In their seminal paper, (Levine and Zervos, 1998, p. 537) have used data for 47 countries over the period 1976-1993. They have concluded that stock market liquidity and banking sector development are *positively* and significantly correlated to current and future economic growth.

Diagram (1): Two Streams in the Literature



Source: Prepared by the researcher depending on the literature review.

(Ben Naceur and Ghazouani, 2007, p. 297) have found a *neutral or negative EG-FD link.* They have studied EG-FD link on a sample of 11 Arab countries over the 1979–2003 period. They have concluded that *no significant relationship* between banking and stock market development, and growth. The association between bank development and economic growth is even *negative* after controlling for stock market development.

This lack of a relationship must be linked to underdeveloped financial systems in the MENA region that hamper economic growth. Thus, more is needed to be done to reinforce the institutional environment and improve the functioning of the banking sector in the MENA region.

The *mixed EG-FD relationship* is realized in several papers. For instance, (Shen and Lee, 2006, p. 1940) have found that only stock market development has *positive* effects on growth and that banking development has an unfavorable *negative* impact.

The results have indicated that the inclusion of other conditional variables (e.g. proxies for financial liberalization, high-income level countries, and shareholders protection) evidently mitigate the *negative* impact of banking development on growth.[4]

In addition, the paper by (Cecchetti and Kharroubi, 2012) has suggested a mixed EG-FD pattern using a sample of 50 countries observed the past three decades. Their paper has found that financial sector size has an inverted U-shaped effect (i.e. it is positive only up to a point, after which it becomes a drag on productivity growth).

4 The additional variables will indicate that progress in banking development in a high-income country with good shareholder protection, or in a financially liberated country facilitates growth. (Shen and Lee, 2006, p. 1940).
This reflects that the inclusion of control variables for the institutional and legal frameworks affect the EG-FD link. This can be found in the paper by (Ayadi et al., 2013).

This implies that a further increase in the size of the financial system contributes negatively to total factor productivity growth (i.e. more finance is definitely not always better). This evidence, together with recent experience during the financial crisis, have led (Cecchetti and Kharroubi, 2012) to conclude that there is a pressing need to re-assess the relationship of finance and real growth in modern economic systems.

Recently, (Ayadi et al., 2013) have explored the relationship between financial sector development and economic growth, using a sample of northern and southern Mediterranean countries for the years 1985-2009. Their results have indicated that credit to the private sector and bank deposits are *negatively* associated with growth, which implied deficiencies in credit allocation in the region and weakness in financial regulations and supervision.

On the stock market side, the results have reflected that stock market size and liquidity play a significant *positive* role in growth, especially, in countries where the institutions are of a lower quality.

Furthermore, (Billmeier and Massa, 2007, p.4; Akinlo and Egbetunde, 2010; p.19) have demonstrated that a causal relationship between financial development and economic growth has been argued, in the literature, along the following three possibilities:

(i) Financial deepening promotes economic growth (i.e. *the finance-led growth hypothesis*).
(ii) Economic growth stimulates financial development (i.e. *the growth driven finance hypothesis*).
(iii) Financial development and economic growth influence each other (i.e. the two-way causal relationship that is termed *feedback effect* or a *bi-directional causality*).

Concerning Egypt, there is rare empirical investigation of EG-FD association using Egyptian data due to the problem of data limitation. Most of the existing papers rely on annual or quarterly data [5] and end up with a conclusion that the small number of observations casts doubts on the reliability of the statistical results. (e.g. Dobronogov and Iqbal, 2005, p. 11).

As an example of a related work is the paper by Bolbol et al. (2005) who have analyzed the effect of financial markets on total factor productivity and per capita GDP growth rate during the period from 1974 to 2002.

The authors have demonstrated that bank-based indicators have a *negative* effect on growth unless they are interacted with per capita income, while the capital market development has a *positive* influence on factor productivity and growth. (Brasoveanul et al. 2010, p. 66).

On the other hand, reviewing the existing literature implies that the investigation of the causal EG-FD link in Egypt (i.e. the direction of the relationship) is seldom.

To sum up, theory and empirical evidence make it difficult to conclude that the financial system merely - and automatically - responds to economic activity, or that financial development is an inconsequential addendum to the process of economic growth. (Levine, 2004, p. 85).

