

# WHAT IS THE LINK BETWEEN FINANCE AND ECONOMIC GROWTH? A REVIEW

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## Abstract

The paper contributes to the body of knowledge in the area of economic growth and finance by reviewing empirical works to assess the link and causality between economic growth and financial development. The paper is significant since economies aim at achieving economic growth and with the development of financial institutions their role in achieving economic growth needs to be assessed. Purposive sampling method was used in selecting the research works for the review. The sources of information are journals and conference papers. These findings have been mixed or inconsistent. There is significant positive relation between finance and economic growth in some studies while as other studies could not establish the same findings. In some studies there is unidirectional causality while as in other studies there is bidirectional causality. This calls for further studies to contribute to the debate using multiple models that are recent in a single study.

**Keywords:** Economic growth; financial development; causality

## 1. Introduction

The role of financial development in economic growth has received a lot of attention in both theoretical and empirical literature since one of the main goals of economic managers and planners is economic growth. One argument is that efficient financial sector results in savings mobilisation which leads to investment with the resultant effect of economic growth, other things equal.

Other researchers criticise this view and explain that growth in income (economic growth) results in efficient financial sector development. There are others who think that financial development leads to economic growth while as economic growth also leads to financial development. The last group is those who believe there is neutral effect between finance and growth (Neutral effect) effect. This means there is no statistical significant link between growth and income.

Some researchers argued that there is complex link between finance and growth for it to be identified in an empirical study and that if the link is identified with causality from finance to growth, then more effort must be put in place to develop the economy through finance.

The motivation of the paper is as a result of the fact that results from empirical study seems inconsistent. Hence, the researchers provide comprehensive review of the existing empirical works so as to fill in the literature gap since no such recent detail review exist to the knowledge of the researchers.

The global objective is to contribute to the body of knowledge that exists in the area of finance and economic growth, by reviewing empirical studies based on econometric studies. Specifically, the paper identifies the various arguments in the literature to determine which one is supported by data.

The questions underlying the review are; what is the relationship between finance and growth and why? What is the direction of causality between finance and growth and why? The assumption is that financial sector matters for economic growth in both short and long run.

The assumption and the questions are answered through the use of secondary information obtained from journals, conference papers, and reports through archival studies from internet, companies' files and libraries. These information were obtained through purposive sample method.

The findings may not be generalised to the larger community since they were selected through nonprobability sample method. The material review is also limited only to studies based on time series econometric analysis so as to avoid the review of bias spurious results.

## 2. 2. REVIEW OF LITERATURE

This section of the paper contains the review of studies on the link between finance and economic growth. For example, Johannes et al. (2011) using Johansen cointegration established positive relationships between financial development and

economic growth in the long run and short run for Cameroon for the period 1970-2005 for Cameroon at 5% level of significance.

This indicates that if the financial sector develops the economy also growth and if the financial sector does not growth the economy will also suffer growth. Unidirectional causality from financial development to economic growth was also found in the long run but not in the short run at 5% level of significance. Financial sector development cause economic growth in the long run and the short run. Economic growth is as a result of financial sector development.

This study unlike some of the previous studies includes control variables such as investment rate, the size of government and openness of the economy. They also investigated the stationary properties of the series to avoid spurious regression or results.

Using panel cointegration analysis Cavenaile et al. (2011) investigated the long run relationship between financial development and economic growth for five developing countries (Malaysia, Mexico, Nigeria, Philippines and Thailand), for the period 1977- 2007.

From their findings they concluded that there is significant long run relationship between economic growth and financial development. Causality run form financial development to economic growth though evidence was found for weak bidirectional causality.

They concluded that “promoting the development of the financial system may support long run economic growth.” This study unlike some of the previous ones included variables from stock market and the banks to capture the total effect of financial development. This allows for broader discussion of the effect of financial development on economic growth.

Chakraborty and Ghosh (2011) also used panel data for five Asian countries (Thailand, Korea, Indonesia, Malaysia, and the Philippines) for the period 1989-2006 to examine the link and causality between financial development and economic growth. The results indicated that the series were integrated and are cointegrated.

There is significant long run relationship between financial development and economic growth. Results from the granger causality test shows that financial development proxied by market capitalization Granger courses economic growth. Economic growth also Granger causes financial development. They concluded that economic growth helps the banking sector to grow.

Dabos and Gantman (2010) examined the link between financial developments and economic growth for the period 1996-2005 for 98 countries. The econometric method is dynamic panel’s method. The regression results revealed that there is no statistical significant relationship between financial development and economic growth.

