

The Macrotheme Review

A multidisciplinary journal of global macro trends

The Determinants of Financial Development: Empirical Evidence from Egypt

Marwa A. Elsherif
Helwan University, Cairo, Egypt

Abstract

Following the globalization trend, Egypt embraced the Economic Reform and Structural Adjustment Program (ERSAP) in 1991 as a corrective measure to the deteriorating economic situation. This program included both domestic financial sector deregulation and capital account liberalization. With the implementation of the financial liberalization program, many adjustment measures had to be undertaken. The purpose of this study is to investigate the determinants of financial market development in Egypt using a time series analysis for the period 1974–2012. The empirical results based on two investigating approaches, ARDL (Autoregressive Distributed Lag Model) and Johansen Test for Cointegration, both models indicate that financial development –which is explained by different four indicators- is affected by economic growth, trade openness, investment, human capital, and per capita GDP, while inflation adversely influences financial development in Egypt. The paper is outlined as follows- following the introduction, section two reviews various related literatures on financial development, section three reviews history of financial development in Egypt, section four discusses the data analysis, methodology and findings, and section five provides conclusion, and recommendations.

Keywords: economic growth, financial development, investment, trade openness

1. Introduction

Development of the financial system is a corner stone of economic development. The stage of development and the depth of the financial sector are key elements that differentiate developing and developed countries. The financial system is essential to an economy because it is responsible for resource allocation.

Well-working financial intermediaries may affect positively economic development through different channels: reducing inflation and transactions, improving the allocation of resources (through fund pooling, risk diversification, liquidity management, screening, and monitoring), increasing saving rates, and promoting the development of markets and instruments that enable risk sharing and facilitate economic growth.

In recent decades, most of the middle-eastern countries tried to implement the economical reforms and structural adjustments. Major part of these plans was involved with financial sectors. As a result of this progress, financial markets in these countries are considered as an important phenomenon and their roles increased in international financial system.

Therefore, Egypt was not separated from middle-eastern evolution trend and performed these reforms in its financial structure. This study aims at investigate the determinants of financial sector development in Egypt.

The paper is organized as follows; following the introduction, Section 2 highlights the main literature on determinants of financial development. Section 3, presents financial sector development in Egypt. Section 4 discusses the data analysis, methodology and findings. And section 5 provides conclusion, and recommendations.

2. Literature on Determinants of Financial Development

It is viewed that financial sector liberalization and reform are compulsory aspects to attain economic growth. Remarkable work on this subject can be attributed to Gurley and Shaw (1955) and Goldsmith (1969). For instance, they described “development as being about finance as well as goods” and that the process of development is accompanied by the “institutionalization of savings and investment” (Gurley and Shaw, 1955).

Similarly, Goldsmith’s cross-country studies covering 35 countries showed “a strong positive trend in the ratio of financial institutions’ assets to gross domestic product” suggesting higher incomes lead to greater financial development (Goldsmith, 1969) and hence establishing a positive link between finance and economic growth. Nonetheless, the analysis did not control for initial conditions and country characteristics, nor did it permit any conclusion on causality or the relative strengths of the transmission channels. Subsequent empirical research has established, however, bi-directional causality between financial sector development and economic growth. Multitudes of papers have covered this link, attempting to explore the direction of this causality, as well as the importance of other related/unrelated factors affecting the link.

The early literature on financial development and the role of financial liberalization can be traced back to McKinnon (1973) and Shaw (1973), who both argued that financial development can be hindered by government restrictions on the operation of financial systems, such as interest rate ceilings, directed credit programs, reserve and liquidity requirements and these may contrarily affect the quality and quantity of investment.

Erb et al (1996) showed that expected returns are related to the magnitude of political risk. In both developing and developed countries, the lower the level of political risk the lower is required returns.

According to La Porta et al. (1997) “... legal traditions that shape the laws and enforcement mechanisms and protect the rights of outside investors have influence on financial development”. Demirguc-Kunt and Maksimovic (1998), showed that firms in countries with effective legal system are able to grow faster, by relying more on external finance. Institutional

and legal settings do have an important bearing on financial sector development¹.

Ross Levine illustrated a framework to show why financial markets arise, what purpose and functionality finance serves and also how this leads to economic growth. The functions of financial systems are broken down into five key functions including: i. trading, hedging, pooling and diversifying of risk; ii. resource allocation; iii. monitoring and corporate control; iv. mobilizing savings and v. facilitating exchange of goods and services (Levine, 1997).