The literature review indicates that the massive examination of EG-FD relation have not succeeded in reaching to an agreement. This suggests a need for frequent exploration of this association and link depending on the economic conditions that are challenging the economy.

5 The reason behind that is the frequency of published data for Gross Domestic Product (GDP) and the statistical problems that the researcher is more likely to confront from disaggregating this series.

3. The Research Model and Methodology

Any analysis of the EG-FD link has to incorporate the annual growth rate of real per capita (Gross Domestic Product, GDP, *hereafter)* as the dependent variable. Through this paper it will be noted by (EGR).

The following variables are included into the analysis as financial development measures:

Two Measures for stock market development:

- Market capitalization of listed companies as a percentage of GDP is used as a measure for the stock market depth. This variable is denoted as *(SMD1)*.
- The total value of stocks traded as a percentage of GDP is utilized as another measure for stock market liquidity with the notation *(SMD2)*.

Two Measures for banking sector development:

- Money and quasi money (M2) as a percentage of GDP is proxy for banking sector development *(BSD1)*.
- Domestic credit to the private sector as a percentage of GDP is another proxy for banking development *(BSD2)*.

One Measure for the overall financial development:

- Net Foreign Direct Investment (Net FDI) as a percentage of GDP reflects the overall development in the financial sector. The reason is that a well-developed financial market attracts foreign investors due to the investment opportunities and gains *(OFD)*.

The inclusion of these variables in the analysis has a foundation from the literature. According to (Levine and Zervos, 1998, p. 540), in order to assess the relationship between economic growth and financial development, the researcher should include:

(i) Empirical indicators of stock market (e.g. its liquidity, size, volatility, and integration with world capital markets).
(ii) A measure of banking development.
(iii) Measures of economic growth and its components.

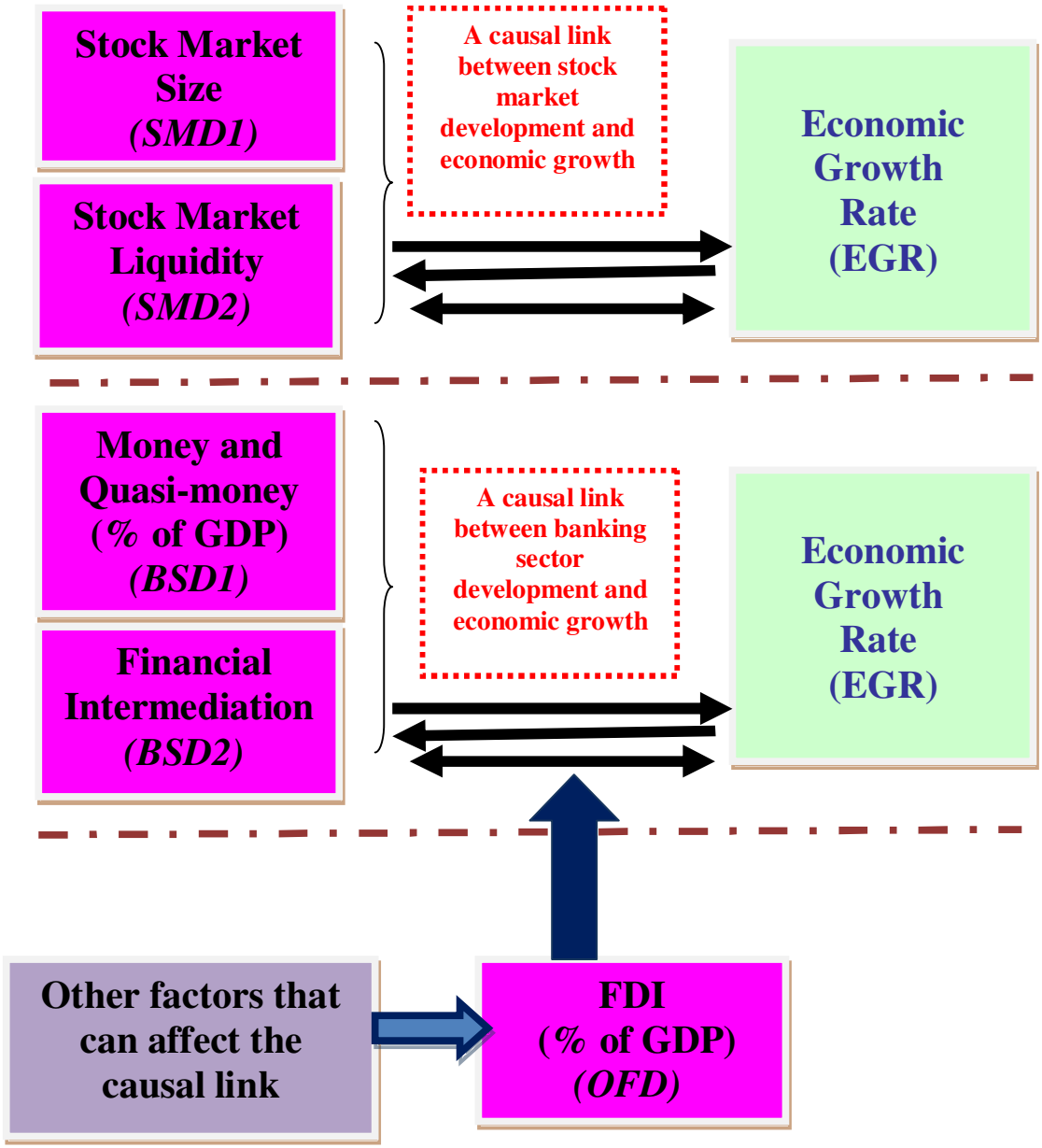
Following this recommendation, the depth of stock market is captured by the market capitalization - in this paper - as in many other research papers (e.g. Donwa and Odia, 2010, p. 139; Shen and Lee, 2006, p. 1915). Whereas, the value of stock traded measures the market liquidity (e.g. Nowbutsing, 2009, p.77).