Based on these findings the authors conduced that “the finance-growth link is not as firm as portrayed in the literature” The methodology of this paper is of interest for using panel analysis which solve the problem of omitted variable in the model specification. Their model also included control variables to avoid biasness. The control variables were institutional quality and the size of the economy.

Oluitan (2010) examined the link between bank credit and economic growth for Nigeria for the period 1970-2005. The cointegration results based on the Johansen approach indicated significant cointegration relationship among financial development proxies and real GDP per capita. This indicates statistical significant long run relationship between financial development and economic growth in Nigeria.

Results on causality test revealed short run causality from real GDP per capita to financial development at one percent level of significance but not from financial development to economic growth. In disagreement of the model estimated is the non-inclusion of stock market variables as control variables in the study to fully capture the effect of financial development on economic growth.

In support of the estimation procedure is the unit root test performed to avoid spurious results and the use of Johansen cointegration approach.

Bangake and Eggoh (2010) used panel data to examine for 71 developed and developing countries over the period 1960-2004 the relationship between financial development and economic growth and the direction of causality.

The result on the cointegration test revealed that the variables are cointegrated at the 1 percent significance level which indicates statistical significant long-run relationship among the variables in the study for all the countries. The results indicated that the link is stronger in the high income economies than in lower income economies.

The panel VECM results which was based on the GMME revealed that there is statistical significant short and long run causality running from finance to economic growth in all the countries in the study, with the long run causality been strong than the short run causality.

There was also significant long run causality running from economic growth to financial development but not significant short run casualty from growth to finance. These findings support significant bidirectional causality for the link between finance and economic growth the demand-side and supply side hypothesis are supported in this study.

The study by Bangake and Eggoh (2010) is interested for these reasons. They included control variables such as government

expenditure as ratio to GDP (GOV) and the openness to trade as the ratio of exports and import to GDP (OPEN). Unit root test was also performed to avoid spurious results. But the three financial development proxies used did not capture the stock market effect on economic growth.

Kargbo and Adamu (2010) identified short run and long run, relationship among financial development index, ration of investment to GDP, real deposit rate, and economic growth. This indicates that through investment financial development positively affect economic growth. This study did not take into consideration causality issues.

The ARDL model was used which is current in nature and appropriate for small sample. Kargbo and Adamu (2010) study follows the standard practice by examining the unit root properties of the series to assure valid results.

In the Baltic countries using quarterly data for the period 1995-2008 support was found for the view that financial development cause economic growth in the long run by Soultanaeva (2010). Financial development was proxied by banking credit available to private sector. The study did not consider the stock market variables which are considered in some study to ensure expanded discussion of the effect of financial development on economic growth.

The study by Soultanaeva (2010) did not also include or consider the bound testing model which is recent. But Soultanaeva (2010) study follows standard procedure for dealing with time series analysis by investigating the stationarity properties of the series before estimating the regression to avoid spurious results. Soultanaeva (2010) study did not include any control variables and the results might suffer from bias since some important variables might be missing in the model estimated.

In a study by Jenkins and Katircioglu et al. (2010) for Cyprus for the period 1960-2005 using annual data, evidence was provided for stable long run relationship between financial development (proxied by M2) and economic growth. Causality runs from economic growth to financial development. The study was based on bound testing approach using the ARDL model and granger causality test. The study by Jenkins and Katircioglu et al. (2010) did not consider financial market variables which are considered in some study.

Akinlo and Egbetunde (2010) used VECM to establish cointegration relationship between financial development and economic growth in selected ten Sub-Saharan Africa countries (1980-2005). Significant long run relationship between financial development and growth was established. The study revealed different direction of causality in the countries.

Bidirectional causality was found in Chad, Saraland, Sierra Leone, South Africa, and Kenya. It was also found that economic growth granger causes financial development in Zambia while financial development also granger causes growth in Nigeria, Gabon, Central Africa Republic and Congo Republic

The analysis was based on multivariate cointegration and error correction modeling. Units root tests were performed to avoid spurious results. Control variables (per capita income, capital stock, and real interest rate) were included in the model to avoid simultaneous bias in the regressions.

Colle (2010) identified cointegration and statistical significant long run relationship between financial development and economic growth, which shows that if financial sector develops the economy grows and if the economy grows the financial sector also develops in the long run. Bidirectional causality was found for some of the countries in the study but not for some other countries. This indicates that finance positively affect growth while as growth also affect finance.

Esso (2009) examined the link and causal relationship between FD and economic growth for ECOWAS countries. The F-statistics computed for the bound testing exceeded the upper bound critical value at the 0.05 signature level and the null hypotheses of no long run relationship between FD and Economics growth was rejected.

