

Review Paper

# Modeling and Analyzing the Dynamic Impact of Financial Development on Economic Growth in Syria

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Received: 17-09-2022

Revised: 30-11-2022

Accepted: 06-12-2022

## ABSTRACT

There is a link between economic progress and Financial Development. In order to analyze the potential for influencing Economic Growth, this study will look at the underlying elements that drive the development of Syria's Financial Sector. The research team is also speculating on how much Economic Growth these effects will bring. A Dynamic Linear Model that takes into account Financial Reforms and changes on the Legal System was used to analyze the Impact of Financial Development on Economic Growth between 1980 and 2018. We were able to measure many dimensions of Financial Development with the use of a new IMF Financial Development Indicator, overcoming the limits of single traditional variables that have been widely used. The ARDL Bounds Test approach, which is based on unit root tests, was used. The Error Correction Model was also applied. The country's Financial Development had a favorable and statistically significant effect on Economic Growth in Syria in the short and long terms. A lot of factors influence Economic Growth, including the Legal System, overall Government Expenditure, and the Exchange Rate. The Supply Leading Hypothesis of Patrick (1966) was realized in Syria, hence Financial Development leads to Economic Growth, consistent with the proposal of "more Finance, more Growth" (Levine, 2003). Financial Development is a necessary condition and prerequisite for Economic Growth in Syria, which is consistent with the (Finance Lead Growth Theory). The model could be very useful in decision-making, especially those related to reform policies to promote the SDGs or to modify current policies in response to a possible global financial crisis or shock.

## HIGHLIGHTS

- Financial Development generates greater Economic Growth in Syria during the period 1980-2018, and this is consistent with the theory of Finance leads Growth.
- Total Government Spending, Financial Development and the legal system are determinants of Economic Growth in Syria in the short term, while Total Government Spending, Financial Development and Exchange Rate are determinants of Economic Growth in Syria in the long term

**Keywords:** Financial Development, financial depth, financial access, financial efficiency, economic growth

Though much research has been done in the subject of economics, early academics emphasized the positive effects of financial development and the idea that "more finance is better" like Schumpeter (1911), Bagehot (1873), Goldsmith (1969), McKinnon (1973) and Shaw (1973). After that, many researchers

found that Financial Development has been

**How to cite this article:** Khatib Al, A.M.G., Alshaib, B.M., Mishra, P., Narvariya, R.K., Yadav, S., Ray, S. and Kanaan, A. (2022). Modeling and Analyzing the Dynamic Impact of Financial Development on Economic Growth in Syria. *Econ. Aff.* 67(05): 885-897.

**Source of Support:** None; **Conflict of Interest:** None



associated with a higher rate of Economic Growth (King and Levine, 1993). Reducing Inequality, decreasing poverty (Jalilian & Kirkpatrick, 2002). However, there are a number of researchers who found that there is no relationship between Financial Development and Economic Growth, such as (Robinson 1952; Lucas Jr 1988; Stern 1989; Patrick 1966; Demetriades and Hussein 1996; Singh 1997; Luintel and Khan 1999; Ang and McKibbin 2007). on the other hand, some researchers found a negative impact of the excessive activity of the financial system on the economy, such as Saint-Paul (1992), (Ouyang and Li, 2018).

A growing number of recent research, based on recent data and using various standard methods and methodologies, indicates that the impact of Finance on Economic Growth is weakening at best (Shen & Lee (2006), Rousseau and Wachtel, 2011) and Gründler (2019), and at worst, turn negative once Financial Development crosses a certain threshold (Arcand *et al.* 2011), Cecchetti and Kharoubi (2012), Law & Singh (2014) and (Arcand *et al.* 2015), especially after the 1990s, which witnessed Financial Liberalization. Expansion and rapid growth in the Financial Sectors with leniency in the legal legislation regulating the work of these sectors in a large number of countries, which led to the occurrence of Financial Crises that reflected negatively on Economic Development. Economic reforms and policies aimed at meeting development objectives have been implemented in the majority of Middle Eastern countries in the last several decades. Syria's bank-based financial system has undergone significant changes as part of these efforts, with the establishment of private banks being a critical component of achieving these goals. It will be accompanied by a number of new laws and regulations, all of which are aimed at improving financial institutions and increasing the sector's economic contribution. Some examples of how financial development aids economic growth include mobilizing savings and financing production and investment, among other things, in many developing countries. Syrian economic growth has yet to be studied in relation to the country's development of financial resources. This has led to the formulation of the following research question:

- ♦ Is there a long-term relationship between Financial Development and Economic Growth in Syria?

Syria's Economic Growth from 1980 to 2018 will be examined in this study to determine the dynamic influence of financial development.

Analyze whether a long-term link between Financial Development and Economic Growth exists. Find out if there is a short-term correlation between Financial Development and Economic Growth.

