The Impact of Private Sector Performance on Economic Growth in Senegal

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Economics

Eastern Mediterranean University
July 2023
Gazimağusa, North Cyprus

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ABSTRACT

Using a time series approach, this thesis investigates the impact of private sector performance on economic growth using Senegal as a case study for a period of 1981 - 2020. Johansen co-integration method reveals the existence of a long run relationship in the variables. The error correction model shows the coefficient of the error correction period, The Error Correction Model (ECM) result indicated that about 4.9% of the disequilibrium inaccuracies accumulated in the earlier period have been corrected in the current period. The estimated long run coefficient implies that domestic credit to the private sector had a statically significant positive effect on economic growth.

Keywords: Private Sector Performance, Economic Growth, Time Series Analysis, Johansen Co-integration

ÖZ

Bu tez, bir zaman serisi yaklaşımı kullanarak, özel sektör performansının ekonomik büyüme üzerindeki etkisini, Senegal'i 1981 - 2020 dönemi için bir vaka çalışması olarak kullanarak araştırmaktadır. Johansen eşbütünleşme yöntemi, değişkenlerde uzun dönemli bir ilişkinin varlığını ortaya koymaktadır. Hata düzeltme modeli, hata düzeltme periyodunun katsayısını gösterir, Hata Düzeltme Modeli (ECM) sonucu, önceki dönemde birikmiş olan dengesizlik yanlışlıklarının yaklaşık %4,9'unun cari dönemde düzeltildiğini göstermiştir. Tahmin edilen uzun dönem katsayısı, özel sektöre verilen yurt içi kredilerin ekonomik büyüme üzerinde statik olarak anlamlı bir pozitif etkiye sahip olduğunu ima etmektedir.

Anahtar Kelimeler: Özel Sektör Performansı, Ekonomik Büyüme, Zaman Serisi Analizi, Johansen Eş bütünleşme

DEDICATION

This research work is dedicated to God Almighty, the Supreme Being and giver of all knowledge and understanding for His abundant grace, mercy and loving kindness.

ACKNOWLEDGEMENT

My gratitude goes first to God almighty, the maker and giver of life, whom through his kindness, helped me to successfully complete this research work.

My deepest appreciation goes to my Supervisor Prof. Dr Hasan for his timely correction and exposure far beyond my understanding throughout the course of this research work. May the lord God almighty reward you far beyond imagination and perfect his good works in your life and your family.

I want to express my unreserved gratitude to my beautiful family and friends for their support and encouragement

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INTRODUCTION

1.1 Background to Study

Economic growth is the enhancement in the ability to meet and fulfill the demand for goods and services with expansion in creation and productivity rate, with product and process efficiency which is assessed over a period. All in all, it is the estimation of yearly rate of expansion in real Gross domestic product over a specific timeframe.

The connection and link between economic growth and the private sector has been at the focal point of investigational discussions for a long time. The discussions became more apparent with the studies of King and Levine (1993) who determined the private sector stimulates economic growth while examining data from 77 countries.

Adedakun (2011) explains how the private sector including small and medium scale enterprises, large scale industries, commercial banks etc. are expected to assume fundamental and powerful roles in supporting their monetary ventures and exercises as their commitment in guaranteeing sustainable economic growth. Discussions about the significance of credit improvement and the part that the private sector plays in economic growth have been critical in issues of national economic development.

Many empirical studies in developed countries establish a connection exists connecting economic growth and the performance of the private sector of countries.

Deidda and Fattouh (2002) examining similar data affirms there exists a positive and relevant connection between the private sector and economic growth for high income nations while no critical or significant relationship exists for low-income nations. Indeed, we can say the relationship that exists between the performance of private sector and the economic growth in developed nations is broader when compared to developing countries.

The private sector has been critical to Senegal's economic growth and distribution of income. Since independence, Senegal has been defined by many industrialization strategies which includes the import substitution in 1960. This strategy was aimed at promoting the expansion and emergence of domestic businesses and industries. Senegal economy has been mainly driven by construction, manufacturing, fishery, tourism and agriculture, which are mainly controlled by the private sector and are the main sources of employment to people in rural areas and semi developed regions of Senegal. The country's main exports comprise solely of fertilizers, agricultural products, phosphate and commercial fishes which are provided mostly by the private sector.