This means positive statistical relationship between FD and Economic growth for countries such as Togo, Sierra Leone, Niger Cape Verde, Cote d'Ivoire and Guinea. That is if the financial sector develops it leads to economic growth in those countries.

The long run relationship between the variables was all smaller such 0.29; 0.06; and 0.12 as compared to the findings from other studies which have large values (Spears 1992). This means the relationship was not strong but weak.

There was insignificant long run relationship for other countries such as Nigeria, Ghana and Benin which contradicts some earlier studies. This also means the development of the financial sector does not affect the growth of the economy.

There was significant negative effect of FD on growth in Cape Verde, and Sierra Leone. If the financial sector develops the economy does not grow. For the economy to grow the financial sector does not matter. The growth of the financial sector is works against the economic growth of the countries.

On the issue of causality, it was revealed at the 0.05 significant levels that FD causes EG in Guinea, and Cote d'ivoire. This means economic growth is as a result of financial sector development. Financial sector development is not only a determinant of economic growth but also it causes economic growth which also contradict some earlier studies.

The study by Esso (2009) is of interest for the fact that stationarity properties were investigated. Larger sample size was also used in this study. Esso (2009) argued that it is important for the two countries with positive relationship between FD and Growth to seriously develop the financial sector if they intend achieving sustainable growth. The study is based on bivariate analysis which may suffer from omission of relevant variables.

A study by Ghimire and Giorgioni (2009) for group of countries (1970-2006) found that the series (private credit, bank credit, capitalization, and value traded, capital formation, and education) were integrated. It was also revealed that private credits have significant negative effect on economic growth in addition to turnover. This means credit facilities to the private sector do not improve economic growth but rather worsen it.

The study again established no strong positive relationship between private credit and economic growth in the long run, for various countries in the study. The conclusion from these findings is that the stock market does not promote economic growth. The study did not take into account the causality direction of the variable to discuss cause and effect

A study by Vuranok (2009) on Turkey (1991 -2008) found no significant long run relationship between financial development and economic growth, though one Proxy for financial development which is the ratio of M2 to GDP and GDP were cointegrated at 5% level of significance. That is a development in the financial sector does not influence economic growth in the long run.

There was also no significant causality among the variables under investigation. Financial sector development does not cause economic growth. Economic growth does not result from financial sector development.

This paper follows procedure for time series analysis by examining the stationarity properties, cointegration and causality. This helps to avoid spurious results and makes the results reliable from econometric point of view.

Bangake and Eggoh (2009) also reassessed the link and causality between financial development and economic growth using panel analysis for the period 1960-2004 for developed and developing countries. Evidence was found for statistical significance long run relationship between financial development and economic growths.

There was also bidirectional causality between the variables. The effect of causality was stronger in low income countries than middle and high income countries. Other control variables in the models were government size and openness which were also integrated.

Pradhan (2009) examined the causal nexus between economic growth and financial development for India (1993- 2008) using multivariate VAR model and assessing unit roots properties. Evidence was found for statistical significance for long run link. The Granger causality test indicates bidirectional causality between economic growth and financial development proxied by money supply, bank credit.

There was unidirectional causality from financial development (proxied by market capitalization) to economic growth. Based on the findings Pradhan (2009) concluded that “financial development is considered as the policy variable to enhance economic growth and economic growth could be considered as the policy variable to generate financial development in the economy”. A control variable such as trade was added to the model to avoid bias results.

Burzynska (2009) used Johansen test and Granger causality test in VAR framework to examine long run relationship and causality between financial development and economic growth for China (1978-2005) using time series data and assessing unit root properties.

The results on the cointegration analysis revealed that the variables are cointegrated and that there is significant long run relationship between financial development and economic growth. Results on the causality test revealed different direction of causality. This resulted from the types of loans and banks used in the model.

There is bidirectional causality between economic growth and financial development. Causality runs from economic growth to financial development (state owned banks) while as financial development (Loans to construction sector) also Granger cause economic growth. The study is interesting in that it uses different proxies for financial development including the type of financial institutions.

Kilimani (2009) study for Uganda (1970-2006) established that, financial development significantly contributes positively to the growth of GDP in Uganda. Causality test revealed that financial development Granger causes economic growth.

This study unlike some of the studies reviewed did not use cointegration to assess the long run relationship. The study is an improvement over some other studies for using control variables such as real interest rate, inflation rate, fiscal deficits, exports, exchange rate and population. The stationarity properties of the series were investigated to avoid spurious results.

Ozer and Sen (2009) also examined finance-growth link for 65 countries (1960 1995). The finding from the regression analysis was that, growth effect of financial development is strongly related to the level of inequality in the country under consideration.