Recent researches emphasized the role of the banking sector² in economic growth. King and Levine (1993a, b) showed that bank development affects economic growth³ in a sample of more than 80 countries. Levine (1997), Rousseau and Wachtel (1998), Beck et al. (2000) and Levine et al. (2000) have confirmed this finding. However, these studies have neglected the role of the stock market.

As an essential part of financial development, stock markets have received an attention over the last span of time, as a source of economic growth. The theoretical argument for linking financial development to growth is that a well-developed financial system performs several critical functions to enhance the efficiency of intermediation by reducing information, transaction, and monitoring costs. Further more, the stock market provides an important indicator for company valuation, and the prospect of macroeconomic fundamentals.

With the growing importance of stock markets in the context of financial liberalization and global integration, a number of theoretical and empirical studies have focused on stock market indicators and economic growth. Their findings showed how stock market development might boost economic growth. Levine and Zervos (1998), for instance, found that stock market development plays an important role in predicting future economic growth. The results of Beck and Levine (2004) confirmed these findings. Using a panel data set of 40 countries and applying the generalized method of moment technique, they found that stock markets and banks positively influence economic growth. Garcia and Liu (1999) examined the macroeconomic determinants of stock market development in a sample of Latin American and Asian countries. GDP growth, investment growth, and financial intermediary sector development are important factors. Yartey (2008) found that a percentage point increase in financial intermediary sector development tends to increase stock market development in Africa by 0.6 points, controlling for macroeconomic stability, economic development and the quality of legal and political institutions.

Arestis et al. (2002) examined the impact of financial liberalization policies on financial development for six developing countries over the period 1955-1997. Their findings showed that financial liberalization is a much more complex process and its effects on financial development are ambiguous.

¹ The extent of creditor rights protection has an independent effect on financial sector development (See La Porta et al. (1998), Levine and Zervos (1998) and Djankov et al.(2006)).

² A more developed banking system mobilizes savings and enhances efficiency towards productive investment.

³ Since banking crises usually lead to recessions, an expansion of domestic credit would then be associated with growth pick up.

The impact of trade openness on enhancing financial development has been tested by Rajan and Zingales (2003), they argued that, if a country becomes more open to foreign competition or international flows of capital, these incentives are weakened by the resistance of the financial intermediaries and the industrialists, as they have worries towards the threats of new entrants into financial markets that might limit their interests. Closed political systems are more likely to hinder the development of financial systems that promote competition and threaten entrenched powers than open political systems.

Law and Demetriades (2004) examined the relationship between trade openness and financial development, they employed dynamic panel data techniques using 43 developing countries over the period 1980–2000, on data set that contains two financial development indicators (banking systems and stock markets), a number of alternative proxies for financial and trade openness and institutional quality indicators were used. Their results provided support for the Rajan & Zingales (2003) hypothesis, which states that, the simultaneous opening of both capital flows and trade will encourage financial development.

The importance of the government's participation in financial markets has been underlined by Gerschenkron (1962), he focused on the development view and argued that the government could start both financial and economic development through its financial institutions. However, Yeyati et al. (2005) investigated the role of state-owned banks in influencing financial development and economic growth using cross-country data. Their results showed that in developing countries, state-owned banks are associated with lower profitability than comparable privately owned banks. Moreover, this result supports La Porta et al. (1997), who argued that the government ownership of banks is associated with a slower development of the financial system and hence slower economic growth.

3. Financial Sector Development in Egypt

The history of the Egyptian financial development has witnessed multiple phases depending on the economic policies and strategies adopted by the government: the Revolutionary Socialists during the 1960s, the Open Door Policy during the 1970s, the Economic Reform and Structural Adjustment Program (ERSAP) during 1990s, and 2011 revolution.

3.1 The Revolutionary Socialists (1960-1973)

Before 1960 Nasser's⁴ foreign policy for Egypt was creating a new image for Egypt in the Arab world. Egypt ruled drastic policies of agricultural reform and nationalization, land redistribution, universal healthcare and education, raising the minimum wage, all with the intention of better leveling of vertical distribution of income, and horizontal income equalization between rural and urban areas (Cooper, 1982).

With regards to the financial sector, the pre-revolution dominance of foreign ownership of banks induced to be eliminated. For example, Law 22 of 1957 was established to remove British

⁴ Gamal Abdel Nasser Hussein (15 January 1918 – 28 September 1970) was the second President of Egypt, serving from 1956 until his death.

and French ownership in the corporate and banking sector. Similarly, greater control was bestowed upon National Bank of Egypt (NBE), giving it functionality as a Central Bank, with better governance over the credit market (Mohielden, 2000).