In the same vein, a broader definition of money and the amount of credit to the private sector measure the depth of financial intermediation. (Billmeier and Massa, 2007, p. 3).

Furthermore, (Dobronogov and Iqbal, 2005, p. 19) have suggested that economic growth in Egypt has been constrained by the inefficiency of financial intermediation rather than lack of financial resources. For that reason, the estimations – in this paper – have incorporated two proxies for financial intermediation, namely, credit to the private sector as a percentage of GDP and monetary aggregates (M2) as a percentage of GDP.

(FDI) is increasingly being recognized as a major source of economic development. The general belief is that (FDI) facilitates the transfer of technology, organizational and managerial practices, skills and access to the international market. (Nowbutsing, 2009, p.82). It is utilized - in this paper - as a relevant factor that possibly affects the EG-FD causal link.

Diagram (2): The Research Model and Variables



Source: This diagram represents the theoretical assumptions concerning the causality between the variables.

(Diagram 2) represents the basic framework for any research covers the EG-FD causality. However, it is a great challenge to find a stable equation that includes all the above variables and satisfy the statistical properties using Egyptian data. Another challenge is to assess the directional influence of one variable to another. Depending on the seminal work by Granger (1969), the approach is simply the following:

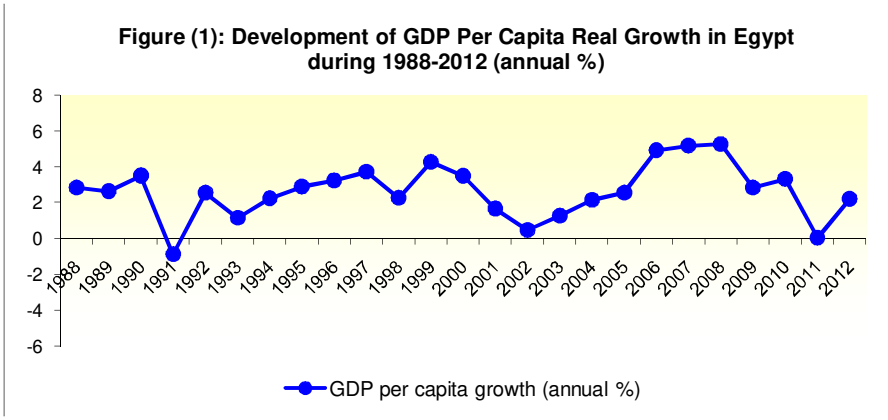
X is a cause of Y (i.e. $X \Rightarrow Y$), X is able to increase the accuracy of the prediction of Y with respect to a forecast when considering only past values of Y (i.e. X is a cause of Y if it is useful in forecasting Y).