Syrian financial system has undergone major reforms that have reinforced its function as an effective financial intermediary. New legislation and rules for the growth of the Syrian financial sector include the opening of private banks, insurance businesses, and even a stock exchange in Damascus. From 1980 to 2000, Syria's banking sector required government intervention and market distortion. The government controls deposit and loan rates. A bigger percentage of bank reserves is essential, as is government intervention in bank asset portfolio formation. The impact of Syria's financial development on economic growth is studied using a linear dynamic model. This study investigates their connection. Since the 1980s, financial development has influenced Syria's economic growth, particularly in terms of "Depth," "Accessibility," and "Efficiency."

As the war winds down, it's more critical than ever to focus on Syria's economic progress. This necessitates economics This study looked at financial institutions (banks, insurance companies, etc.) and financial markets to better understand the three fundamental aspects of financial system progress. This study may help those responsible for developing Syria's financial and economic strategies and plans better comprehend the connection between the two. Most previous studies are limited to measuring only a single dimension of Financial Development, that is, the dimension of Financial Depth, and most studies use traditional indicators to measure it., Such as the ratio of money supply /GDP or the ratio of directed credit to the private sector /GDP, or the ratio of market capitalization/GDP. These variables, despite their importance, measure the relative size of the Financial Sector in the economy, but they did not measure the distribution of their services or the Efficiency of these services. This is different from this research, which deals with the three dimensions

of the Financial Development: (Access, Depth, Efficiency). It's vital to note that most studies utilize static models and omit time-relaxed variables.

## LITERATURE REVIEW

Favarra (2003) studied the link between Finance and Growth using econometric Models. Several of his findings show a weak link between money and economic growth.... According to Levine (2005), the financial system can smooth transactions by allocating resources, overseeing corporate governance, limiting losses, and activating savings. (Hagmayr *et al.* 2007) utilized panel-data technique to assess the association between Financial Development and Economic Development in Turkey, Croatia, Bulgaria, and Romania from 1995 to 2005. Bonds and capital stock have been shown to have a strong positive impact on economic growth. Following the global financial crisis of 2007-2008, analysts and policymakers alike questioned the earlier conclusion that "more Finance is better." Among the citations are Cechetti and Kharoubbi (2011), Law & Singh (2014), and Arcand *et al.* (2013). (2015). Researchers discovered that advanced financial systems increased quicker than less advanced financial systems. As a result, the country's neglected people can keep pace with the economy. (Anwar and Nguyen, 2011) claim that financial expansion has a considerable impact on host country policies. As a result, it fosters technology and human capital progress. Human capital development is crucial to economic growth. Bist (2018) used panel-unit root and panel-cointegration to study the long-term relationship between FD and economic growth in 16 low-income African and non-African nations. FD, as represented by private sector lending, has been shown to provide considerable and long-term benefits for economic development. (Ncanywa and Mabusela, 2019) in their research focuses on five nations in Sub-Saharan Africa. A panel cointegration analysis found that bank credit to the private sector and liquid liabilities boost economic development (Abeka *et al.* 2021). However, some argue that too much financial activity is harmful to economic progress. The basic idea is that excessive financial sector expansion will erode Human Capital, raise Financial Instability, and enhance the economy's vulnerability to recession. The FD-growth relationship may

not be as well-established as originally thought. Naceur and Ghazouani (2007). An examination of 10 MENA nations by Naceur and Ghazouani (2007) found that stock market expansion boosted growth whereas bank developments slowed it significantly. MENA private credit has a detrimental influence on growth, according to (Barajas *et al.* 2011). Between 2000 and 2014, Ngongang (2015) explored the lack of a link between FD and economic growth in 21 SSA nations. The researchers found that the lack of a correlation may be due to the weak banking infrastructure in SSA economies. Pradhan (Pradhan, 2009) found evidence that using VAR models to forecast economic growth had favorable consequences. This study found a long-term link between financial development and economic growth in India. The study concluded that the country's rapid economic expansion will spur financial development. Economic growth will accelerate along with financial development's vitality.

(Durusu-Ciftci *et al.* 2017) investigated the long-term association between Financial Development and Economic Growth, on 40 countries from 1989 to 2011. and confirmed that financial industry has accelerated economic growth. It advises policymakers to build a sound foundation for the Financial Industry. The research recommends lawmakers build a stable financial industry framework. Economic and financial expansion are highly correlated (Arestis *et al.* 2015). For example, Biplob and Halder (2018) found a one-way relationship between two categories of financial development and economic growth. The growth of the financial sector is crucial to the general health of the economy since it facilitates private sector credit while growing domestic savings and investment. The causal association between financial development and economic growth has been demonstrated (Edet, 2021). A different study (Udoh *et al.* 2021) found a strong link between the development of financial institutions and the growth of economies. Finance is the most important predictor of Malaysia's economic growth, and private savings and investment are the two essential variables that impact growth (Ang, 2008). To assess financial development, (Anwar and Nguyen, 2011) used Gross Domestic Savings and Broad Money Supply in panel-data from 61 regions between 1997 and 2006 to show the link between

