



IMPACT OF FINANCIAL GROWTH ON THE ECONOMIC DEVELOPMENT OF OMAN

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Abstract

Purpose of the study: This paper aims to empirically test the long and short-run effects of financial development on the economic growth of Oman.

Methodology: This paper has applied the Unit root test, ARDL Bound Test for Cointegration, CUSUM, and CUSUMSQ Test for testing of hypotheses. The data used to test the relationship between financial development and economic growth covers the period from 1980 to 2017.

Main Findings: The major finding of the study suggested that the financial development variables measured in the research influence the economic growth in Oman.

Applications of the Study: This study can be useful to assess the strength of the empirical link between the financial sector and economic growth in Oman as one of the oil-exporting states of the Middle East Region, where such studies are inadequate.

The novelty of the Study: The finding of the study with an addition to the existing literature by incorporating the new variables like employment or poverty in the existing model provides new insight on the financial development of Oman.

Limitations and forward of the Study: The study has considered a set of data which in general acts as a catalyst for economic development in a particular country.

Implications of the Study: The outcome of the study suits the nature of the country and its socio-economic conditions. The outcomes of the study will not be suitable for every country and may result in spurious outcomes.

Keywords: Sultanate of Oman, Financial Growth, Economic Development, Trade, Broad Money, ARDL Model.

INTRODUCTION

Recently, economists have devoted countless attention to the literature on the association between financial indicators and economic development, and the main emphasis is on capital market expansion and economic growth and development. An enormous part of the researches has mostly concentrated on the contribution of macroeconomic stability, institutional growth, and financial market imperfections. Using these features, it is well recognized that financial markets are bouncing for economic growth. Applied studies of the link between financial development and growth have been slightly inadequate in the case of Oman. This paper is an addition to the entire literature which clarifies the extent of the influence of the financial crisis that is still recognized by both developed and developing countries all over the world. Western countries to be alarmed by debit inheritance, a surprising rate of joblessness, great political disorderliness, and worldwide insufficiency of competitiveness. The United States (USA) economy experiences political impasse through the undefined fiscal time and public debt rise. The evolving economy authorities such as China and Brazil are facing deterioration in their economies than might have a substantial consequence on world trade [Reuttner et al. \(2012\)](#), which indicated very slow growth in the economy. This expresses to what extent financial development (indicators) can have an emotional impact on the economies.

[Mckinnon \(1973\)](#); studies the effect of the direct intervention of the government on the financial institutions by impressive limitations on the banking sector, like interest rate maxima and credit agendas which have direct adverse impacts on the development of the financial sector then, subsequently, hinder economic growth. Nonetheless, despite the prominence of the financial sector and its primary role in the development process and economic growth, it's title role to speed up the growth in a lot of developing countries yet restricted including Oman.

The correlation concerning economic growth and financial development and trade openness is the main subject of concern of researchers in both areas hypothetical and empirical literature. The justification is that a powerful association between the development of financial markets and trade directness releases a supplementary track through which financial institutions and other real sectors may well interrelate more effectively. Well-developed financial institutions may well frame (structure) a relative advantage for real segments in the economy that deeply depend on foreign financing [Kletzer and Bardhan, \(1987\)](#); [Beck \(2003\)](#). Alternatively, trade openness has been perceived as one of the focal suppliers to the growth of the economy.



Export growth can lead to rising productivity, providing larger economies of scale. Also, exports are expected to relieve foreign exchange restrictions and therefore offer more contact to international markets. As discussed by [Melina et al. \(2004\)](#); and [Svaleryd and Vlachos \(2002\)](#); financial institutions and markets assist to powerfully take (direct) the movement of reserves, funds and investment in the country's economy in means that improve the physical and human capital buildup and the manufacture (production). Thus, powerful, advanced, and well-functioning financial markets play a significant title role in attaining economic competence. On the contrary, underdeveloped nations, which have poor advanced financial marketplaces, mechanisms, and financial bodies, find their exertion to increase capital is expensive and may well reduce or minimize the yield (return) on investments, reserves (savings) and the output (production) of goods and services ([Kunt and Levine, 2001](#)). Furthermore, in the emerging economies and underdeveloped countries, the open marketplace for goods and services appears to be a prerequisite for financial advancement. On the other hand, financial development permits emerging economies and developing nations to motivate the nation's trade directness.