Studies on the performance of private sectors and economic growth in developing countries according to Szirmai (2012) have been scanty and show the relationship has an insignificant one compared to studies in developed countries which have been more and the results have been a relationship that's positive and significant.

Although the studies relating to the position financial development has played on economic growth has expanded in present times, research that investigates the private sector performance and how it influences on the economic growth of Senegal have

been dominated by a rise in the amounts of studies that mainly center on financial and economic development and growth.

The private sector. including small, medium and large-scale industries and enterprises and commercial banks are expected to play key dynamic and effective roles in the development of the economy, economic schemes and activities, as their contribution in ensuring economic growth that is sustainable. There have been several discussions about the role private sector and credit development plays in economic growth which in turn shows private sector performance has a part to play in the economic growth of any nation.

Based on the above stated, we can see there is still a research gap which would cover the empirical assessment of the effect the performance of the private sector has on economic growth using more direct and clear independent variables.

The aim of this paper is to evaluate the accessible and relevant works and empirical data around the predominant theories on the causal relationships between notable measures of economic growth and the private sector performance, and then analyze the results of this investigation.

1.2 Brief Overview of Senegal

Senegal is a country in west Africa, with French as its official language, as it was formed as part of the French Western African independence countries from French colonial rule. Senegal is amongst the least developed countries in the world. The country's per capita GDP has deteriorated over the last four decades. Since its independence in 1960 to the 1970s Senegal pursued an inward development strategy. There was a noticeable yearly growth from 1974 to 1977, with a decline between 1978

to 1984, the country had experience successive droughts, which had adverse effects on the Economy. (Douglas 2003) explains how the Senegalese economy was getting worse due to the unsuitable policies and terms of trade which had been undertaken by the Senegalese Government which has led to decline and inconsistency in the yearly GDP growth rate.

To aid the private sector development the Senegalese authorities introduced external trade, liberalized prices and labor legislation. (Binet, T, Failler, P. & Thorpe 2012) explained how since independence, Senegal has consecutively defined numerous industrial expansion strategies so as to give importance to the industrial and private sector and to stimulate economic growth and reallocation of national income. Senegal adopted the import substitution in 1960, immediately after its independence heading towards an industrialized state. This strategy was to promote the creation growth and emergence of domestic businesses, enterprises and industries. Senegal has had a spread of several polices aimed at industrial development. These polices which can be traced to the independence period, the industrial polices before 1986, the new industrial polices in 1986 and the industrial redeployment policy (PRI) in 2004.

With the dawn of independence, Senegal has pursued several industrial strategies and policies. From 1960 to 1969, Senegal had focused on capital and industrial development and expansion using the import substitution policy, which aimed at developing more large-scale industries and businesses. While from 1969 to 1973, the senegalese government saw the need to aid development of the small and medium scale businesses and enterprises in a bid to aid development of the private sector. In 1974 the Dakar industrial free zone was created to aid job creation. Between the year and 2004, Senegal followed an industrial redeployment strategy which served as an

improvement on previous industrial policies the aim was to increase competitiveness and efficiency among industries thus economical development in general. Since 2007, Senegal has adopted more industrial policies to aid cooperation, growth and unity among industries and businesses in Senegal. Senegal has notably been known to encourage domestic industrial growth has this has really helped in their Economic development and growth (Ndiaya & Lv 2018).

Senegal has had a relative comparative advantage between 1995-2015 over countries like Tanzania, Cambodia, Lao, Vietnam and Cape Verde due to the productivity of the manufacturing industries including manufactured goods and chemical industries. Also, Senegal keeps on growing in the apparel, clothing and footwear business. Due to the advantages Senegal has held in the manufacturing and clothing industries and businesses, more efforts have been diverted to growing private businesses in this regard, therefore aligning the economic situation with advantageous areas and encourage success of private businesses (Sejkora & Sankot 2017).

1.3 Research Question

This research work/study is carried out based on the following research questions below;

i. What is the impact of private sector consumption expenditure on economic growth in Senegal?

ii. To what extent does the private sector investment contributes to economic growth of Senegal?

1.4 Objective of Studies

The main aim of this research is to assess the impact of private sector performance on Senegal's economic growth. To achieve this, the paper will through empirical

observation, investigate the associations between foreign direct investment, Domestic Private Investment, Domestic credit to private sector, Inflation and GDP over the entire time series selected to illustrate the trend of private sector performance over time and provide references and recommendations founded on the research findings.