The relationship is weak and disappears in countries where inequality is high. The authors did not consider causality issues to discuss cause and effect. The paper did not examine long run and short run issues as other studies.

Ahmed (2008) estimated the link between economic growth and financial development for 15 sub-Saharan African countries (1976-2005). The results show significant long run relationship between economic growth and financial development.

The results show significant long run relationship between economic growth and financial development. There was causality running from financial development to growth in five countries, with bidirectional causality in five countries.

Causality runs from economic growth to financial development in two countries. Ahmed (2008) concluded that “Africa should adopt strategies to enhance the role of the financial sector in promoting economic growth”.

Uyanga and Suruga (2008) investigated the nexus between financial sector development and economic growth for 112 countries for the period 1970-2003. Significant positive effect of financial development on economic growth at the 5% significant was established. This results hold for both lower and middle income countries, as well as upper middle and high income countries. The study did not look at the issue of causality which is important for policy decision. Relationship study without causality is not enough.

Hurlin and Venet (2008) investigated the causality between economic growth and financial development for 63 industrial and developing countries (1960-2000). There was homogenous non causality from financial development to economic growth at 5% significant level. Based on these findings the authors concluded that

“either there is no empirical evidence of a casual influence of financial depths on economic growth in the short run or that the causality from fiancé to the real side of the economy is too complex relationship to be identified by a bivariate Granger causality test”

Taghipour (2008) examined the role of banking system development in economic growth for Iran (1960-2004) using annual data. The analysis revealed structural breaks in the data for the 1979 revolution and the years of war in Iraq.

The cointegration results revealed one cointegration vector. This indicate statistical significant long run link among the variables at the 5% level of significance. If financial sector develops, the economy grows. The result at the 5% significant level indicates bank development Granger cause economic growth “through increasing the capital accumulation channel, but not through productivity channel”.

The researcher indicated that the “supply-leading view is supported” and that financial development positively affect economic growth of Iranian economy. Taghipour (2008) concluded that “policies that affect financials system are also likely to influence investment and economic growth”.

Abu-Bader and Abu-Qarn (2008) used four different financial development proxies to investigate the finance –growth nexus for six MENA countries. The countries were Algeria, Egypt, Israel, Morocco, Syria, and Tunisia.

Results on the Granger causality test show that financial development Granger cause economic growth in five of the MENA countries. The authors concluded that

“the financial reforms that most of the countries in this study have undertaken in the past three decades were successful, to different levels, in achieving the desired result of enhancing economic growth, especially by improving efficiency. However, these reforms were not as successful in enhancing capital accumulation in these countries.”

In support of the approach used in the study is the control variables included in the model. Investment variable was included to measure the channel of influence of financial development on economic growth. The share of government expenditure to GDP was also added. This helps to avoid biasness in the estimation resulting from the problem of omitted variable.

Quarthey and Pra (2008) used various proxies for financial development to examine the link between financial development and economic growth as well as the causality. Some evidence of the effect of finance on growth was established hypothesis when financial development was proxied by ratio  $M_2$  to GDP only.

Hornig et al. (2007) discussed the relationship amount insurance demand, financial development and economic growth for Taiwan (1961-200). The study was based on three-variable VAR. They found that economic growth affects insurance demand in the long run and short run. Financial development in the long run causes variations in the insurance demand.

Financial development causes economic growth. Economic growth positively affects insurance expansion in Taiwan. This study is different from other studies for including insurance demand in the model.

Spinthiropoulos et al. (2008) examined the relationship among economic growth, financial development and the degree of openness of the economy for Greece (1960-2006) using annual data and cointegration test. It was found out from the model estimation that the series were cointegrated.

There was statistical significant long run relationship between economic growth and financial development but not in the short run. This indicates that the financial sector plays positive role in the economic performance of the economy.

It must be noted that, this study did not indicate the direction of causality among the variables in the model, which will allow for discussions on cause and effect. Financial development was proxied by the ratio of money supply to GDP and



openness by net export ratio to GDP.

Jalil et al. (2008) explored the link between financial development and economic growth for Pakistan and China (1960-2005). The econometric estimation is based on the ARDL cointegration model. Results from the cointegration analysis revealed statistical significant cointegration relationship among the series in the model.

There was significant positive long run relationship in Pakistan between financial development and economic growth. In the case of China evidence of positive significant long run relationship between deposit liability ratio and economic growth.

The authors concluded that “the financial sector reforms have increased markedly the financial depth in China and Pakistan”. The study avoided spurious results by embarking on stationarity test before the estimation of the long run model.