RESEARCH PROBLEM

There have been inclusive studies directed to the field of financial development and economic growth from the time when the beginning of the 20th century. Several of the studies revealed the importance of financial development for the economic growth of the states all over the whole world. Despite the fact many studies have concentrated on the developing economies to show the connections between growth and financial development, nevertheless, there are inadequate studies done regarding the Oil exporting states of Middle Eastern region, [Nasir and Ali \(2014\)](#); So, Oman like other developing economy has free up its financial institutions and trade to realize higher rate of economic growth. The crucial argument for this strategy is that financial free up and trade strategies rise effectiveness in the production practice and directly affect economic growth. Therefore it is significant to understand the association between financial development and economic growth in Oman which is an economy with great oil reliance and strong financial rules in such a setup with unique characteristics.

Oman economy overview

Oman is categorized as a middle-income country where the economy is completely placed around oil (hydrocarbon resources). Crude oil and natural gas denote nearly 73% of the total revenues of the country in the year 2017. Nominal GDP of Oman has certified an acceleration by likely 8.7 % in the year 2017, contrariwise the International Monetary Fund (IMF) estimates that real GDP contracted by 0.3 % ([Oman-Market Overview 2018](#)).

The financial sector stays static and has a minor non-performing loan ratio. Liquidity terms restricted in 2016 but calmed up in 2017. The banking system is top-heavy, with the foremost bank by assets much larger than its nearest competitors, which has given rise to talk of consolidation ([Oman-Market Overview 2018](#)).

Oman is following the system of a free-market economy; nevertheless, the public sector (government) is at the current supreme vital player in the economy, mutually as a buyer of goods and services and as an employer. Substantial progress has taken place and the Omani economy has been developing gradually during the last 25 years (see figure 1 and table 1). On the other hand, with the variations in the international prices of oil, huge investments have been made in infrastructure, and therefore decrease foreign exchange reserves; there is a pressing requirement for the diversification of the economy. It is particularly essential to enlarge the different sources of export incomes in addition to offer jobs for an increasing population. The country has stimulated private national and external investors to take the guide in encouraging these initiatives, and the time of fundamental transformation from raw to factory-made exports has started, ([CBO Annual report-2018](#)).

Oman is deeply reliant on its declining oil wealth (resources) that create 84% of government returns (revenues). In 2016, a decrease in international oil prices pushed Oman's budget deficit to almost OR 4.4 billion (\$11.5 billion), or around 19% of GDP, but then again the budget deficit was decreased to 13% of GDP in 2017 as Oman condensed government subsidization. Oman has restricted foreign assets and is issuing debt to cover its deficit ([Economy of Oman, \(n.d.\)](#)).

Oman is using improving oil repossession procedures to increase production, but at the same time followed a development strategy (plan) that concentrates on diversifying the economy, industrial development, and denationalization (privatization), to decrease (reducing) the oil sector's support to GDP from 46% at current to 9% by 2020 in harmony with Oman's ninth five-year development plan. Industries that depend on gas and tourism are crucial constituents of the country's diversification policy. Oman's economic freedom mark is 61.0, letting its economy be ranked the 88th freest in the 2019 Index. Oman's total score continued as it is in 2018, with greater marks for country expenditure, government honesty, trade liberty (freedom), and employment freedom in line by drops in marks of five other factors. Oman is classified as 7th between 14 nations in the Middle East and North Africa region (MENA), and its total score is somewhat under the regional and world averages.

According to the data given by the National Centre of Statistics and Information of Oman (January-2019) foreign direct investment (FDI) at the end of 2017 crossed OR 9.34 billion (USD 24 billion). By sector, the oil and gas extraction absorbed more than half of foreign investment reaching more than OR 5 billion, whereas financial intermediation safeguarded FDI of OR 1.41 billion. This one of the reasons that hinder the vital role of the financial sector in the economy.

Table 1: Oman Economic Indicators (2013-2017)

	2013	2014	2015	2016	2017
Population (million)	3.6	3.7	3.8	4.0	4.1
GDP per capita (USD)	21,935	21,784	18,214	16,646	17,546
GDP (USD bn)	78.8	81.0	68.8	66.7	72.5
Economic Growth (GDP, annual variation in %)	5.3	1.2	4.7	5.4	-
Investment (annual variation in %)	12.4	2.4	1.1	-0.7	-
Industrial Production (annual variation in %)	3.1	0.2	5.4	3.2	-
Public Debt (% of GDP)	4.9	4.9	12.8	31.4	-
Inflation Rate (CPI, annual variation in %)	1.3	1.0	0.1	1.1	1.7
Exchange Rate (vs USD)	0.39	0.39	0.39	0.39	0.39
Trade Balance (USD billion)	24.4	25.6	9.1	6.2	-
Exports (USD billion)	56.4	53.5	35.6	27.5	-
Imports (USD billion)	32.0	27.9	26.5	21.3	-
International Reserves (USD)	15.9	16.3	17.5	20.2	16.1



Figure 1: Oman - Gross domestic product in constant prices growth rate

Source: Atlas, World, data. (2018)

Research objectives

The key objective of the study is to investigate the long and short-run effects of financial development on economic development in Oman. Specifically, this study aimed to (1) identify the long and short-run influence of the domestic credit to the private sector by banks on economic development, (2) investigate the long and short-run impact of broad money M2 on economic development, and (3) test the long and short-run impact of the trade ratio on economic development.