finance and economic growth in Vietnam. Rousseau and Wachtel (2011) observed that Financial Depth impact on Economic Growth is considerable on condition that the country avoids a financial crisis. Experts say excessive financial deepening may cause inflation and damage the banking system, causing an economic crisis that slows GDP. The study found that financial services boost economic growth (Shhabbaz *et al.* 2015). The study's authors also claim that increased trade openness promotes economic growth. (Bist and Bista, 2018) used ARDL model with a structural break during the period (1984 to 2014). The study also found a significant positive and one-way connection between Finance and Nepal's economic progress. The findings show that economic growth is inversely associated to both gross domestic credit and trade openness. The expansion of the financial sector and economic growth had a long-term causal link (Jahfer and Inoue, 2014). In addition to (Adu *et al.* 2013), an analysis shows that private sector lending has a beneficial influence on economic growth, depending on the Proxy of Financial Development chosen. As a result, the classic literature on finance and economic growth may be inaccurate. Money supply had little impact on economic growth. Unexpectedly, Hasan and Barua (2015) find that the wide money supply and domestic credit have no meaningful impact on economic growth. The quantity of money pushed into the economy has no effect on economic development, the authors claim. Finance and economic growth are not negatively correlated over time, although they are negatively correlated in the short term (Iheanacho, 2016). (Musabeh *et al.* 2020) analyze the impact of financial development on economic growth and welfare in four developing market economies from 2000 to 2013. Turkey, Brazil, Poland, and Hungary all have varying levels of financial development, which positively impacts economic growth. This study was based on a static model, besides findings and recommendations may not be applicable globally. Further, (Siddikee and Rahman, 2021) found that the influence of Financial Development on Economic Growth was small and positive in the short run but large and negative in the long run. (Wesiah & Onyekwere, 2021) examined quarterly data from 1963 to 2015 to see if there was a direct association between financial development and economic growth in the UK. Three

variables were used to express the development of the Financial Sector, namely the ratio of broad money supply to Gross Domestic Product, the ratio of private sector credit to GDP, and the ratio of stock market value to GDP. Economic Growth is measured by real GDP per capita. The study applied the Johansen Co-Integration test and the Granger causality test, within the framework of Error Correction Model. The Co-Integration test result indicated a stable long-run equilibrium relationship between Financial Development and Economic Growth in the UK. the study was limited to the dimension of Financial Depth only to express Financial Development, and did not consider structural changes (Afonso & Blanco-Arana, 2022). Revisiting the association between Economic Growth and Financial Development in OECD/EU countries over the period 1990-2016, including the 2008-09 global financial crisis using a random effects model and the Generalized Method of Moments (GMM), They discovered that increases in Domestic Credit and Market Capitalization and the Market turnover ratio of domestic shares have a significant positive effect on GDP per capita. As a result, the relationship between Financial Development and Economic are not constant. There are examples of both positive and negative effects of financial development on economic growth, as well as situations when those effects are negligible or absent. Results vary by country's socioeconomic structure and geographic location, which the Panel Data studies seem to ignore. Thus, this research attempts to reassess the relationship between Financial Development and Economic Growth of Syria. Previous studies have mostly been limited to measuring only a single Dimension of Financial Development, the Financial Depth Dimension, while most studies have used traditional metrics such as the ratio of money supply to GDP or the ratio of directed credit to the private sector to GDP, or the ratio of market capitalization to GDP. While these variables are important, they measure the relative size of the Financial Sector in the economy, but they do not measure the distribution of its services or the efficiency of those services. This is different from this study, which deals with three Dimensions of Financial Development: (Access, Depth, Efficiency). It's also worth noting that most research use static models and ignore time-varying variables.

## MATERIALS AND METHODS

Data were obtained from the Central Bank of Syria and the Central Bureau of Statistics, International Monetary Fund Financial Development Database. (IMF Financial Development Database), in addition to the World Bank's World Development Indicators (WDI) database. These databases were used to acquire data for this investigation.

The ARDL Bounds Testing model depicts the relationship between independent variable  $X$  and dependent variable  $Y$  as follows:

$$\Delta y_t = \mu - \rho y_{t-1} + \theta x_{t-1} + \sum_{j=1}^{\rho-1} a_j \Delta y_{(t-j)} + \sum_{j=0}^{q-1} \pi_j \Delta x_{t-j} + \varepsilon_t$$

Where the estimators of the variables at the level and with a time lag of one period represent the long-term information from which the long-term cointegration function is derived.

$\rho$ : Error-correcting parameter whose significance is tested using tabular values of (Pesaran *et al.* 2001) and null hypothesis  $H_0$ : there is no cointegration relationship in the long run. Two conditions must be met in the value of this parameter in order for there to be a possibility to correct short-term errors with the aim of returning to the equilibrium situation in the long term: 1- It should be statistically significant. 2- It must have a negative sign.

The long-run parameter of the cointegration function of the variable  $X$  is calculated as in the following equation:

$$\beta = -\frac{\theta}{\rho}$$

The co-integration relationship is tested using the Wald Test, where the null hypothesis is tested:

$$\mu = \rho = \theta = 0$$

$\pi_j$ : Short terms parameters,  $p, q$ : They refer to the number of time lags (time delays) that are estimated based on an information criterion such as the AIC or Schwartz information criterion SC for either the dependent or independent variable.