Formally, given an information set Ω_t with the form, $(X_t,.....,X_{t-i},Y_t,.....,Y_{t-j})$ one can say that X_t is Granger causal for Y_t with respect to Ω_t if the variance of the optimal linear predictor of Y_{t+h}, based on t, has smaller variance than the optimal linear predictor of Y_{t+h} based only on lagged values of Y_t, for any h. Therefore, X Granger-causes Y if and only if $\sigma_1^2(Y_t : Y_{t-j}, X_{t-i}) < \sigma_2^2(Y_t : Y_{t-j})$, with j and i = 1, 2, 3, . . . ,n and σ^2 representing the variance of the forecast error. (Mahdavi and Sohrabian, 1991).

4. Data Issues and Sources

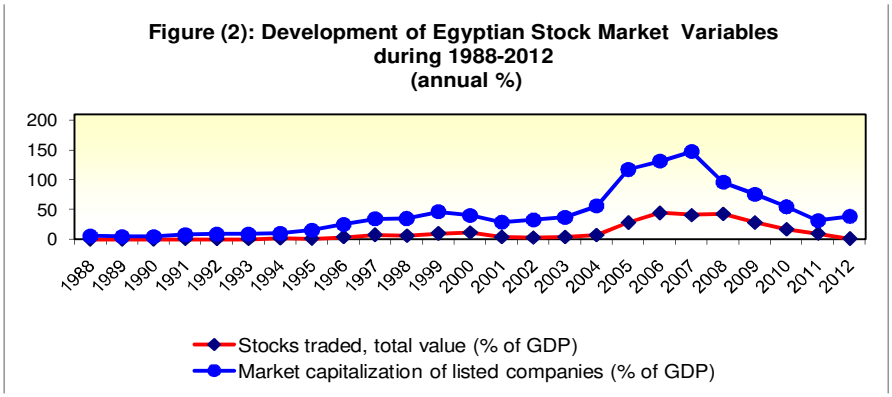
Annual data for the variables of interest span from 1988 to 2011. They are collected from the World Bank database available at its official website. (https:// data.worldbank.org/). However, data for the year 2012 are collected from the annual report of the Central Bank of Egypt (CBE) available at its official website. (https:// www.cbe.org.eg/).

As a simple illustrative tool, figure (1) highlights the performance of GDP per capita real growth rates. As any economy, it has a cyclical pattern of upturns and downturns depending on the economic and political conditions.



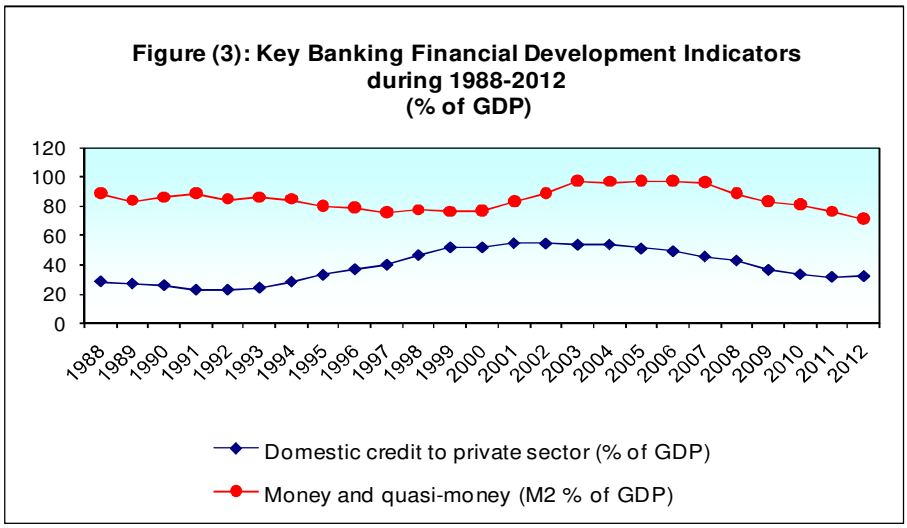
Source: The World Bank database & the Central Bank of Egypt's publications.