The nationalization increased the amount of potential saving and hence investment from 14% during 1950s to 18% and 17.4% in 1963 and 1964 respectively (Al-Sayyid, 2003). After the establishment of the Central Bank of Egypt at 1961, it controlled commercial banks through ceilings and reserve ratios that were raised to 17.5% in 1962 to 20% in 1966. This resulted a reduction in credit to private sector as it went down from 18.6% to 11.2% in 1973. However, despite these steps towards banking sector nationalization, given Nasser's drive to create a centrally planned economy, almost all capital was being directed to public projects and the public deficit, hence the private sector remained credit-starved.

Between 1967 and 1973 the Egyptian economy had experienced two wars and it was a transition period in Egypt from State Socialism to Capitalism known as Open Door Policy initiated 1974 by Alsadat⁵.

3.2 The Open Door Policy (1970-1990)

Presence of Open Door was the first step to return to private enterprise activities and opening the doors to foreign goods and investment and deeper political ties with other countries (Amin, 2011).

The driving force of this change was to boost the private sector, encourage foreign investment and leverage Egypt's natural resources and human capital base. Thus, Egypt tried to pitch itself as a safer investment climate and undertook reforms to make investments attractive (McDermott, 1988).

A series of financial sector reforms started to be implemented from 1974 onwards. These included: i) Law 43/1974 that reduced Egyptian ownership to 51%, allowing foreign ownership of the remaining 49%, ii) Law 120/ 1975 that gave the Central Bank of Egypt supervisory and regulatory power over the banking sector, while also making it an independent legal authority, iii) Law no. 43/1974 that liberalized the foreign exchange market and some import commodities, while also providing incentives/subsidies for domestic and foreign private companies and iv) Law 32/1977 that provided further tax exemptions and benefits for private firms (Mohieldin, 2000). Foreign and joint venture banks started to be set up to benefit from these incentives and reforms.

Over this period, economic growth showed a positive trend. In fact, over the 1973 to 1981 period, the positive growth in real GDP reflected the impact of externally- facing sources of GDP including oil earnings, worker remittances, tourism and Suez Canal tolls. While economic growth was strong from the 1970's, by the late 1980's, then, after the death of Alsadat, the downward trend was triggered by lower oil prices from 1985 onwards, but its full extent was postponed by

⁵ Muhammad Anwar El Sadat (25 December 1918 – 6 October 1981) was the third President of Egypt, serving from 15 October 1970 until his assassination by fundamentalist army officers on 6 October 1981.

heavy foreign borrowing that overshadowed this decline in external revenues (Soliman, 1999).

3.3 The Economic Reform and Structural Adjustment Program ERSAP (1990-2011)

In 1991, when it entered economic reform and structural reform (ESRAP) package with the IMF, Egypt was suffering from unsustainable debt levels, inflation, a wide current account deficit and an undiversified economy (Harrigan and el-Said, 2010).

Liberalizing financial reforms pursued allowed the number of commercial banks to rise from 7 in 1974 to almost 81 by 1990, with a speculative credit boom following, such that by 1989, 26 % of private and investment loans were in default. These defaults coupled with global deregulation that allowed for a surge in private foreign currency transfers from expatriate Gulf workers that dried up when the Gulf War hit in 1991, resulted in a crisis in Egypt's financial system (Soliman, 1999).

ERSAP consisted of reforms including: i) macroeconomic stability, ii) domestic price reform, iii) tax reforms, iv) financial liberalization, v) trade liberalization, vi) banking sector reforms, vii) interest rate liberalization, viii) greater private sector development and ix) lower state control. It consisted of two phases. The first (1991 to 1996) was focused on making Egypt's economy a purely market-based and export oriented one with a greater role for the private sector, while the second (1997-2000) placed greater emphasis on macroeconomic stability and further financial reform and liberalization (Al Mashat and Grigorian, 1998).

Moving into the 2000's Egypt kicked financial and other economic reforms into higher gear. One of the first changes to occur was the currency devaluation in 2003. Then under the financial sector reform program in late 2004, further reforms included large-scale bank privatization, reducing state ownership in banks and strengthening of overall regulatory capacity (Mohieldin and Nasr, 2007:712). Additional reforms included Law 91/2005 that reduced the corporate tax rate from 32-40% to flat 20% rate for all firms, with personal income tax also being reduced to a flat 20% and greater liberalization of the capital markets (Mohieldin, 2000).

The 2011 revolution appears as proof of this disconnect between on the ground life and headline growth and can perhaps be linked to the adoption of a development model that favored the ruling elite and large private businesses and hence relied excessively on market forces, without effective measures to curb abuse of market power, prevent corruption" (Kandeel, 2011)

4. Data and Methodology

4.1 Data

According to the World Bank income group classification, Egypt is a lower-middle income economy; this analysis is based on a time series dataset spanning the period of 1974–2012 at annual frequency.