### Bounds Testing Approach

The (Wald) test or (F) test statistic is utilized to assess the long-term equilibrium connection

between the variables. To test for the presence of the general trend variable in the estimate, the Wald or F test statistic is used. The next formula can be used to identify which fraction (F) is meant:

$$F = \frac{(SSeR - SSeu) / M}{SSeu / (n - k)}$$

**SSeR**:  $H_0$ : absence of a long-run equilibrium relationship between the variables (lack of co-integration between the variables).

$$H_0: B_1 = B_2 = \dots = B_{k+1} = 0$$

**SSeu**: The sum of squares of the residuals of the unconstrained model (the alternative hypothesis) indicates that the variables are in long-run equilibrium (the presence of co-integration between the variables).

$$H_1: B_1 \neq B_2 \neq \dots \neq B_{k+1} \neq 0$$

**M**: Parameters numbers of the restricted model

**N**: The size of observations (sample size)

**K**: quantity of variables

After calculating a statistical value (F), it is compared to the tabular value (F) calculated by (Pesaran *et al.* 2001), or the tabular values of (Naryan, 2005), and since the (F) test has a non-standard distribution, it has two critical values:

*Minimum value*: It assumes that all variables are stationary at their original level, i.e. integral of order zero I(0).

*The upper bound value*: It assumes that all the variables are stationary at their first difference, i.e. integral of the first order I(1).

The rejection of the  $H_0$  based on the tabular values of (Pesaran *et al.* 2001) and the tabular values of (Naryan, 2005) at a certain level of significance means that there is a long-term equilibrium relationship. The critical values tables contain For (Pesaran *et al.* 2001) and (Naryan, 2005) two columns, the first is I(0) if all the independent variables are stationary at the level, and the second is I(1) if all the independent variables are stationary at the first difference. The tables of (Pesaran *et al.* 2001) differ in that the critical values of the F-test were calculated under an asymptotic regime (requiring a sample size of 1000

observations), while (Naryan, 2005) introduced new critical values for sample sizes ranging from (30. to 80.) observations.

## RESEARCH VARIABLES

### Dependent variable

**Economic Growth:** Economic Growth was measured using the per capita gross domestic product (GDP Per Capita).

### Independent variables

1. **Financial Development Index (FD):** The Financial Development Index is a new measure of financial development developed by the IMF (FD) (Sahay & ihák, 2015). The IMF introduced this statistic in 2016. So that we can measure all aspects of financial development instead of just one, as is done in the literature. (Svirydzenka, 2016). This indicator's sub-indicators are:

1. "Financial Institutions Access variable: (FD\_FIA\_IX) and it measures: the number of bank branches and the number of ATMs per 100,000 adults.
2. Financial Institutions Depth variable: (FD\_FID\_IX)) It measures: the ratio of credit directed to the private sector to GDP, pension fund assets to GDP, life and non-life insurance premiums to GDP.
3. Financial Institutions Efficiency Variable: (FD\_FIE\_IX). It measures: net interest margin, lending to deposit ratio, non-interest income to total income, overhead costs to total assets, return on assets, return on equity.
4. Financial Markets Access variable: Financial Markets Access (FD\_FMA\_IX) It measures: ratio of market capitalization excluding the top 10 largest companies, the total number of debt issuers (domestic and external, non-financial and financial companies).
5. Financial market depth variable: Financial Markets Depth (FD\_FMD\_IX) and measures: stock market capitalization to GDP, traded stocks to GDP, international government debt securities to GDP, total

debt securities of financial companies to output Gross domestic product is the sum of the debt securities of non-financial companies to GDP.

6. **Financial Markets Efficiency Variable:** Financial Markets Efficiency (FD\_FME\_IX) It measures: Stock market turnover ratio (stocks traded/capitalization).

The ratio of Total Government Expenditure to GDP: In this investigation, the inclusion of this control variable improves the model's quality because it is expected to have an effect on the study's dependent variable.

3. **Exchange rate:** as a control variable.
4. **The legal system:** There are a number of studies that have made use of dummy variable D (Dummy Variable), including the one that was employed in this study (Naceur & Ghazouani, 2007).

### Theoretical framework

**Financial development:** Reflects the aggregate of quantitative and qualitative improvements in the work of the financial system and the extent to which the financial sector has grown and developed using key monetary and financial indicators. It also includes institutional aspects, including the size and shape of financial sector institutions and markets. The development and diversity of the financial institutions. In addition, financial development is a multi-faceted concept that is not limited to monetary and financial indicators, but also includes institutional capabilities such as regulation, control, degree of competition, degree of financial openness, strength of claims and the diversity of market financial products. The financial structure that makes up the economy. Financial development increases national flexibility and promotes economic growth, leading to greater mobilization of savings, better information sharing, and better resources Allocation, Diversification and Risk Management. it also enhances Financial Stability, so that a deep and liquid Financial System with a variety of tools helps cushion the Impact of shocks on the Economy.