Amiruddin et al. (2007) study for Malaysia produced indicated cointegration link between financial development and economic growth which indicated significant long run relationship.

Financial development was found to granger causes economic growth while economic growth also granger causes financial development. This indicates bidirectional causality in Malaysia during the period under discussion.

The study follows standard procedure of analysing time series by embarking on unit root tests to avoid spurious regression. Financial development was measured by ratio of the total credit in the economy to GDP. Amiruddin et al. (2007) study also included control variables such as inflation rate, net export. This helps to avoid bias in the results and makes the results more valid.

Acaravci et al. (2007) carried VAR estimation for Turkey (1986 -2006) and revealed on significant cointegration relationship between financial development and economic growth.

This indicates the absence of significant long run relationship between economic growth and financial development. The results on the causality test based on the Granger causality tests indicated that financial development (domestic credit provided by banking sector) Granger cause economic growth but not the other way or reverse causality. These findings provide support for the supply side hypothesis and not the demand side hypothesis.

The study by Acaravci et al. (2007) did not include any variable from the stock market to fully capture the total effect of financial development. The model did not also include control variable. These findings may suffer omitted variable bias. In support of the estimation method is the stationarity test which helps to avoid spurious test results.

Halicoghe (2007) study for Turkey (1968-2005) indicated significant cointegration among the series in the model. There was significant long run link between financial development and economic growth at the 5% and 10% significant levels.

The results on the causality test revealed financial development cause economic growth at 5% and 10% levels of significant. There is no statistical significant short run causality among the series in the model.

Tan et al. (2007) tested for financial - led, exported and import - led growth hypotheses on four Asian emerging economies (Singapore, South Korea, Taiwan and Thailand) for the period 1958-1997. The econometric estimation was based on VECM.

The results on the cointegration test based on Johansen (1988) and Juselius (1990) cointegration approach. The results indicated that there exists cointegration among the series. These indicate that there is statistical significant long run relationship among the variables.

The results on causality test revealed different results for the different countries. It was revealed that financial development leads to economic growth in Singapore through the channel of investment and export, in the short run analysis. In support of the study by Tan et al. (2007) is the analysis of the various channels through which financial deepening affect economic growth and the analysis on the unit root test as well as the causality test which are necessary for expanded analysis and policies discussions. It also helps avoid spurious regression and biasness of results.

Rahman (2007) examined the causality link between economic growth and financial development for Bangladesh for the period 1976-2005. The results indicated that the series were cointegrated. It was also revealed based on the response matrix that there is significant effect of financial development on economy growth in the long run through investment. It was again established that economic growth increase at 0.6% with a 1% increase in financial development.

In the short run also, financial development affect economic growth positively as evident by the impulse response functions.

Rahman (2007) study follows standard economic estimation procedure such as unit root test for time series data; cointegration analysis and also including control variables in the models to avoid biasness. But the estimated model did not include variables from the stock market which is also part of the financial system and part of financial development.

### 3. Summary of Review Findings

Base on the review these findings are provided:

- ❖ Some studies established positive statistical significant long run effect of financial development on economic growth. This means if the financial sector develops the economies of these countries will also develop.

- ❖ Other researchers have identified Statistical Significant Unidirectional causality from financial development to economic growth. This indicates that finance cause economic growth. To achieve economic growth the financial sector should be developed.
- ❖ Unidirectional causality from Economic growth to financial development has also been identified in some studies. Economic growth causes financial development. This means, if the economy grows it results in development of the financial sector of an economy. The financial sector depends on economic growth.
- ❖ There is also bidirectional causality between financial development and economic growth in some economies. This is an indication that economic growth also cause financial development while as financial development causes economic growth. This is a feedback relationship.
- ❖ There is negative effect of financial development on economic growth in some economies. This means, the financial sector is a liability to economic growth and it does not promote growth but rather impede growth in those economies.
- ❖ Lastly, there is no statistical significant effect between finance and economic growth in some economies. This means the financial sector does not matter for the growth of these economies.

#### 4. Conclusion and Policy implications

There has been many empirical works on the effect of finance on economic growth for developed and the developing economies using different models and various data for various periods. Yet the results have been mixed. In some studies the results have revealed significant short and long run significant effects while in other studies there has been no significant effect and even a negative effect.

The results on causality direction have also been mixed. In some studies there has been feedback effect while in some other studies the results have been unidirectional and neutral effect. Further studies are worth doing using recent multiple models involving more countries at different developmental stages and a large sample size. Policy decisions must be based on empirical study using data from an economy that wants to take decisions on financial sector and economic growth.

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