In this study, data were extracted from World Bank Financial Development and structure

Dataset⁶, World Development Indicators⁷ and International Financial Statistics databases⁸. It is important to analyze financial development in Egypt across time, focusing only on an individual year could result in incorrect judgment of relative performance as they could be affected by short-term particular turns of financial development due to business cycle effects or policy changes. The scope of the sample time span helps reduce the risk that results are heavily influenced by macroeconomic circumstances of particular years.

4.2 The Econometric Model

By following the standard literature of Chin and Ito (2005); Huang (2005); Krause and Rioja (2006); Padachi, Rojid and Seetanah (2008); Levine et al. (2000) and Seetanah (2008), financial development is influenced by the following factors specified in the economic model detailed below:

$$FD = f(XM, FDI, GDFCF, SSE, PCGDP)$$

Definition of Variables

In empirical analysis the following variables are used (summary statistics in figure (1)).

FD financial development is the dependent variable, which can be quantified by different measures:

LQ The monetary aggregates, particularly liquid liability as a measure of the size of the financial system, it is the ratio of liquid liabilities (M3) to the country's Gross Domestic Product (GDP)⁹, it is used as a distinctive measure of 'financial depth' and has been commonly used by (McKinnon, 1973; and King and Levine, 1993a).

PC as a measure of banking sector development, it measures the value of credits by financial intermediaries to the private sector divided by GDP, the benefit of using this measure of financial development is that instead of only calculating the financial sector size, PC focuses on credit issued to the private sector and separate it from credit issued to governments, government agencies and public enterprises. Additionally PC eliminates credits issued by the central bank and it has been broadly used as an indicator since it is superior to other measures of financial development (Levine et al., 2000)¹⁰.

⁶ Available at, <http://econ.worldbank.org> (Updated November 2013)

⁷ Available at, <http://data.worldbank.org>

⁸ Available at, <http://www.imf.org/external/data.htm>

⁹ Liquid liabilities encompass currency plus the demand deposits and interest-bearing liabilities of banks and non-bank financial intermediaries.

¹⁰ Greater levels of PRIGDP may be assumed to be synonymous to greater levels of financing services thus superior financial intermediary development.

MC Stock Market Capitalization over GDP as a measure of the equity market size.

TR Capital Market Turnover ratio¹¹ indicates how developed the capital market is. Higher turnover would signal more activity, implying more confidence and efficiency in the market and the integral role it plays in support of financial development and economic activity.

Among the explanatory variables the following variables are used:

XM is total of Export and Import divided by the GDP of the country as a measure of trade openness. With the introduction of globalization more countries are increasingly implementing trade liberalization that has been demonstrated to have positive impact on financial development.

FDI is Foreign Direct Investment divided by GDP i.e. FDI-GDP ratio.

GDFCF is Gross Domestic Fixed Capital Formation divided by GDP, which estimates investment rate. Investment rate is an important factor for financial development because higher investment is an indication for financial development.

SSE is the Secondary School Enrolment ratio as a proxy for the quality of human capital. To support the institutions, which are crucial for financial development, a well-educated population is of utmost importance for the well functioning of the financial system.