**Financial Depth:** "The increase in the supply of financial assets in the economy. It includes all or a broad range of financial assets in the economy.

Low financial depth in an economy means a small supply of financial assets, and high financial depth means a large supply of financial assets. Includes Cash" (Isu *et al.* 2013, 010). "Financial development is often quantified by financial depth" (Ito & Kawai, 2018, 803).

**Financial Access:** Provides banking and credit services at reasonable cost to the most disadvantaged and low-income groups, including a variety of financial services such as savings, loans, insurance, payments, remittances and financial advice through the formal financial system (Langarayan, 2008, 1).

**Financial Efficiency:** This is a concept primarily used to measure the cost of Credit Intermediation. Indicators to measure the Efficiency of Financial Institutions include Overhead Costs to Total Assets, Net Interest Margin, Loan-to-Deposit Ratio, Non-Interest Income to Total Income, Cost-to-Income Ratio, Return On Assets and Return On Equity. As for measuring the Efficiency of Financial Markets, the Trade Ratio (Stock Market Turnover). The logic behind using this variable is that the greater the volume (more liquidity), the more Efficient the Market will be (Svirydzenka, 2016, 8).

**Economic Growth:** Is the increase in the Production of Economic Goods and Services, from one period to another. It can be measured in nominal or real (adjusted for inflation). Traditionally, overall Economic Growth has been measured in terms of Gross National Product (GNP) or Gross Domestic Product (GDP), although alternative measures are sometimes used. Economic Growth is the increase in the Production of Goods and Services in an Economy. Growth in Capital Goods, Labor, Technology, and Human Capital can all contribute to Economic Growth. Economic Growth is usually measured in terms of the increase in the total Market Value of additional Goods and Services produced, using estimates such as GDP.

As explained by economic theory, there are three hypotheses for Financial Development:

**1. The Financial Structuralist Hypothesis:** This hypothesis, also known as the Development Hypothesis, goes back to (Gurly & Shaw, 1960) (Goldsmith, 1969) who called for encouraging the growth and expansion of Banking System Institutions and diversifying Financial Instruments and making them It is more widespread as the

most effective method for achieving Financial Development, and that this pushes towards promoting Economic Growth and achieving Economic Development, while weak Financial Development impedes Economic Growth and Economic Development. To the expansion of the activities of these institutions, it has an important and positive effect on savings and investment and, consequently, on economic growth. (Al-Tamimi *et al.* 2002, 4). "Patrick (1966) is one of the economists who explained the relationship between Financial Development and Economic Growth based on the theory of financial structuring, and he is one of the first economists to study the direction and causation of this relationship. This relationship is determined based on the level of Economic Growth in the country according to two mechanisms: the Supply-leading mechanism and the demand-following mechanism. He explains that in the early stages of Economic Growth the Supply-leading hypothesis is fulfilled, which says that Financial Development positively affects Economic Growth, as the existence of Financial Institutions and Markets increases the supply of Financial Services, and through the presence of Financial Services, the Financial Sector performs two functions: the first is to transfer resources from traditional sectors that do not contribute to Economic Growth to vital sectors that contribute to Economic Growth, and the second is to strengthen and motivate companies within these sectors to respond to their services and allocate Money in good investments, which raises returns, and this gives an incentive to save and invest, and thus contributes to Economic Growth, but after reaching a high Economic Growth Rate. A new stage begins, which is demand-following hypothesis, which says that the increase in the supply of Financial Services is in response to the increase in demand for them due to the rise in Economic Growth Rates and thus the increase in investment and production operations (Kenza & Mohamed, 2015,7).

**2. The Financial Repressionist Hypothesis:** This hypothesis goes back to the neo-liberal school, whose most important theorists are (McKinnon, 1973) and (Shaw, 1973), and their scientific additions in this field represent the theoretical basis of the concept of Financial Liberalization, and the essence of this hypothesis is based on the call

to ease restrictions and controls imposed on the Financial System and that liberalizing Interest Rates is the solution to the problem of low levels of saving and investment, which leads to an increase in Economic Growth Rates, and therefore the view of this school focuses on the importance of Financial Liberalization in the Development of Financial Systems on the one hand and the importance of developing the Financial System in the process of Economic Development on the other hand. The (McKinnon-Shaw) model assumes that the phenomenon of Financial Repression occurs through Financial Restrictions and Controls that are imposed on Interest Rates and Exchange Rates, in addition to the high rates of the legal reserve ratio, the misapplication of which results in a distortion of the role of the Interest Rate in the economy and a reduction in Growth Rates. This model argues that these Financial Restrictions must be removed in order to support the Economic Development process. This hypothesis takes into account the Restrictions imposed by governments on the Financial System and finds that these Restrictions hinder the development of the Financial Sector and have a negative Impact on Economic Growth, while the policies of Financial Liberalization reflect positively on Economic Growth. McKinnon (1973) and Shaw (1973) studies are among the most prominent studies that rely on the hypothesis of Financial Repression in explaining the relationship between Financial Development and Economic Growth" (Al-Tamimi *et al.* 2002, 3-4). "McKinnon and Shaw suggest That when the government reduces the Restrictions on the Financial Sector, such as ceilings on Interest Rates and legal reserve requirements, savings will increase and the supply of private credit will increase, thus investments will increase as a result of increased funds allocated to lend, which raises Economic Growth rates. While the presence of Restrictions on the Financial System will lead to a decrease in savings and an increase in consumption, and thus a decline in Economic Growth Rates" (Anthony *et al.* 2015, 663).