Figure (1) shows a boom during the period from 2003 to 2008. Then, the economy retreated afterwards. However, the economy recovered in 2012 from the negative impact of the 25th revolution. Figure (2) indicates an improvement in the measures of stock market depth and liquidity in the period from 2005 to 2007 compared with the previous period from 1988 to 2004.



Source: The World Bank database & the Central Bank of Egypt's publications.

Relating figures (1), (2) and (3) indicates the co-movements between the economic boom in 2003-2007 and the stock market and banking sector performance.



Source: The World Bank database & the Central Bank of Egypt's publications.

This simple inspection points out to a possible link between the performance of the financial sector and economic growth. This, in turn, indicates the importance of a deeper investigation of the causal link between financial development indicators and economic growth.

5. *The Results*

Utilizing annual data for the period 1988-2012 has resulted in an estimated regression model that does not satisfy the stability conditions. Hence, any interpretation of the results is unreliable. The most appropriate solution is a causality test within a Vector-Auto Regression (VAR) framework. The stability tests of the estimated VARs have confirmed the reliability of the equations.

A three-variable Vector-Auto Regression (VAR) framework with the following order (EGR), (BSD_1) and (BSD_2) is estimated to reflect the causality between the banking sector development and economic growth.

Another specification that includes (EGR), (SMD1) and (SMD2) is estimated in order to show the causal link between stock market development and economic growth. The optimal lag length is specified using the Likelihood Ratio (LR) test. The results imply that 2 lags are appropriate for the stability of the VAR system. [6] The following table indicates the outcomes:

Table (1): VAR Granger Causality

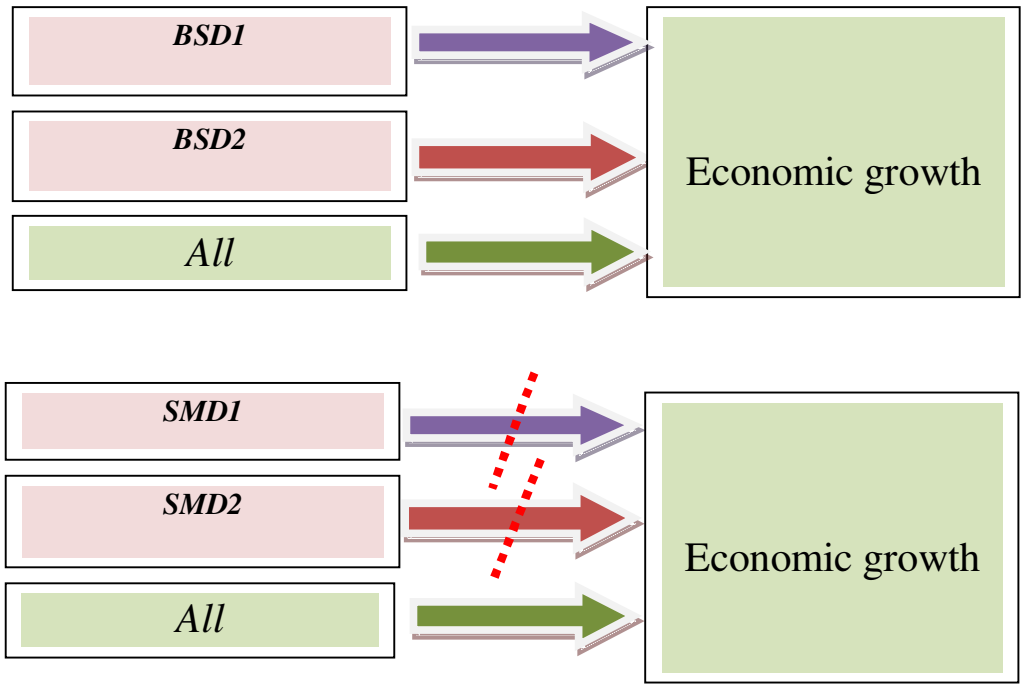
Excluded Variables	Chi-squared	Degrees of Freedom	Probability
Dependent Variable is EGR			
BSD_1	12.36838	2	0.0021*
BSD_2	8.527683	2	0.0141*
All	13.40951	4	0.0094*
Excluded Variables	**Chi-squared**	**Degrees of Freedom**	**Probability**
Dependent Variable is EGR			
SMD_1	0.973840	2	0.6145
SMD_2	4.170644	2	0.1243
All	12.84230	4	0.0121*