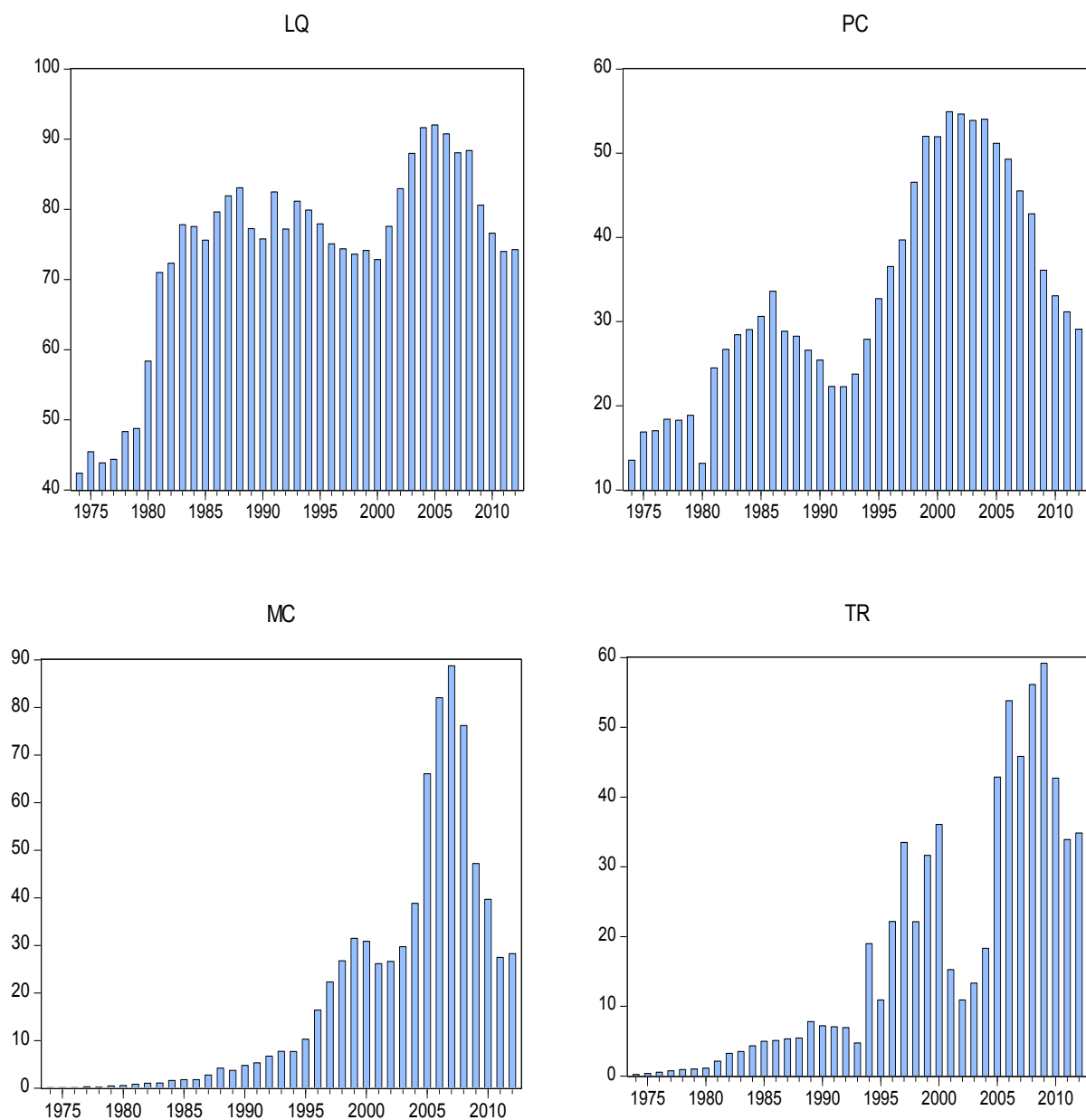
CPI is the Consumer Price Index, which measures the average price of consumer goods and services bought by households. The percent change in CPI is a measure in calculating inflation and it is also used to adjust for the consequence of inflation on the real value of money. CPI is one of the most important national economic statistics.

PCGDP is Per Capita GDP, which is arrived by dividing GDP by total population and it is an indicator of a country's living standard. A higher living standard is an essential factor for enhancing the access to financial services. According to the demand driven hypothesis, the growth of an economy will create new demand for financial services¹².

¹¹ Proxied by the size of transactions relative to market capitalization.

¹² Such increase in demand will push for more sophisticated financial intermediaries able to satisfy the new demand for their services (Yartey, 2008).

Figure (1): Indicators of Financial Sector Development in Egypt, 1974- 2012.



Source: Prepared by author using World Bank Financial Development and structure Dataset.

The different indicators specified in the economic model detailed above explain financial development. Four regression models are established in which each uses one of those financial development indicators as a dependent variable. Model 1 estimates the relation of **Liquid Liabilities (M3) as % of GDP**, model 2 measures the **Domestic Credit to Private Sector (% of GDP)**, and **Stock Market Capitalization (% of GDP)** is used in model 3 and model 4 estimates **Capital Market Turnover Ratio (%)**. These four indicators are used along with set of independent variables respectively, to identify if there is a relationship between financial development and these independent variables.

Due to unfortunate lack of data, Regulatory Quality as an index, measuring the ability of the government to provide sound policies and regulations that enable and promote private sector development and Rule of Law as an index, measuring the extent to which agents have confidence in the rules of society, including the quality of contract enforcement and property rights, the police, and the courts, as well as the likelihood of crime and violence; have been omitted from the study.

Preliminary Test for Stationary of the Time Series

A particular time series is said to be stationary or non-stationary by using a Unit Root Test, before proceeding to the identification of a possible long run relationship, it is necessary to verify that all variables are integrated of order one in levels. To test the time series in this study over the period 1974-2012, a Unit Root Test has been performed, the test applied is well known Augmented Dickey-Fuller test (ADF).