Research Hypothesis

To achieve the paper objects, we can reform the following hypotheses in the framework of the null (H_0) and alternative (H_1) which are specified as:

H_0 : there is no influence of financial development on economic development in Oman.

H_1 : there is the impact of financial development on economic development in Oman.

1. There is a positive effect of domestic credit to the private sector by banks on economic development in the short and long-run.

2. There is a positive effect of broad money M_2 on economic development in the short and long-run.
3. There is a positive effect of trade ratio on economic development in the short and long-run.

LITERATURE REVIEW

[Ozturk, \(2008\)](#) using a vector autoregressive model to investigate the causality between financial development and economic growth in Turkey for the period year 1975 to the year 2005. The results of VAR suggested that there is no long-run relationship between financial sector development and GDP growth; furthermore, the study shows a unidirectional causal relationship from GDP growth to financial development. Gemma [Estrada et al. \(2010\)](#); investigated the relationship between financial development and economic growth through econometric analysis on panel data of 125 countries and confirmed that there is a positive relationship between financial development and economic growth especially in developing countries. The result also showed that the impact of financial development on the country's growth is not noticeably different. The author also concluded that financial sector development's growth is diverting from mobilizing savings so there is a need to increase the quantity of investment that will ultimately be used to improve the efficiency of investment and ultimately contributing to higher productivity.

[Oluitan \(2012\)](#), conducted a study using three variables and was conducted using 31 African countries' data in the period between 1985 to 2005 to empirically investigate the relationship between financial development and economic growth. The three explanatory variables used were namely Liquid facilities (M_3) as a percentage of GDP, domestic credit rate at which the banking sector lends to private firms, and domestic credit to the private sector as a percentage of GDP. The results of the study reveal the importance of intermediation of the financial sector. Economic growth is driven by domestic credit to the private sector. However, credit provided by the banks to the private sector doesn't carry as much weight. In this context, an enduring and causal relationship between domestic credit provided to the private sector and economic growth is yet to be established.

[Malkawi et al. \(2012\)](#); used the technique of autoregressive distributed lag (ARDL) approach to co-integration on time series data from 1974-2008 to empirically investigate the relationship between financial development and economic growth of United Arab Emirates. The study carried out to measure the level of financial development and for that authors selected two indicators. The first indicator was the financial intermediary's sector's size (M_2/GDP) and the ratio of the lending credit by the commercial banks to the private banks as a percentage (%) of GDP. The three control variables also used were the inflation rate of the country, trade openness, and government expenditures of Nigeria. The results of the study revealed a negative and statistically significant relationship between financial development and economic growth of the UAE. The result also showed that the control variables selected for the study are found to have a significant negative impact on economic growth.

[Ibrahim \(2013\)](#); investigated the relationship between financial development and economic growth of Saudi Arabia from 1989-2008. To analyze the relationship, the author measured the financial development with the effect of credit that is provided to private sector banks, and the second indicator was stock market development. The result showed that domestic bank credit to private sector banks has a positive effect on economic growth but in the long run and has a negative effect in the short run. And the result showed that the second indicator has the opposite impact on economic growth. One more variable in the form of growth of industrial development tested by the author and result showed that growth in industrial development positively contributes to the economic growth of the country whether in the long run or short run.

[Iheanacho \(2016\)](#); examine the relationship between financial development and economic growth in Nigeria during the period year 1981–2011. The author applied the technique of the auto-regressive distributed lag (ARDL) approach to cointegration analysis. The result revealed that the financial development in Nigeria has insignificant as well as a significant negative effect on the economic growth of Nigeria in the long run and short run respectively. The result observed in the study is common in oil-dependent companies. And according to the author, the major reason may be the dominating role of the government-owned sector and inefficiency of the private sector in generating more economic opportunities that resulted in completed dependence on oil wealth of the country. The author also found the positive and significant influence of crude oil prices on the economic growth of Nigeria. [Prochniak and Wasiak \(2016\)](#); in their paper analyzed the impact of financial development and stability of the financial sector on the economic growth of the countries. The study covered the 20 years (1993-2012), 28 EU and 34 OECD countries, This paper attempts to analysis at what level the financial development influences the GDP of the country and what direction should be adopted by the financial system to develop the robust system that will be supported by economic growth, For measuring the degree of financial development, the author selected six variables: domestic loans provided by financial sectors, non-performing loans, the market capitalization of companies listed in stock exchanges, turnover ratios, capital/assets ratio sand monetized ration. Regression equation has been used to analyze the impact of financial development and stability of the financial sector towards the economic growth of the selected countries, the results show that there is a positive impact of the performance of the financial development towards the economic development of the selected countries. However, different variables representing the financial sector yield