Source: The researcher's calculations.
The sample covers the period from 1988 to 2012.
** Implies that the lags of the excluded variable affect EGR with 5% significance level.*

6 The results are influenced by the number of the lags, the order of the variables included in the VAR and the stationary of the series. The included variables are stationary at levels except (SMD_1) and (SMD_2) are first differenced stationary (Refer to: Table A4 in the Appendix).

The outcomes indicate that there is a unidirectional causality from the banking sector development measures to economic growth in Egypt. On the contrary, stock market development does not cause growth. In addition, the inclusion of (FDI) through estimating four- variables VAR models does not change the previous outcome.

Diagram (3): The Direction of the Causality between the Main Variables of Interests



Source: Prepared by the researcher depending on the results.

6. Concluding Remarks

There is rare examination of the causality between financial development and economic growth in empirical studies using Egyptian data. Moreover, the economic conditions that Egypt has faced during the last two years can provide new information regarding the EG-FD link that differs from the existing literature.

The results imply that the banking sector development has a unidirectional causal impact on economic growth. This coincides with the finance-led growth hypothesis in the theoretical literature. However, stock market development does not cause growth. The inclusion of (FDI) does not change the previous outcomes.

Furthermore, the potential outcomes can be interpreted as follows:

Firstly, the banking sector is the most dominant financial sector in Egypt, especially, after the downturn that the Egyptian economy has faced after 25th of January Revolution.

Secondly, the Egyptian Exchange (EGX) is often sensitive to any political or uncertain conditions which hamper the existence of any solid relation between economic growth and stock market development.

Thirdly, the interpretation of such outcomes has to be taken with caution since other relevant factors are more likely to affect this link.

I end up with the following two policy recommendations:

(1) Additional banking sector reforms are required for enhancing its intermediary role.
(2) A frequent revision of the size of savings allocated for prominent investments is essential.

References

- Akinlo, A. E. and Egbetunde, A. T. (2010) 'Financial Development and Economic Growth: The Experience of 10 Sub-Saharan African Countries Revisited', *The Review of Finance and Banking,* 2 (1), pp. 17-28.
- Ben Naceur, S., S. Ghazouani and M. Omran (2008), 'Does stock market liberalization spur financial and economic development in the MENA region?', *Journal of Comparative Economics*, 36, pp. 673-693.
- Ben Naceur, S., and Ghazouani, S. (2007) 'Stock Markets, Banks, and Economic Growth: Empirical Evidence from the MENA Region', *Research in International Business and Finance*, 21, pp. 297–315.
- Billmeier, A. and Massa I. (2007)' What Drives Stock Market Development in the Middle East and Central Asia-Institutions, Remittances, or Natural Resources?', *International Monetary Fund*, IMF Working Paper Series No. 157, July.
- Bolbol, A., Fatheldin, A., and Omran, M. (2005) 'Financial Development, Structure, and Economic Growth: The Case of Egypt, 1974-2002', *Research in International Business and Finance*, 19, pp.171-194
- Brasoveanul L. O., Dragota V., Catarama D., Semenescu A. (2010) 'Correlations between Capital Market Development and Economic Growth: The Case of Romania', *Journal of Applied Quantitative Methods (JAQM)*, 3(1), pp. 46-75.
- Dobronogov, A. and lqbal, F. (2005) ' Economic Growth in Egypt: Constraints and Determinants', *Middle East and North Africa Working Paper Series No. 42*, October.