All variables are tested both in levels and first difference with a constant and a constant with a time trend. The results show that the unit-root hypothesis cannot be rejected when the variables are taken in levels. However, when the first differences are used, the hypothesis of unit root non-stationary is rejected at the 1% level of difference. These results lead us to conclude that our series are characterized as an I(1) process, Unit Root Test results are reported in Table (1).

ARDL (Autoregressive Distributed Lag Model)

To investigate the existence of a long-term relationship (cointegration) an estimation procedure advanced in Pesaran et al. (1997) and Pesaran and Shin (1999) is used. Using ARDL technique does not entail that all the variables in the model to be I (1), or of the same order. The error correction model in the variables fd, xm, fdi, gdfcf, sse, cpi and pcgdp is given by the measurement of the dependent variables:

Table (1): Unit Root Test

	Level		1 st difference	
	Constant	Constant + Time Trend	Constant	Constant + Time Trend
lnLQ	-2.784274 (2)	-3.457558 (4)	-3.062771* (0)	-3.169211* (0)
lnPC	-3.220399 (4)	-0.234319 (0)	-4.540489* (0)	-3.393265* (0)
lnMC	-2.382073 (1)	-3.270155 (3)	-4.097963* (3)	-3.951103* (3)
lnTR	-1.667240 (4)	-3.311602 (3)	-3.916668* (3)	-3.923288* (3)
lnXM	-2.148547 (2)	-1.583671 (2)	-6.857462* (2)	-6.985675* (2)
lnFDI	-2.478410 (1)	-3.029412 (1)	-3.859111* (0)	-3.731795* (0)
lnGDFCF	-3.599989 (4)	-4.515234 (4)	-6.146926* (0)	-6.093600* (0)
lnSSE	-2.554904 (3)	-1.208495 (2)	-4.542073* (1)	-4.471884* (1)
lnPI	-1.555789 (0)	1.424386 (1)	-9.49889* (0)	-9.00003* (0)
lnPCGDP	-3.039723 (4)	-3.727156 (4)	-5.184732* (0)	-5.215652* (0)

Source: Author's estimation (statistical work is performed in EvIEWS Software version 6).

Notes: Asterisk (*) denotes result is significant at the 5% level. Optimal lag lengths are given in the parentheses.

$$\begin{aligned}
 \Delta f d = & \beta_0 + \sum_{i=1}^n a_i \Delta y_{t-1} + \sum_{i=1}^n b_i \Delta x m_{t-1} + \sum_{i=1}^n c_i \Delta f d i_{t-1} + \sum_{i=1}^n d_i \Delta g d f c f_{t-1} \\
 & + \sum_{i=1}^n e_i \Delta s s e_{t-1} + \sum_{i=1}^n f_i \Delta c p i_{t-1} + \sum_{i=1}^n g_i \Delta p c g d p_{t-1} + \mu_1 \Delta y_{t-1} + \mu_2 \Delta x m_{t-1} \\
 & + \mu_3 \Delta f d i_{t-1} + \mu_4 \Delta g d f c f_{t-1} + \mu_5 \Delta s s e_{t-1} + \mu_6 \Delta c p i_{t-1} + \mu_7 \Delta p c g d p_{t-1} + \varepsilon_t
 \end{aligned}$$

Given that data under test is based on an annual observations, $n=1$ has chosen for the maximum order of lags in the ARDL model and carry out the estimation over the period of study. For the model above, the hypothesis that is being tested is the null hypothesis of ‘non-existence of the long run relationship’ explained by

$$H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = \delta_7 = 0$$

And the alternative hypothesis is

$$H_1: \delta_1 \neq 0, \delta_2 \neq 0, \delta_3 \neq 0, \delta_4 \neq 0, \delta_5 \neq 0, \delta_6 \neq 0, \delta_7 \neq 0$$

F-statistics¹³ is suggested for the mutual significance of $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6$ and δ_7 . The calculation of the F-statistic and its result are shown in table (2) regressors contain an intercept and time trends.

Pesaran et al. (1997)¹⁴ have tabulated the apt critical values for different number of regressors and whether the regressors contain an intercept or a time trend. The F-statistics $F(\text{fd}, \text{xm}, \text{fdi}, \text{gdfcf}, \text{sse}, \text{cpi}, \text{pcgdp})$ is 6.42, which exceeds the upper bound of the critical value band. Hence, The null hypothesis of no long run relationship between the variables is rejected. The test results thus suggest that there is a long run relationship between the variables.