different results in this area. [Michiel et al. \(2017\)](#); through meta-analysis in total 551 estimates from 68 empirical studies that take private credit to GDP as a measure for financial development and distinguish between linear and logarithmic specifications. They find positive significance in both the linear and log-linear specifications and logarithmic estimates give a robust positive average effect of financial development on economic growth after correction for publication bias. In our specification, a 10 percent increase in credit to the private sector increases economic growth with 0.09 percentage. For the linear estimates, no significant effect of credit to the private sector on economic growth is found on average. [Bist \(2018\)](#); investigate the long-run relationship between financial development and economic growth, for this he used panel unit root and panel cointegration analysis of 16 selected low-income countries for 20 years (1995-2014). Based on the result, the author concluded that there is a long-run cointegration relationship between financial development and economic growth. The panel cointegration analysis result also showed that the financial development of these selected countries has a positive and significant impact on economic growth. Through analysis, the author also found that the flow of credit towards the private sector in these countries is low and suggested policymakers give more emphasis on favorable policies towards private sector growth.

[Yang \(2019\)](#) compared the middle-level economies with high-level economies and investigated how the development of the financial system impact on the country's economic growth and development. The author used a granger causality test to find the impact. The result showed that financial development of any country leads to the economic growth of that country, he also found granger causality between equity market development and economic growth for these middle-level economies but he found opposite causality between economic growth and equity market development in the case of high-level economies that is not detected in the other middle-level economies. The author has used the standard of the World Bank to categorize middle level and high-level economies.

METHODOLOGY AND DATA COLLECTION

This section explains the methodology that can be implemented to examine the influence of financial development which is represented by three variables namely (domestic credit to private sector by banks, broad money M_2 and trade ratio) on economic growth in Oman. The study stresses econometric procedures that have been used to test the long and short-run relationships among the factors included in the study.

The co-integration approach is used as an econometric procedure for testing the long-run relationship between non-stationary time series variables. Consequently, the series is assumed to be co-integrated if two or more series are non-stationary, yet a linear grouping of them is stationary. In the current study, the Autoregressive Distribution Lag (ARDL) test for cointegration is implemented. The ARDL modeling method was originally introduced by [Pesaran and Shin \(1999\)](#) and later extended by [Pesaran et al. \(2001\)](#). Primarily, the ARDL approach to cointegration comprises two phases for (measuring) long-run relationships ([Pesaran et al. \(2001\)](#)). phase one is to examine the existence of a long-run relationship between all variables in the equation under testing, which is known as Bound Test. If there is evidence of a long-run relationship (co-integration) between variables, the second phase is then used to test the long and short-run models. When estimates of the long-run parameters are reached, the estimated equation also is used to achieve an estimate of the error correction model (ECM). The data used to test the relationship between financial development and economic growth is the group of all variables well-thought-out to do this study in Oman which covers the period (1980-2015). It is a secondary that is collected fundamentally from the annual reports of the Central Bank of Oman and World Development Indicators published by the World Bank.

The Empirical Model

The empirical model to be estimated takes the following general form:

$$GDPG \equiv F (BMNY, TRD.GDP, DCPRB GD) \tag{1}$$

$$\text{LogRGDP} = \alpha_0 + \alpha_1 \text{Log BMNY} + \alpha_2 \text{Log TRD.GDP} + \alpha_4 \text{Log DCPRB GD} + \epsilon_t \tag{2}$$

GDPG \equiv GDP Growth used to indicate economic growth

BMNY.GD = Broad money (M2) as a percentage of GDP

TRD.GDP \equiv Trade Ratio as a percentage of GDP

DCPSB \equiv Domestic Credit to Private Sector by Banks as a percentage of GDP

Table 2: Descriptive Statistics of the data

	GDPG	BMNY –M2	TRD.GDP	DCPSB
Mean	5.52	32.08	31.38	89.93
Median	5.18	31.35	30.69	87.42
Maximum	17.05	56.41	65.54	128.22
Minimum	3.44	15.73	13.35	71.36