- Donwa, p. and Odia, J. (2010) 'An Empirical Analysis of the Impact of the Nigerian Capital Market on Her Socio-economic Development', *J Soc Sci*, 24(2), pp. 135-142.
- Granger, C. W. J. (1969) 'Investigating Causal Relations by Econometric Models and Cross-spectral Methods', Econometrica, 37 (3), pp. 424-438.
- Levine, R. (2004) 'Finance and Growth: Theory and Evidence', National Bureau of Economic Research (NBER), *Working Paper Series No. 10766*, September.
- Levine, R. and Zervos, S. (1998) 'Stock Markets, Banks, and Economic Growth', *The American Economic Review*, 88 (3), June, pp. 537-558.
- Mahdavi, S. and Sohrabian, A. (1991) 'The Link between the Rate of Growth of Stock Prices and the Rate of Growth of GNP in the United States: A Granger Causality Test', The American Economist, 35(2), pp. 41-48.
- Nowbutsing, B. M. (2009) 'Stock Market Development And Economic Growth: The Case Of Mauritius', *International Business & Economics Research Journal* , 8 (2), pp. 77-88.
- Shen, C. and Lee C. (2006) 'Same Financial Development yet Different Economic Growth: Why?, *Journal of Money, Credit and Banking*, 38 (7), October, pp. 1907-1944.
- Zhang, K. (2003) 'Does Financial Development Promote Economic Growth in the East Asia?', *China Journal of Finance,* 1, pp. 1–10.

On-line Resources:

- Ayadi,R., Ben-Naceur, S., De Groen,W. P., and Arbak E., (2013) 'Financial Development, Bank Efficiency and Economic Growth across the Mediterranean', *MEDPRO Technical Report*, No. 30, March. http://www.ceps.eu/book/financial-development-bank-efficiency-and-economic-growth-across-mediterranean [Accessed on 14/5/2013].
- Cecchetti, S. and E. Kharroubi (2012) 'Reassessing the Impact of Finance on Growth', Bank for international Settlements (BIS), Working Papers No 381, July. http://www.bis.org/publ/work381.pdf [Accessed on 14/5/2013]
- Central Bank of Egypt, 'Annual Report for Fiscal Year 2011/2012'. http://www.cbe.org.eg [Accessed 9/5/2013].
- Inoubli, C. and Khallouli, W. (2011) 'Does Financial Development Impact on Growth? Empirical Evidence with Threshold Effect in the MENA Region', *Economic Research Forum*, 17th Annual Conference: Politics and Economic Development, March. http://www.erf.org.eg/CMS/uploads/pdf/Chokri%20&%20Wajih%20Khallouli.pdf [Accessed on 9/4/ 2013].
- World Economic Forum (2012) 'The Financial Development Report for 2012'. http://www3.weforum.org/docs/WEF_FinancialDevelopmentReport_2012.pdf [Accessed on 14/5/2013]

Data Sources:

- Central Bank of Egypt (CBE) data available at its official website. https:// www.cbe.org.eg/.
- Egyptian Stock Exchange data available at its official website. http://www.egx.com.eg/English/homepage.aspx
- World Bank database available at its official website. https:// data.worldbank.org/.

Appendix

Table (A1): Summary of Relevant Variables in the Literature

The Variable	***The Paper***	***The Variable Definition***
Economic growth	*Shen and Lee (2006)* *Levine and Zervos (1998)*	*Growth rate of real per capita (GDP)*
The size of the stock market	*Ayadi et al. (2013)* *Brasoveanul et al. (2010)* *Nowbutsing (2009)*	*Market capitalization as a percentage of GDP*
The liquidity of the stock market	*Ayadi et al. (2013)* *Nowbutsing (2009)*	*Value of share traded as a percentage of GDP*
Financial Intermediation	*Ayadi et al. (2013)* *Levine and Zervos (1998)*	*Domestic credit to the private sector as a percentage of GDP*
Overall Financial Development	*Ayadi et al. (2013)* *Nowbutsing (2009)*	*Net foreign direct investment as a percentage of GDP*

Source: Prepared by the researcher depending on the literature review.