**3. Endogenous Growth Hypothesis:** Through the major contributions in this field, which are attributed especially to (Romer, 1986) and (Lucas, 1988), they presented Dynamic models of Economic Growth focusing on technical progress, the long-term growth It depends on two main

channels: Physical and Human Capital, and level of Research and Development (R&D). Such models have demonstrated that Economic Growth can be due to Internal Factors and not External Influences, as changing preferences, technology, Income Distribution, and Institutional Changes can stimulate Economic growth. The Financial Sector affects Economic Growth according to this theory through two main channels, which are the Capital Accumulation Channel and the Capital Productivity Channel. For the Capital Accumulation Channel, the effect is through an increase in the level of saving as the more savings, the more money available for investment and higher Growth Rates. As for the Capital Productivity Channel, the development of the Financial Sector enables the collection and analysis of information and the evaluation of available investment projects that contribute to eliminating the problems of information heterogeneity and improving the quality and efficiency of investments by pooling financial resources in the best use of them, which leads to increase the Productivity of Capital and thus raise the Rates of Economic Growth (Kenza & Mohamed, 2015,8).

The quality of Economic Growth depends on the available level of Financial Development in an Economy in addition to the size of its capital base. Financial development, in turn, depends on the available level of production and government planning which is considered as a prerequisite for Economic Growth. Financial Development could contribute directly to increasing Economic Growth via augmenting private investment and employment levels; and indirectly via improving Living Standards. Theoretically, Credit and Financial Markets have a primary role in increasing the returns on investment. This helps in the growth of investment, Private and Public Capital and economic activity in general. In addition to that, Credit and Financial Markets help in forming an Efficient Capital Allocation Mechanism which contributes to increasing Productivity levels. Theories of Financial Development mainly focus on studying the relationship between Finance and Output Variables, namely Production and Growth. Even though these theories are not new, their findings are scattered over the literature and further investigation is needed.

## RESULTS AND DISCUSSION

The goal of the study was to look at the short- and long-term effects of financial development on economic growth in Syria from 1980 to 2018. Unit root tests were used, and the ARDL Bounds Test method was utilized based on the results. The short-term link was also studied using the Error Correction Model.

**Unit Root Tests:** Perron mentioned that disregarding points of structural change in time series might lead to deceptive results, hence the tests devised and derived from the ADF test are unit root tests with a Break Point Test. Regarding whether or not the hypothesis of the presence of a unit root for any of the variables should be accepted or rejected. The Augmented Dickey-Fuller (ADF) and Phillips-Berron tests' unit root test hypotheses are as follows: The alternative hypothesis is that the time series is stationary and does not contain a unit root, whereas the null hypothesis is that the time series is non-stationary and contains a unit root.

**Table 1:** Unit root test using ADF unit root test with a Break Point

At Level				
XR	FD	Total government consumption	GDP Per Capita	
Non-stationary	Stationary	Non-stationary	Non-stationary	With Constant
1998	2005	1989	2015	Break Date
Stationary	Stationary	Non-stationary	Non-stationary	With Constant & Trend
2015	2005	1985	2017	Break Date
At First Difference				
D(XR)	D(FD)	D (Total government consumption)	D (GDP Per Capita)	
Stationary	—	Stationary	Stationary	With Constant
2015	—	1990	1990	Break Date
Stationary	—	Stationary	Stationary	With Constant & Trend
2015	—	2006	1990	Break Date

The dependent variable (Economic Growth) is stationary at the first difference, and the year of structural change is 1990, according to the PP, ADF test (Table 2). The independent variables are also stationarized at I(0) and I(1), meeting the ARDL Bounds Test conditions. The Akaike info criterion (AIC) determined that ARDL is the best model for the annual data (2, 1, 1, 2).