Std. Dev.	5.16	7.48	11.96	13.66
Skewness	0.67	0.64	0.56	1.12
Kurtosis	0.31	2.31	0.18	0.78
Coefficient of Variation*	0.9348	0.2332	0.3811	0.1519

Source: Appendix 2 ---- * Own calculation

Entire variables have been averaged during the period 1980–2015 and shown in proportions (percentages). The mean real GDP growth over the sample is 5.18% restating the middle economic growth of Oman during this period. Concerning GDP growth, we refer to the small standard deviation low changes within the years and this might be a result of good government policies. Domestic credit to the private sector by banks to GDP ratio is averaged at 89.93% which shows the higher standard deviation which means that it shows major changes across the private sector absorbing credit. Trade ratio as a proportion of GDP is also averaged 31.38% and shows considerable variances through the countries due to the standard deviation which is 11.96. To permit comparison of the variables for fluctuations, we calculated the coefficient of variation (CV) as the proportion of standard deviation to mean (table 2) Growth of GDP is the most unstable variable given the high values of CV. Domestic credit to the private sector is least volatile. All the variables are skewed to the right since the values of skewness are positive. Although our sampled measures are gathered (collected) from the same country (Oman), there still are some little variations in the macroeconomic indicators.

UNIT ROOT TEST RESULT

As the present study is reliant on the testing of the influence of financial development (bank credit to private sector, broad money M2 and trade ratio) on economic growth in Oman during the period 1980-2015, it needs examining the stationarity of each variable stated in the study. Stationary tests permit for confirming whether the complete series is stationary or not. Here the Phillip-Perron (PP) test is implemented to examine the non-stationary. As a result, we have to examine the order of integration, to approve and assure that the variables are not 1(2) stationary to avoid spurious results. In the existence of 1(2) variables, the computed F-statistics assumed by [Pesaran et al. \(2001\)](#) are not in force, because the bound test is based on the assumption that the variables are 1(0) or 1(1), so, the implementation of unit root test in the ARDL procedure might still be necessary to assure that none of the variables is 1(2) or beyond. The results of the test are shown in table (3). The results suggest that all the variables are integrated of order 1(1) which means stationary at first difference. This outcome reinforced the use of ARDL bounds technique to decide the long-run relationship between the variables and it is reliable with the economic theory which proposes that most of the macroeconomic variables are not stationary at the level, but stationary at the first difference 1(1).

Table 3: Unit Root Test for Stationary of Variables

Name of the variable	Level			1 st Difference			
	With Constant	With Constant & Trend	Without Constant & Trend	With Constant	With Constant & Trend	Without Constant & Trend	Lag Order
Log(GDPG)	2.7966	-1.0565	2.7333	-1.4988	-6.9763	0.0727	1(1)

Log(BMNY)	-1.2167	-1.6010	-0.5980	-5.4121	-4.8914	-5.3359	1(1)
				***	***	***	
Log(TRD.GDP)	-1.3620	-1.4312	-0.9975	-5.8852	-4.8998	-4.9998	1(1)
				***	***	***	
Log(DCPRB GD)	-2.4302	-2.3452	-1.1451	-3.9102	-3.4827	-3.7633	1(1)
				***	**	***	

Source: Own Calculation based on data of Appendix 1

Notes:

- a: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1% and (no) Not Significant
- b: Lag Length based on SIC
- c: Probability-based on MacKinnon (1996) one-sided p-values.

Bound Test for Co-integration

In this section, the co-integration investigation was run to catch the long-run association between financial development representatives and economic growth. As it is shown before that, the variables under concern are stationary at their first difference then; the long-run relationship will be now verified by adopting bound test for co-integration within the ARDL modeling approach (Pesaran et al 2001). For step one of ARDL analysis, the paper examines the existence of a long-run relationship in models (1, 2, 3, 4, 5). As the paper used annual time series data and a limited number of observations (36), the lag length will be limited. Table (4) below provides results of the bound test of a long relationship, where the calculated F-statistics (11.32287) in the model is higher than the upper bound critical value at the 1% significant level. This point out that the null hypothesis of no co-integration is rejected and the alternative hypothesis is accepted, that co-integration relationship among variables exists in each of the models. These result signposts that, the financial development variables measured in the research influence the economic growth in Oman.