Another research aims that will be examined include:

1. To understand Senegal's economic development in connection to private sector performance

2. To see if there is a link connecting private sector performance and economic growth.

3. To investigate how private sector performance impacts economic growth.

1.5 Research Hypothesis

H0: there is no evident relationship between Private sector performance and economic growth in Senegal.

H1: There is evident relationship between private sector performance and economic growth in Senegal.

1.6 Significance of the Study

This study will be of great benefit to both the small and medium scale enterprises and financial institutions in Senegal, as well as policy makers who aspire to place Senegal on a comprehensive economic and industrial basis. The conclusion of this study would contribute to the knowledge of the private sector which is needed to better understand the economic growth process of Senegal.

Additionally, this study would be an incentive for youths to be gainfully employed which is one of the aims of the national education policy. This study will motivate the youthful passion and their involvement in the establishment and creation of small and medium scale enterprises in Senegal.

Finally, this study would serve as a guide and provide awareness and understanding for future studies on this topic and related fields of study.

1.7 Scope of the Study

This study covers the period of 1981 – 2020. This study is designed to cover a period of 39 years because it is sufficient enough for rational econometric analysis and better apprehension of the private sector performance on economic growth. Thus, this study is therefore limited to capture the impact of private sector performance on economic growth in Senegal.

1.8 Limitation of the Study

The constraints faced in the course of this study includes difficulty in searching for relevant articles, data and journals. These limitations however are not sufficient to undermine the reliability of the information provided as the study anticipated such challenges and took steps to minimalize the effect of such disturbances on the validity of the study.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter explores numerous studies relating to various models, theories, concepts, and expressions used by various scholars relating to the purpose of the study.

2.2 Conceptual Framework

2.2.1 Concept of Private Sector/Privatization

Private sector which is the privately owned sector or segment of the economy or the free-market economy consisting of all economic institutions, businesses, companies, industries and organizations that are independent of Government control and management. This sector of the economy is being controlled and managed by private individuals Boubakri, Smaoui & Zammiti (2009).

A functioning private sector usually has these features Ottlewski & Gollnhofer (2019). They include:

(a) Private Business Proprietorship

For personal enterprises, businesses are managed and owned by individuals, groups of individuals or groups other than by the society or government or as a whole. The administrators of a business have some rights which includes: rights for the business to function with the slightest of external interference, rights to maintain control over a large percentage of business generated profits,

rights to contend at liberty with other dealings for clients, new manufacturing methods. raw materials, new products, personnel etc.

(b) Freedom of Choice

workers and managers have freedom to determine and select occupations, bargain wages and salaries, change job and other benefits. Consumers have freedom for goods selection with minimum social or Governmental pressure.

(c) Exclusive Property

This gives the right to individuals or groups of individuals to control and possess and control physical assets and wealth as well as personal properties. The right to personal property is justifiable on pragmatic and ethical grounds.

(d) Reduced Government Participation

In the free market economy, the participation and involvement of the government is the economic capacity is reduced but not completely overlooked. Roles of the Government such as the judicial administration, safeguarding rights and freedom of citizens work to establish a functioning market system.

(e) Profit Drive

In the private sector the driving force for efficient allocation of resources is profit making. Profit signifies the difference between the amount a business pays to produce and market product and services and the amount they are sold.

2.2.2 Privatization

Privatization is the transformation of businesses, industries and enterprises from government owned to private assets. It can also be allowing the private sector to provide services what have been previously viewed as government services Boubakri, Smaoui & Zammiti (2009).

Privatization can affect rendering of service in two ways either it leads improvement in product and service rendered or it leads to worsening of product and service provided. Privatization can lead to product and service quality and efficiency if the government is unable to properly manage such product and services which might be due political bias and benefits. While privatization can be disadvantageous if the private industries and companies decide to use the given monopoly to their advantage and sell product and services at high prices. Jammal & Jones (2006) determined privatization in Senegal in regards to Senegal water had brought reform and development to the water sector with immense improvement in regulatory principles and increased incentives for performance which led to efficiency and success in the privatization process.