**Table 2:** unit root test using Phillips-Berron test

At Level					
XR	FD	Total government consumption	GDP Per Capita	t-Statistic	With Constant
-0.37	-5.55	1.35	1.00	0.99	Prob.
0.90	0.00	0.99	0.99	-2.81	With Constant & Trend
-1.58	-7.30	-2.55	-2.81	0.20	Prob.
0.78	0.00	0.29	0.20	3.68	Without Constant & Trend
2.45	0.54	3.28	3.68	0.99	Prob.
0.99	0.83	0.99	0.99		
At First Difference					
D(XR)	D(FD)	D (Total government consumption)	D (GDP Per Capita)	t-Statistic	With Constant
-3.78	-18.78	-5.76	-6.34	0.00	Prob.
0.00	0.00	0.00	0.00	-6.67	With Constant & Trend
-3.68	-19.56	-6.45	-6.67	0.00	Prob.
0.03	0.00	0.00	0.00	-5.30	Without Constant & Trend
-3.05	-18.02	-4.77	-5.30	0.00	Prob.
0.00	0.00	0.00	0.00		

To put it another way, an increase of 1 percent in overall government spending leads to an increase of 1 percent in Syria's economic growth over the long term, leading to a 7.67 percent gain in economic growth. In Syria, where the Exchange Rate has a positive and statistically significant impact on Economic Growth, a 1% increase in the Exchange Rate results in a 0.001% gain in Economic Growth. (Table 3).

**Table 3:** Estimating ARDL (2,1,1,2) Model in the long term

Levels Equation				
Case 2: Restricted Constant and No Trend				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.03	2.23	3.43	7.67	FD
0.00	24.3	0.02	0.69	Total government consumption
0.00	4.17	0.00	0.001	XR
0.00	-12.02	0.72	-8.77	C

The F-Bounds Test value reached roughly 5.90, which is much bigger than  $I(1) = 5.81$ , even at a significance level of 1%. There is a long-term association between the independent factors and the dependent variable (Table 4).

**Table 4:** F-Bounds Test in the long term

Null Hypothesis: No levels relationship			F-Bounds Test	
I(1)	I(0)	Signif.	Value	Test Statistic
Finite Sample: n=35				
3.53	2.61	10%	5.90	F-statistic
4.19	3.16	5%	3	k
5.81	4.42	1%	37	Actual Sample Size

### Estimating the short-term relationship

As soon as we've shown that there is Co-Integration between the study variables, which means that there is a causal relationship in at least one of the two directions, we proceed to the ECM (Error Correction Model).

For short-term and long-term correlations, the Error Correction Coefficient (ECC) has a value of -0.851 that is statistically significant at the level of 1% significance. This indicates that there is a strong Co-Integration relationship between independent variables and their correlated dependent variable. As a result, it takes about 1.9 years for the Economic Growth variable to return to its long-term equilibrium value, since in each period, the imbalance ratio of the previous period (t-1) is estimated at about (-0.851), in other words, if growth deviates from its equilibrium value in the long-term than the short term period (t-1), then 85.1 percent

of this imbalance is corrected during this period. About two months after that (Table 5).

**Table 5:** Estimation of the ARDL (2,1,2,1) Model in the short term

ECM Regression				
Case 2: Restricted Constant and No Trend				
Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.00	3.02	0.13	0.39	D (GDP Per Capita (-1))
0.03	2.25	1.31	2.96	D(FD)
0.00	9.93	0.07	0.70	D (Total government consumption)
0.00	-3.51	0.125	-0.44	D (total government consumption(-1))
0.96	0.04	0.00	0.00	D(XR)
0.00	5.93	0.07	0.42	D
0.00	-5.83	0.14	-0.851	Coint Eq(-1)*

There is a short-term relationship between the independent variables and the dependent variable, where the F-Bounds Test statistic reached about 5.90, which is even greater than  $I(1) = 4.66$  at the 1% level of significance (Table 6).

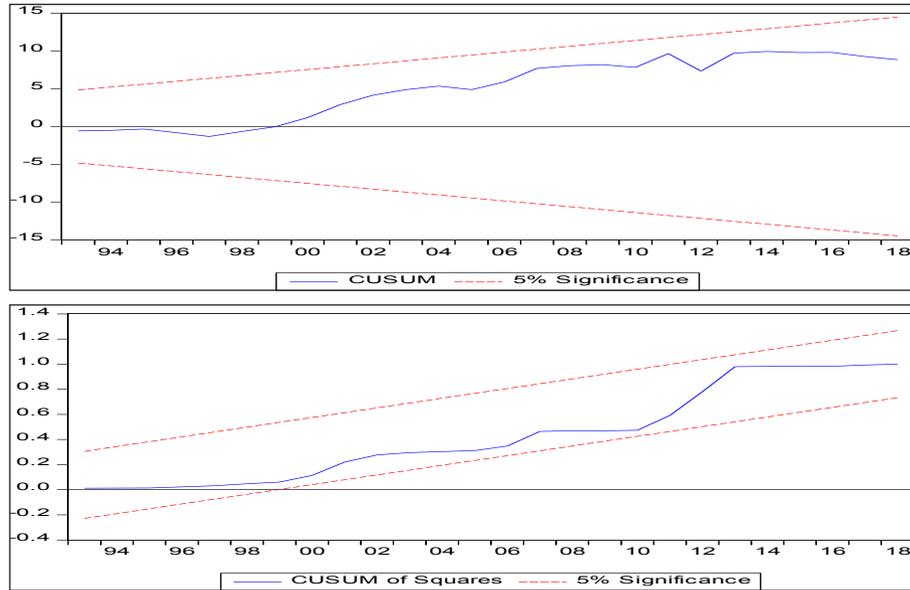
**Table 6:** F-Bounds Test in the short term