Table 4: ARDL Bounds Test for Co-integration

Test statistics	value	K
F-statistics	11.32287	3
Critical Value Bounds		
Significance	Lower limit	Upper limit
10%	3.47	4.45
5%	4.01	5.07
2.5%	4.52	5.62
1%	5.17	6.36

Source: Own calculation based on results generated from Eviews 9.5

Estimated Coefficients (elasticities) in the Long run

Table (5) below shows that the inclusive goodness of fit of the estimated equation is moderately low ($Adj. R^2 = 0.58$). The estimated equation is low; the F-statistics which measure the joint significance of all regression is statistically significant at 5% level. Durbin Watson test as it is found to be 1.59 indicates that there is no autocorrelation problem. Moreover, the results in table 5 show that financial development indicators (broad money and trade ratio) impact the real GDP positively. While domestic credit to the private sector by financial sector impact the real GDP negatively.

Table 5: Estimation of Coefficients (elasticities) in the Long-run

Variable	Coefficient	Std. Error	Prop	R^2	Adj. R^2	F-Statistic	Prob.
Constant	12.260606 (2.615575)	4.687537	0.0204				
LOG(BMNY)	3.255314 (2.332452)	1.395662	0.0351	0.81	0.58	3.52	0.0108
LOG(DCFS)	-1.341874 (-3.271925)	0.410118	0.0056				
LOG(TRD)	0.575907 (0.503926)	1.142840	1.142840				

Source: Own calculation based on results from Eviews 9.5

Table (5) and the estimated equation of growth real GDP show the results of the long-run relationship between the dependent variable GRGDP and the other repressors'. As predictable, the domestic credit to the private sector by the financial sector variable has an unexpected negative sign. But although, the level of domestic credit to the private sector by financial sector a negative and statistically significant impact on economic growth in the long run, the relationship between them in term of elasticized remains very strong i.e. a 1% increase in domestic credit to the private sector by financial sector leads to a respective economic growth decrease of 1.34 %. This indicates that domestic credit to the private sector by the financial sector especially banks, which constitute a substantial part of the financial sector, in Oman has an important effect on economic growth. This negative relationship between domestic credit to the private sector by the financial sector and economic growth may be attributed usually to the prevailing situations of the negligence of banks to the productive sectors, and other factors such as uncertainty over agricultural sector productivity which resulted in declining investment, particularly

in major agricultural projects. Also, another reason is that a significant part of loans is given as personal loans which are not utilized in consumption and not in productive assets. This finding is consistent with [Ali \(2013\)](#).

As is shown also broad money M2 and trade ratio have the expected positive signs. That means they exert a positive and statistically significant impact on economic growth in the long run in case of broad money M2, the relationship between them in term of elasticizes remains strong especially broad money M2 i.e. a 1% increase in broad money M2 leads to a respective economic growth increase of 3.25%. The estimated coefficient is highly significant in the case of broad money M2. Despite that, the trade ratio is insignificant and this may be attributed to the huge size of imports where most of them are consumption good and not inputs for further production. This finding is consistent with [Sufyan \(2007\)](#); [Galil and Ying \(2008\)](#); [Umar and Abdulhakeem \(2010\)](#); and [Aric \(2014\)](#); results.

Estimated Coefficients (elasticities) in the Short-run

In the end, the short-run dynamics are estimated through the ARDL approach where the residuals bring about from the matching estimated long-run equation are used as error correction term (ECT). The outcomes are shown in Table (6) below. The coefficient of the lagged residual (EC_{t-1}) in the ECM model shows the speed of adjustment towards the equilibrium following a shock to the system. The negative and significant ECT validates our system and the statistics show the following results:

The domestic credit to the private sector by banks variable has exerted positive signs. But even though the level of domestic credit to the private sector by the financial sector exerts a positive impact on economic growth and statistically significant in the short run at the second difference, the impact remains strong as it is shown by the confidence. A 1% increase in DCPSB leads to a decrease in economic growth by 3.1 points. This finding is consistent within his study about Financial Development and Economic Growth in sub-Saharan Africa, [\(Ibrahim and Alagid, 2017\)](#).

The broad money M2 shows a positive impact on economic growth and statistically insignificant in the short run especially at the first difference. That means there is a relationship between broad money M2 and economic growth in the short run. Trade ratio found to be negative and statistically significant in the short run. Theoretically, the effects of trade can be positive or negative [\(Ali 2013\)](#); as such, the net effects can be determined only empirically. So the result is consistent with the theory in the literature.

In terms of elasticity, the impact remains weak as the result shows where an increase in TR by 1% can decrease economic growth by 0.03% point.

The ECT coefficient is estimated approximately as (-2.64), which means that the system could reach back to equilibrium in about half a year and three months (0.46 years) after a shock.