2.2.3 Economic Growth as a Concept

Economic growth which is mainly calculated with the gross domestic product (GDP) can be explained as an increase and growth in a nation's output. According to Mathilde Maurell and Majda Seghir, (2014), the benefits of Economic growth are many and cannot be undermined. Economic growth is measured by the quality and quantity of goods and services manufactured in a Nation.

One of the main aims of economic growth is improvement in the living standards and welfare of citizens for which Mansour (2008) also affirms that the expansion of the Senegal economy with the intent to improving the wellbeing of citizens is a desirable objective which is a supplementary explanation for why studies on economies are filled with studies and theories which examine variables needed by economies to achieve viable economic growth.

Economic growth according to Balami (2006) is often seen as the increase in the capacity or strength of a nation to produce goods, products and services with technological and innovation which in turn helps and aids the welfare of citizens of a country. Growth is seen as a continuous process of expansion in the level of production of goods and services

2.2.4 Private Sector and Economic growth

The private sector has always played a key role in the growth of developed and developing economies including the Senegalese economy. Current world economic situations have reinforced the place of the private sector in fast-tracking the growth process in a continuous mode.

The growth of the private sector could be encouraged in the following ways which include establishment of new companies' development and extension of existing businesses, adequate attention to human capital development and through the process of rapid privatization (Barney 1997).

Another way of improving private sector participation while reducing government participation to cover only enabling a conducive environment is the use of market-oriented growth strategies.

According to the neo-liberal economic believe, privatization is significant to economic growth as it is an important element when viewing durable, continuous and successful economic transition and growth of a nation

For many transitioning and developing economies, rural private sector expansion and gradual privatization has been a key and strong factor in successive and swift

development of the private sector. Trade openness encompassing free entry and exit from business have been great support to the private sector contributions to economic growth. Favorable policies have also been an important factor to the creation and expansion of private sector economic activities, these policies such as monetary and fiscal polies are tools for driving economic growth.

According to Iwara (2007) apart from expansion and extension of the production capacity of an economy, the private sector is needed for increase in employment opportunities and improvement in quality and standard of living of citizens in general which could be carried out in the following ways:

i) Diversification of the economy with a modernized agricultural and export-based manufacturing sector would lead to steady and rapid sustainable economic growth, the country should provide services with which the country has comparative advantage.

ii) Continuously working towards the expansion and development of the export base, making internationally accepted by raising product and service standards

iii) Improvement in the economic structure by providing support for research, studies and development which can considerably increase and satisfy demands for domestic production and consumption.

Policies play a significant role in economic growth, which is why several policies and programs are usually embarked on by governments to aid increased private sector performance in the economy. Some of such policies include the creation of institutions that support private sector performance and reforms in relevant industrial policies.

Due to the essential and key roles the private sector plays in the economy, the government usually implements policies, programs and projects that can help in aiding and facilitating a conducive and welcoming atmosphere for the participation of the private sector.

Industrial reforms and policies with a good and pertinent lawmaking for free market strategies and programs are ways the government works to encourage participation of the private sector.

2.3 Theoretical Framework

There have been several growth models and theories in literature but there has not been any general agreement on which is the best or which will achieve the best result.

Achieving constant and consistent growth requires the population to be learned and have certain level of skills Nnanna (2004). Some of the known growth models include: Schumpeterian Theory, Marxian Theory, Two-gap Model, Neo-Classical Model of Growth, Harrod-Domar Theory of growth, and Endogenous Growth Theory.

For this study the endogenous growth theory and Neo-classical Growth model would be reviewed as they are most pertinent to this study as they better explain peculiar situations to economies that are developing.

2.3.1 Endogenous Growth Theory

The endogenous growth theory is also called the new growth model which was developed and improved on in the 1980s by Paul Romer in 1986, Rober Lucas in 1988 and Sergio Rebelo in 1991 amongst other economists as a reaction to the neo classists growth model theorists.

According to Jhingan (2006) the endogenous growth theory highlights that the size of capital stock, stock of labor capital and state of savings and investment result in technical progress. The theory explains how the long run economic growth can be impacted by policy measures. In the long run the growth model is determined by variables inside the model which is why it is endogenous and not exogenous like in the neo classical growth model. Beck (2000) explained how the amassing of knowledge was also needed for growth and was a key factor to a growing economy. The industries which aid amassing of knowledge include software and electronics industries, biotechnological and technological industries, telecommunication industries etc. are needed for the growth of economies especially developing economies. Endogenous growth theorists believe with an improvement in the rate and speed of innovation and human capital investment the level of productivity would rise. They believe there should be private sector and Government interventions which would aid innovation and cause citizens and businesses to be more innovative Knight et al, (1993).