Table (2): F-statistics

Wald Test:			
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	6.419183	(6, 13)	0.0032
Chi-square	38.51510	6	0.0000

Source: Author's estimation (statistical work is performed in Eviews Software version 6).

*Johansen Test for Cointegration*¹⁵

Trace Values and Maximum Eigen Values of the Johansen¹⁶ Test for Cointegration confirm the results. As Appeared in table (3), the four financial development indicators **LQ, PC, MC and TR** have been individually estimated against the explanatory variables. Trace Values of the four indicators (138.6, 138.3, 154.7 and 139.5) respectively, are higher than the Critical Values at 5% (125.6). And the Maximum Eigen Values of the four indicators (47.5, 46.1, 57.1 and 51.1) respectively, are higher than the Critical Values at 5% (46.2). We thus reject the null

¹³ The distribution of the F-statistic is non-standard, regardless whether the regressors are I (0) or I (1).

¹⁴ See Pesaran et al. (1997), p. 478 Appendices.

¹⁵ We can run Johansen test for cointegration in this study, as indicated in the result of ADF test, variables are non-stationary or unit root at level form, but after converting variables into first difference, they became stationary, i.e. there is no unit root.

¹⁶ For a detailed description of the procedure, see Johansen (1995).

hypothesis of no long run relationship between the variables. The test results thus suggest that there is a long run relationship between the variable.

Table (3): Johansen Test for Cointegration				
Dependent Variable is Liquid Liability				
Series: LQ XM FDI GDFCF SSE CPI PCGDP				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.723513	138.6293	125.6154	0.0063
At most 1	0.590018	91.06238	95.75366	0.1007
At most 2	0.515413	58.07163	69.81889	0.2993
At most 3	0.331301	31.26664	47.85613	0.6522
At most 4	0.251558	16.37703	29.79707	0.6855
At most 5	0.124068	5.655867	15.49471	0.7358
At most 6	0.020188	0.754600	3.841466	0.3850
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.723513	47.56692	46.23142	0.0358
At most 1	0.590018	32.99075	40.07757	0.2518
At most 2	0.515413	26.80499	33.87687	0.2739
At most 3	0.331301	14.88961	27.58434	0.7569
At most 4	0.251558	10.72116	21.13162	0.6751
At most 5	0.124068	4.901267	14.26460	0.7543
At most 6	0.020188	0.754600	3.841466	0.3850

Dependent Variable is Credit to Private Sector				
Series: PC XM FDI GDFCF SSE CPI PCGDP				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.712448	138.3468	125.6154	0.0066
At most 1	0.559471	92.23181	95.75366	0.0853
At most 2	0.474099	61.90003	69.81889	0.1817
At most 3	0.436545	38.12230	47.85613	0.2967
At most 4	0.273775	16.89661	29.79707	0.6477
At most 5	0.116153	5.060486	15.49471	0.8024
At most 6	0.013211	0.492055	3.841466	0.4830

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.712448	46.11495	46.23142	0.0514
At most 1	0.559471	30.33178	40.07757	0.4024
At most 2	0.474099	23.77773	33.87687	0.4719
At most 3	0.436545	21.22569	27.58434	0.2628
At most 4	0.273775	11.83612	21.13162	0.5639
At most 5	0.116153	4.568431	14.26460	0.7950
At most 6	0.013211	0.492055	3.841466	0.4830

Dependent Variable is Stock Market Capitalization				
Series: MC XM FDI GDFCF SSE CPI PCGDP				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.786422	154.6925	125.6154	0.0003
At most 1	0.653175	97.57352	95.75366	0.0372
At most 2	0.485906	58.39295	69.81889	0.2880
At most 3	0.345783	33.77506	47.85613	0.5142
At most 4	0.304090	18.07535	29.79707	0.5605
At most 5	0.101081	4.661548	15.49471	0.8437
At most 6	0.019238	0.718724	3.841466	0.3966

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.786422	57.11895	46.23142	0.0024
At most 1	0.653175	39.18057	40.07757	0.0629
At most 2	0.485906	24.61789	33.87687	0.4113
At most 3	0.345783	15.69971	27.58434	0.6911
At most 4	0.304090	13.41380	21.13162	0.4149
At most 5	0.101081	3.942824	14.26460	0.8653
At most 6	0.019238	0.718724	3.841466	0.3966

Dependent Variable is Turnover Ratio				
Series: TR XM FDI GDFCF SSE CPI PCGDP				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.749324	139.5006	125.6154	0.0054
At most 1	0.537154	88.30764	95.75366	0.1457
At most 2	0.473970	59.80427	69.81889	0.2414
At most 3	0.412640	36.03558	47.85613	0.3945
At most 4	0.287634	16.34725	29.79707	0.6876
At most 5	0.080294	3.798172	15.49471	0.9191
At most 6	0.018774	0.701232	3.841466	0.4024