Table 6: Estimation of Coefficients (elasticities) in the Short-run

Variable	Coefficient	Std. Error	Prob.	R ²	Adj. R ²	F-Stat.	Prob.
	6.308764						
DLOG(BMNY(-1))	(2.686511)	2.348311	0.0177				
DLOG(DCFS(-2))	3.156141	1.153406	0.0161	0.86	0.73	13.31	0.0002
	(2.736365)						
	-6.571012						
LOG(TRD(-3))	(-2.455343)	2.676209	0.0278				
CointEq(-1)	-2.145934		0.0000				
	(-6.156439)	0.429783					

CUSUM and CUSUMSQ Test

It is vital to test whether the above long-run relationships are stable for the entire period of study. The stability of the model parameters is examined using the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) of the recursive residual test for structural stability proposed by Brown et al. (1975). CUSUM and CUSUMSQ are plotted against the breakpoints. Parameter stability is indicated when the CUSUM and CUSUMSQ plots against time remain within the 5 % significance level over the sample period, while parameters and hence the variance are unstable if these plots move outside the 5 percent critical lines. The plots of the CUSUM (Figure 2) and CUSUMSQ (Figures 3) below are obtained from a recursive estimation of the three versions of the model. These plots indicate stability in the coefficients of the first and the third versions of the model.