There are benefits to the development of a highly knowledgeable economy and society, this helps an economy have competitive advantage and an upper hand among fast paced growing industries and economies Tarlok (2009).

Nnanna, Englama, and Odoko (2004) explained that a financial institution can influence the growth of economies by functioning effectively and efficiently, through effective capital formation performance and credit provision. Also, a lot of inventions and improvements arise from the research and development carried out profit driven companies and industries.

2.3.2 Neoclassical Model of Growth

The Neoclassical growth model was introduced by Robert Solow and Trevor Swan in 1956. According to Shaw (1992), the model believes a continuous increase in capital investment alone can only sustain economic growth for a limited period, because the more capital there is than available labor the more marginal product for extra units starts to reduce and therefore the economy reverts to a long-term growth with Gross domestic product increasing with the labor force and also an economic factor to capture improved productivity.

The Neoclassical growth models how three economic factors: capital, labor and technology aid the steady growth of an economy. The three economic factors have to be balanced in the right and required proportion for each country's economic growth. Ray (1998) explains how the quantities of capital, labor and technology have to be mixed in the right quantities and manner so economic equilibrium can be achieved. With the introduction of technology that is new there has to be an adjustment to the quantities of labor and capital so economic equilibrium can be maintained. An equilibrium and constant state of growth is achievable when capital, labor and output are all developing at a similar pace, therefore capital and output per worker would be constant.

To improve an economy's long-term growth an increase supply of capital and labor is needed with an increase in productivity. The differences in the growth rate of several countries van be attributed to the differences in their rate of technological changes. Geoff Riley (2006) explains how the Neoclassical growth model sees productivity advancement as exogenous which means productivity advancement is not dependent on capital investment.

2.4 Empirical Review of the Relationship and Determinant

There have been several studies examining the area of the private sector and economic growth which have observed several ways empirically and theoretically in which the private sector affects and impact economic growth.

Rousseau and Watchel (1998) accessed the relationship between the private sector and economic growth in five countries; United States, the United Kingdom, Canada, Norway, and Sweden that underwent rapid industrialization over the 1870 and 1929 period, using the Vector error correction model (VECM) and granger causality test was able to ascertain that the private sector had an impact on real output, particularly before the great depression.

Rousseau and sylla (2001) cross examined 17 nations between 1850-1997 and also found evidence of private sector investment being relevant in a nation's economic growth as it provides income and job opportunities for citizens.

Jalil and Ma (2008) Further argued that many results relating to private sector and economic growth are unreliable due to the short time span of available data used for analysis.

Allessandra (2010) further argued the fact that many times series studies yield unreliable results due to the short time spans of typical data sets cannot be ignored. The study examined Pakistan and china and deemed private sector performance relevant but had not been able to be analyzed previously due to insufficient data. It was due to this that Christopoulos, D.K and Tsionas (2004) analyzed 10 emerging economies and decided to go with a panel framework which increases the sample size.

Using panel co-integration and panel unit root tests, the results showed a unique single co-integration vector, which meant there was a connection between the private sector and economic growth. The work broadened the knowledge on private sector and economic growth connection and explained how the private sector spurred economic growth.

Bayraktar (2015) examined the links between private sector investment and economic performance of OIC member states. This study highlights the relevance of private investment in OIC member states, as private investment had also been higher than public investment in these countries. Foreign direct investment was a key factor to Gross domestic product and Economic growth of these member states.

After accessing the impact, the indicators of macroeconomic reform policies had on private investment, Bwonde (2016) came to the conclusion that private investment and the private sector in general was affected by the real interest rate, private sector credit, real exchange rate, investment ratio, foreign exchange reserves and economic growth positively while the effects of external debt and public investment had a negative impact.

Chapter 3

RESEARCH METHODOLOGY, RESULTS AND DISCUSSION

3.1 Introduction

This chapter of the study explains the research methodology employed, including the method of statistical data collection, data analysis technique, sampling technique, sample size and model specification and summary.