Null Hypothesis: No levels relationship			F-Bounds Test	
I(1)	I(0)	Signif.	Value	Test Statistic
3.2	2.37	10%	5.90	F-statistic
3.67	2.79	5%	3	k
4.08	3.15	2.5%		
4.66	3.65	1%		

The value of  $R^2$  is high, (87.42%), the model residuals distribution is a normal distribution, as the probability of the Jarque-Bera test was about 0.60. The model does not suffer from the problem of autocorrelation, where the probability of the Breusch-Godfrey Serial Correlation LM Test: (F-statistic) is about 0.21. Also, the model does not suffer from the problem of Heteroskedasticity of residuals, as there is no Arch effect in residuals, the probability of the Heteroskedasticity Test: ARCH: (F-statistic) is about 0.17. Looking at the probability of the Ramsey Reset Test: (F-statistic), the model is structurally stable and does not imply a misspecification issue (Table 7).

**Table 7:** Diagnostic tests for the ARDL (2,1,2,1) Model

Jarque-Bera Prob.	Ramsey Reset Test: (F-statistic prob.)	Heteroskedasticity Test: Breusch-Pagan-Godfrey: (F-statistic prob.)	Breusch-Godfrey Serial Correlation LM Test: (F-statistic prob.)	Heteroskedasticity Test: ARCH: (F-statistic prob.)	R <sup>2</sup>	Test
0.60	0.33	0.40	0.21	0.17	87.42 %	



**Fig. 1:** Structural stability tests for model parameters, using CUSUM, CUSUMSQ

The graph of the CUSUM test as well as the graph of the CUSUMSQ test are located within the critical limits at the level of significance (5%), and this indicates the stability and consistency of the Model's estimates between the results of the short and long term (Fig. 1).

**CONCLUSION**

This study focused on the Dynamic Impact of Financial Development on Economic Growth in Syria in the short and long terms during the period 1980-2018 while paying attention to the Financial Reforms and Legal System that took place during the period. This study used the new indicator for Financial Development which was developed in 2016 by the International Monetary Fund to measure all dimensions of Financial Development and to overcome the weaknesses experienced by the single traditional variables that have been widely used in the literature. The unit root tests led to the ARDL Bounds Test approach. The Error Correction Model was also used to study the relationship. The results indicated that there was an equilibrium relationship between Financial Development, Total Government Spending, Exchange Rate, and Economic Growth in

Syria during the period 1980-2018, in the long term. Furthermore, there was a positive and statistically significant effect of Financial Development on Economic Growth in the long term. Results showed existence of a positive and statistically significant effect of Financial Development on Economic Growth in Syria in the short term. Additionally, there was a positive and statistically significant effect of Total Government Expenditure on Economic Growth in Syria in the long term and in the short term, Also, there was a positive and significant statistical effect of the Exchange Rate on Economic Growth in Syria in the long term, in addition to the absence of a statistically significant effect of the Exchange Rate on Economic Growth in the short term. Thus, Total Government Spending, Financial Development and the legal system are determinants of Economic Growth in Syria in the short term, while Total Government Spending, Financial Development and Exchange Rate are determinants of Economic Growth in Syria in the long term. The Supply Leading Hypothesis was achieved in Syria during the period 1980-2018, which Patrick (1966) came up with, which means that Financial Development leads to Economic Growth and that Financial

Development generates greater Economic Growth, consistent with the proposal of “more Finance, more Growth” (Levine, 2003). Financial Development is a necessary and prerequisite for Economic Growth in Syria, and this is consistent with the theory of Finance leads Growth (Finance Lead Growth Theory), and these results are consistent with the study of: (Goldsmith, 1969) Levine, 1997; McKinnon, 1973; Schumpeter, 1911) (Levine, Loayza & Beck, 2000) and a study (Musabeh *et al.* 2020). And based on these results and conclusions, it is necessary to strengthen all dimensions of Financial Development. Correspondingly, working to ease Financial Restrictions and controls that limit the activity of the Financial Sector in Syria, such as: the daily withdrawal ceiling from Banks, restrictions imposed on Interest Rates and Exchange Rates, in addition to the high rates of legal reserve ratios. Also, there is a need to Gradual application of Financial Liberalization policies, which allows for an increase in credit to the private sector, leads to the accumulation of financial resources in their best use, reduces transaction costs and increases Financial Inclusion, taking into account the Financial Soundness of the Syrian financial system. It is also useful to work on Financial Literacy by educating the public about the importance of dealing with Financial Institutions and the Financial Markets and establishing government-backed programs to improve the level of Financial Literacy and spread Financial Awareness among individuals so that the Financial Sector in Syria can reach its actual potential. the model in this research could be very useful in decision-making, especially those related to reform policies to promote the SDGs or to modify current policies in response to a possible global financial crisis or shock.

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