Table (A2): Summary of the Results of Relevant Literature

The Author(s)	***Sample & Methodology***	***Main Results***
Ayadi et al. (2013)	*A sample of northern and southern Mediterranean countries for the years 1985-2009. They have utilized panel regressions.*	*The paper has found mixed results. Financial development has a significant negative impact on growth. On the contrary, stock market development has a positive impact, especially, in countries with low quality institutions.*
Cecchetti and Kharroubi (2012)	*A sample of 50 advanced and emerging market economies over the period 1980-2009. They have utilized panel regressions.*	*The paper has found that financial sector size has an inverted U-shaped effect on productivity growth.*
Ben Naceur and Ghazouani (2007)	*Data for 11 Arab countries over the 1979–2003 period. They have utilized Generalized Method of Moments (GMM) in panel regression settings.*	*Financial development could negatively influence the economic growth in countries with underdeveloped financial systems.*
Shen and Lee (2006)	*Data for 48 countries. The sample spans from* 1976 to 2001. *They have used the linear model (the ordinary least squares technique).*	*The paper has concluded that stock market development has a positive effect on growth, whereas banking development has an unfavorable (i.e. negative) or no effect at all on growth.*
Bolbol et al. (2005)	*Data for Egypt over the period from 1974 to 2002.*	*The results have showed that banking financial development indicators have negative impact on growth unless other variables such as capital market development are included, then a positive influence on factor productivity and growth occurs.*

Table (A2) (Contd.): Summary of the Results of Relevant Literature

The Author(s)	***Sample & Methodology***	***Main Results***
Dobronogov and Iqbal (2005)	*Data for Egypt over the period from 1986 to 2003. They have utilized logs-in-logs first differences regressions*	*In their estimation they have considered Credit to private sector as a percentage of M2 as a financial development variable. It has a positive impact on economic growth*
Zhang (2003)	*Data for 8 Asian countries. The sample spans from 1960 to 1999. He has utilized both panel data and time-series data*	*There was no significant connection between banking development and economic growth.*
Levine and Zervos (1998)	*Data for 47 countries. The sample spans from 1976 to 1993. They have used pooled cross-section time-series method.*	*The paper has found that stock market liquidity and banking sector development are positively and significantly correlated with current and future rates of economic growth.*

Source: Prepared by the researcher depending on the literature review.

Table (A3): Descriptive Statistics of the Main Variables

Sample: 1988 2012

	(EGR)	(SMD1)	(SMD2)	(BSD1)	(BSD2)	(OFD)
Mean	2.64	32.58	10.90	84.77	38.97	2.46
Median	2.60	28.70	4.00	84.54	36.53	1.24
Maximum	5.30	106.80	44.20	97.35	54.93	9.34
Minimum	-0.90	4.10	0.20	70.96	22.27	0.29
Std. Dev.	1.50	27.52	14.23	7.72	11.59	2.51
Skewness	-0.29	1.28	1.40	0.25	0.04	1.66
Kurtosis	3.07	4.01	3.54	2.13	1.51	4.74
Jarque-Bera	0.36	7.85	8.47	1.06	2.33	14.63
Probability	0.84	0.02	0.01	0.59	0.31	0.00
Sum	66.11	814.58	272.45	2119.28	974.37	61.61
Sum Sq. Dev.	54.01	18170.43	4857.11	1430.28	3223.36	150.86
Observations	25	25	25	25	25	25

Source: The researcher's calculations.
The sample covers the period from 1988 to 2012.

Table (A4): Unit Root Tests for the Main Variables

Variable	**ADF Statistic (*)**	**Order of Integration**
GDP Per Capita Real Growth Rate (*EGR*)	-3.962983	I(0)
Market Capitalization (% of GDP) *(SMD1)*	-3.740542	I(1)
Stock Traded, Total Value (% of GDP) *(SMD2)*	-4.305244	I(1)
Monetary Aggregate (M2 % of GD) *(BSD1)*	-3.226290	I(0)
Banking Development Indicator (Domestic Credit to Private Sector (% of GDP) *(BSD2)*	-3.762394	I(0)
Foreign Direct Investment (% of GDP) *(OFD)*	-3021549	I(0)

Source: The researcher's calculations.

- The sample covers the period from 1988 to 2012.

-Calculated using Eviews software.

- Unit root tests were performed on equations with intercept and no time trend since the graphical inspection showed the absence of any obvious trends in the time series.

-The lag length was chosen to minimize the Schwarz information criterion.

(*) Denotes significance at 5% level according to the Augmented Dickey Fuller distribution's critical values.