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.749324	51.19296	46.23142	0.0136
At most 1	0.537154	28.50337	40.07757	0.5261
At most 2	0.473970	23.76869	33.87687	0.4725
At most 3	0.412640	19.68834	27.58434	0.3631
At most 4	0.287634	12.54907	21.13162	0.4945
At most 5	0.080294	3.096939	14.26460	0.9401
At most 6	0.018774	0.701232	3.841466	0.4024

Source: Author's estimation (statistical work is performed in Eviews Software version 6).

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

Max-Eigen test indicates 1 cointegrating eqn(s) at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Vector Error Correction Model

Given that variables are cointegrated, the Vector Error Correction Model can be presented. Using LQ, PC, MC and TR as indicators for financial development, respectively. The number of lags is 2, which has been chosen by lag selection criteria.

According to Vector Error Correction Estimates shown in table (4), overall, there is no large disparity between the result estimates using different indicators of financial development as dependent variables, it is also noticed that the explanatory variables selected contributed positively to stimulate financial development in the long run particularly banking development proxied by Domestic Credit to Private Sector. Error correction term (speed of adjustment towards equilibrium) is the highest 108% compared to 1.05%, 10.4% and 6.8% obtained by Liquid Liability, Market Capitalization and Turnover Ratio respectively.

Furthermore, observed that investment rate (GDFCF) is significant for financial

development, the FDI also exhibits positive correlation with financial development, PCGDP and SSE which give suggestions about the quality for standard of living and human capital quality are also deemed imperative in determining financial development specially in capital market development explained by Turnover Ratio. CPI as expected and empirically demonstrated has significant negative effect on financial development in all models.

Table (4): Vector Error Correction Estimates

Regressor	Dependent Variable (LQ)	Dependent Variable (PC)	Dependent Variable (MC)	Dependent Variable (TR)
C	-0.015538 (0.024157) [-0.643220]	-1.080470 (7.66043) [-0.14105]	-0.104231 (0.045534) [-2.289095]	-0.068316 (0.265056) [-0.257742]
XM	25.97202 (9.84484) [2.63814]	6.016717 (2.78082) [2.16365]	13.96971 (8.10503) [1.72359]	3.770816 (2.28997) [1.64667]
FDI	14.57894 (2.97009) [4.90858]	0.300084 (3.61441) [0.08302]	27.09547 (2.55030) [10.6244]	7.387427 (0.63473) [11.6386]
GDFCF	2.175440 (0.82672) [2.63142]	43.41475 (13.3671) [3.24788]	2.597641 (0.63284) [4.10477]	0.372269 (0.15943) [2.33495]
SSE	0.458253 (0.39985) [1.14605]	43.41475 (13.3671) [3.24788]	3.306962 (0.45845) [7.21343]	0.817746 (0.10068) [8.12235]
CPI	-2.619996 (0.75233) [-3.48249]	-70.81969 (34.1105) [-2.07619]	-2.483604 (0.72609) [-3.42053]	-0.150376 (0.20431) [-0.73603]
PCGDP	9.374764 (1.43424) [6.53642]	7.954175 (4.50529) [1.76552]	9.177031 (1.47907) [6.20461]	3.054299 (0.34735) [8.79302]
R-squared	0.728535	0.956513	0.709264	0.397265
Durbin-Watson	2.042887	1.854186	1.718272	1.836809

*Standard errors in () and t-statistics in []

Source: Author's estimation (statistical work is performed in Eviews Software versio

5. Conclusion

This study examines the determinants of financial development in Egypt over the period 1974-2012. Multiple Econometric Models are employed in the analysis. Augmented Dickey-Fuller test showed when the first differences are used; the hypothesis of unit root non-stationary is rejected at the 1% level of difference. Autoregressive Distributed Lag Model and Johansen Test for Cointegration proved that variables are cointegrated in the long run. Empirical results suggested that, trade openness, economic growth, investment, education and human capital have significant and positive effect on financial development. The findings of this study have important policy recommendations, it is obvious that the government in Egypt can help develop its financial market by improving economic development that encourages efficient financial systems, higher productive investment in physical and human capital and an adequate structure for more job-creating growth that leads to higher economic growth. Financial liberalization is, therefore, as important as other macroeconomic factors. However, certain steps needed to be taken before financial liberalization is executed such as improving the banking system and inflation control in order to provide macroeconomic stability.

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