3.2 Method of Data Collection and Sources

Data collected was mainly from secondary source annual time series data. Sourced data were from the world bank development indicators.

3.3 Data Series

• Real GDP per capita (LNGDP)

• Domestic credit to private sector by banks – (DCPS)

• Foreign direct investment, net inflows - (FDI)

• Inflation, GDP deflator – (INF)

• Gross fixed capital formation, private sector proxy for Domestic Private Investment (DPI)

3.4 Sample Size

For this study, the sample size encompasses of 39 observations from the period of 1981-2020.

3.5 Sampling Technique

In other to attain a more accurate result, the simple random sampling technique was adopted as it is free of bias.

3.6 Technique of Data Analysis

This study engages the multiple regression analysis with ARDL econometric method of data analysis, which is the Autoregressive distributed lag approach. In this study, using the multiple regression analysis with ARDL statistical technique for data review enables us to statistically ascertain whether an important connection exists between the dependent variable (LNGDP) and the independent variables (DCPS, FDI, INF, DPI) in the Senegalese economy within a period 1981-2020. Also, the numerical values of the model parameters are estimated via the Autoregressive distributed lag (ARDL) technique facilitated by E-Views application; a statistical software or package for empirical econometric analysis.

3.7 Model Specification

Model specification involves the determination of dependent and independent variables. At this stage, it is imperative to specify the model to be used in the regression. The specification of the model will be based on the information relating to the phenomenon being studied.

The functional form of the model is stated as follows:

LNGDP= f (FDI, INF, DPI, DSPC,) . . . (3.1)

Where:

LNGDP = Economic growth proxy by Real Gross Domestic Product

FDI = Foreign Direct Investment

INF = Inflation

DPI = Domestic Private Investment proxy by Gross Fixed Capital Formation

DCPS= Domestic credit to private sector

However, specifying equation (3.1) in econometric form results to equation (3.2) as follows:

$LNGDP = \beta 0 + \beta 1 FDI + \beta 2 INF + \beta 3 DPI + \beta 4 DCPS + ut$

Where all the variables remained as defined above.

ut = The stochastic/error term

β0, β1, β2, β3 and β4 are estimation parameters of the respective variables in the model.

A priori expectation for the model variables are:

β0 >0, β1 >0, β2 < 0, β3>0 and β4>0

β1>0: This implies that there is a positive connection between foreign Direct Investment and economic growth.

β2<0: This demonstrates that there exists Negative relation between Inflation and economic growth.

β3 >0: This shows that there exists positive association between private domestic investment and economic growth.

B4 >0: This demonstrates that there is a positive correlation between Domestic credit to private sector and economic growth.

3.8 Data Presentations

The study employed secondary data sourced from World bank development index. The data is presented in tabular form with economic growth proxy by real gross domestic

product (LNGDP) as the dependent variable; while foreign domestic investment (FDI), Inflation (INF), domestic private Investment proxy by Gross fixed capital formation, private sector (DPI), and private sector consumption expenditure (PSCE) as independent variables to analyze private sector performance. The model was estimated using the econometric technique of Autoregressive distributed lag (**ARDL**)

Table 1: Summary Statistics

	LNGDP	DOMESTIC_CREDIT_TO_PRIVATE_SECTOR	FDI	INFLATION	GROSS_FIXED_CAPITAL_FORMATION
Mean	1.08E+10	20.54988	1.469550	3.543504	13.96142
Median	7.37E+09	20.59085	1.328336	1.977829	13.69985
Maximum	2.45E+10	29.62276	7.535426	34.04137	23.31644
Minimum	3.49E+09	11.23711	-0.971944	-1.735954	7.965139
Std. Dev.	6.43E+09	6.268729	1.520066	6.028420	3.494093
Skewness	0.712715	-0.084811	1.646682	3.289722	0.837870
Kurtosis	2.084536	1.664304	7.519101	17.03709	3.814107

Jarque-Bera	4.902789	3.096960	53.41705	410.5620	5.929412
Sum	4.41E+11	842.5452	60.25155	145.2836	572.4182
Sum Sq. Dev.	1.65E+21	1571.879	92.42405	1453.674	488.3475
Observations	41	41	41	41	41