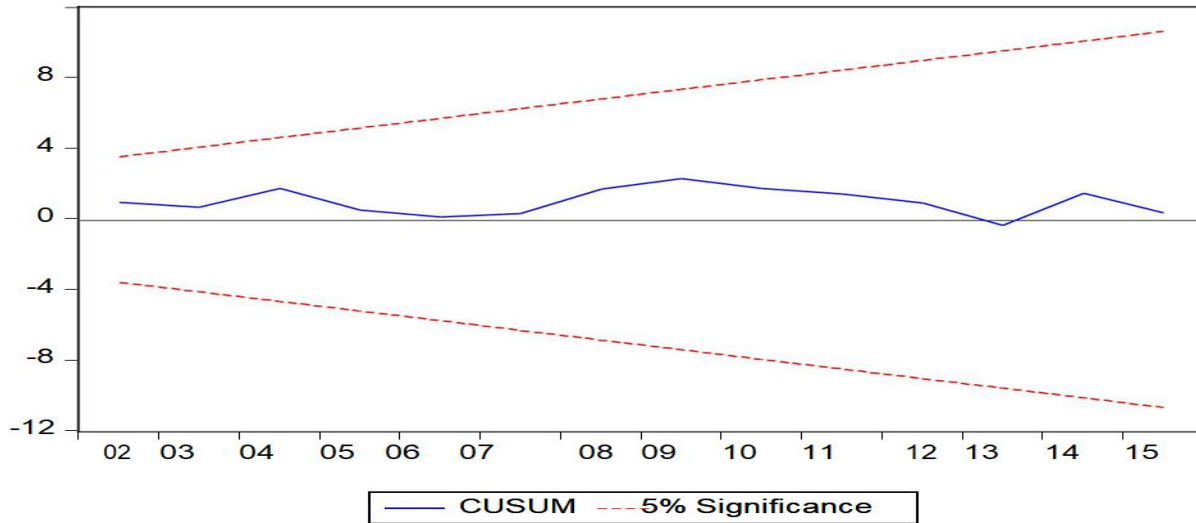


Figure 2: Cumulative sum of recursive of residuals: model 1

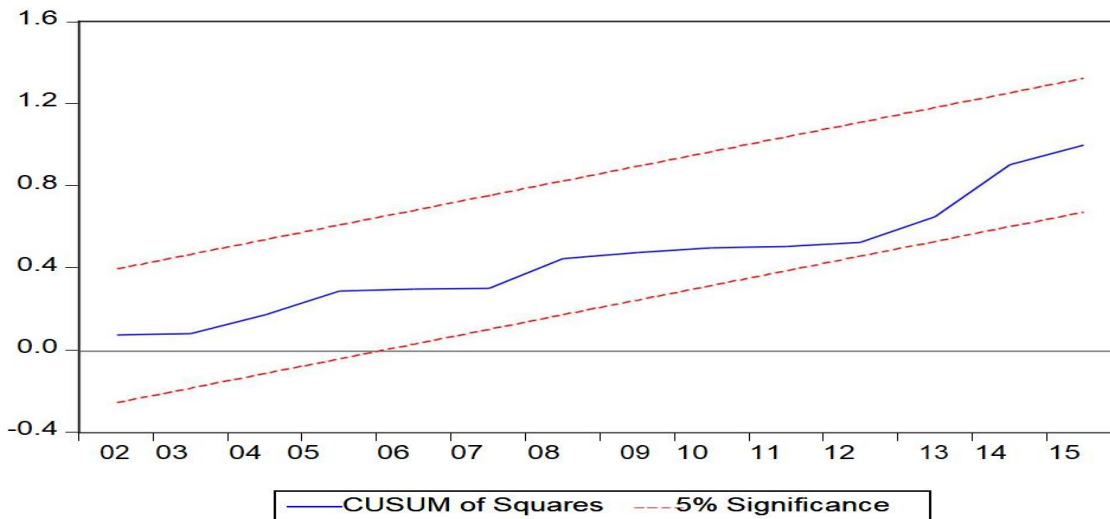


Figure 3: Cumulative Sum of Squares of Recursive Residuals: model 1

The positive relationship between broad money and real GDP consents of [Chaitip et al. \(2015\)](#), [Adu et al. \(2013\)](#); and [Arfanuzzaman \(2014\)](#). The findings of this paper also indicate that trade ratio has an important role in the economic growth of Oman, endorsing the trade-led growth hypothesis both in the short and long run. Trade ratio exerts a positive and statistically significant impact on economic growth in the long run, the relationship between them in terms of elasticizes remains weak i.e. a 1% increase in trade ratio leads to a respective economic growth increase of 0.50%. This may be attributed to the nature of trade as it is not oriented to inputs (capital goods) rather than it is oriented towards consumption goods, this may tend to crowd out domestic production. Also, it may be attributed to the restrictions on trade (tariffs). This finding consensuses of [Asfaw \(2014\)](#); [Nejad et al. \(2014\)](#); [Brueckner & Lederman \(2015\)](#); [Sufyan \(2007\)](#); and [Haque \(2020\)](#); results. The domestic credit to the private sector by banks variable has exerted negative signs. But despite the fact that the level of domestic credit to the private sector by banks exerts a negative impact on economic growth and statistically significant in the long run, the impact remains weak as it is shown by the coefficients. As 1% increase in credit to the private sector by banks leads to a decrease in economic growth by 1.3% point. This finding is consistent with [\(Ibrahim & Alagidede 2017\)](#) in his study about financial development and economic growth in sub-Saharan Africa and also consistent with [Galil & Ying, \(2008\)](#); and [Saber \(2013\)](#) results.

CONCLUSION

The basic aim of this paper is to scan the short and long-run relationship between financial development and economic development in Oman by employing time series data for the period (1980-2015) implementing the ARDL bounds testing

method to co-integration and the associated error correction model (ECM). As per financial development pointers concerned, the outcome of the long run scrutiny points out that financial development indicators (broad money and trade ratio) impact the real GDP positively. While domestic credit to the private sector by the financial sector impacts the real GDP negatively, which are expected signs as per the economic theory except for domestic credit to the private sector by the financial sector, which is swerving with the common indication in the empirical literature, but it is not unexpected concerning Oman. A likely clarification for the adverse kin between domestic credit to the private sector by the financial sector and economic development is the use of credits in unproductive activities. These results are matching with some studies in the literature. In the short-run, the trade ratio shows a negative relation, and the broad money M2 shows a positive correlation but statistically.

One of the most noticeable consequences of our outcomes is that if Oman is to grasp its target growth rate (development) it needs to restructure the financial sector well, generate a stable political and economic climate encouraging investment.

The outcomes of this paper indicate that financial development has made good support to accelerate economic growth and development in Oman. The coefficient of the lagged error correction term (-2.145934) is negative and statistically significant at the 1% level.

LIMITATION AND STUDY FORWARD

This study has two limitations. The first is the data limitation, so this study centers on a particular country case – Oman with the need for further research (larger sample-panel data). The second limitation is the indicators of financial development in this study, which measures the size of the financial intermediary sector, are not the only factors that accurately measure the functioning of the financial system. The study did not illuminate whether or not other financial institutions like, stock markets, non-bank financial mediators, or the combination of markets and intermediaries matter for economic growth. Further researches can investigate disaggregated financial modernization; that is, product innovation and further kinds of financial improvements and their separate impact on economic development. Studies could also examine whether financial development is linked with productivity growth and capital accumulation, which theory stresses.

CO-AUTHOR CONTRIBUTION

First Author Contribution was involved in planning, supervised the work, conclude, and reviewed the work.

The second author involves processing the work, drafted the manuscript analyses the data, and interprets the results.

The third author collects the data and designed the figures, tables, and references and reviewed the work.

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