As noted in Table 3.8, the sample size comprises of 41 observations from the period of 1980 to 2020. This table shows the statistical summary including the mean values. It is observed from the table that FDI had the smallest standard deviation of 1.520066 while LNGDP has the most standard deviation of 6.43. The skewness statistics which reveal the extent of asymmetry, or disequilibrium from symmetry showed that all variables were positively skewed except for domestic credit to private sector. Finally, the kurtosis measures the highness or flatness of the data in comparison to the normal spread. The coefficient of the kurtosis of the variable indicates that FDI, INF and DPI are peaked (leptokurtic) with values greater than 3.0. But LNGDP and DCPS are flat (mesokurtic) with values less than 3.00. The Jarque-bera (JB) test estimates the contrast of the skewness and kurtosis of the series compared to the normal distribution.

3.9 Estimation of Results and Discussion

The primary point of the analysis matter was to perform the unit root test by means of the ADF test. Every time a non-stationary time series is regressed on one more the

outcome is always a spurious. A contrived regression defines a condition where no linear association really exists among a dependent variable and an independent or independent variables with high values of R-squares or adjusted R-squares and some statistical relevant t-ratios. Therefore, the Augmented Dickey-Fuller Unit root test is performed to avoid the estimated regression result being false or spurious.

Table 2: Augmented Dickey-Fuller Unit Root Test Results

Variables	Levels	First Difference	Lag(s)	Model	Order of Integration
LNGDP	1.278146(0.9981)	5.952845(0.0000)	2	Trend and drift	1(1)
DCPS	0.819927(0.8025)	5.268026(0.0001)	2	Trend and drift	1(1)
FDI	1.481898(0.990)	8.602368(0.0000)	2	Trend and drift	1(1)
INF	5.102463(0.0001)	9.102131(0.0000)	2	Trend and drift	1(0)
DPI	1.229867(0.6521)	6.831676(0.0000)	2	Trend and drift	1(1)

The Augmented Dickey Fuller (ADF) unit root test result in table 3.8, shows that all the variables except Inflation (INF) are stationery at first difference but are all stationery at five (5) percent level of significance. This agrees with the fact that most macroeconomic variables are not stationary at level but became stationary at their first difference. Having confirmed that all the variables are not stationary at first difference,

therefore need for ARDL regression analysis. Also, it is important that the data sequence are tested to ascertain whether there is a long-run relationship among the variables under study. In this study, the ARDL Bounds test is employed to ascertain whether there exists a long run relationship between the variables.

Table 3: Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	5 .631146	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample:	
Actual Sample Size	39		n=40	
		10%	2.427	3.395
		5%	2.893	4
		1%	3.967	5.455
			Finite Sample:	
			n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532

The result of the Bounds Test in table 3 shows the F statistic value at 5..631146 is greater than the I(0) and I(1) bound and this reveals that the variables are co-integrated. That is, there is a long-run correlation among the variables analyzed in this model. Having confirmed the fact that variables are co-integrated, we proceed to estimate the Over-parameterized ECM results from where a parsimonious error correction result will be obtained.

The over-Parametrized error correction model of the study is presented and accounted for problems with model misspecification as a step to achieving a favorable and parsimonious model. The expression includes the ECM term lag one period, symbolizing the previous value of the error correction component whose coefficient should be statistically relevant and negative, to reinforce the presence of co-integration.

Table 4: Error Correction Analysis

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INFLATION)	-0.004859	0.002305	-2.108100	0.0432
D(INFLATION(-1))	-0.007236	0.002378	-3.042407	0.0047
CointEq(-1)*	-0.011761	0.003489	-3.371261	0.0002
R-squared	0.412203	Mean dependent var		0.045857
Adjusted R-squared	0.379548	S.D. dependent var		0.122037
S.E. of regression	0.096127	Akaike info criterion		1.772484
Sum squared resid	0.332656	Schwarz criterion		1.644518
Log likelihood	37.56344	Hannan-Quinn criter.		1.726571
Durbin-Watson stat	1.757675			

The Error Correction Model (ECM) results in table 3.10 shows that about 11% of the imbalance and instability errors accrued in the earlier period have been amended in the present period. The ECM explains how fast the model balances to stability and equilibrium while indicating that there is a relevant adjustment or level of convergence

at -0.011761 which we can consider highly significant due to t-statistic value of -3.371261.

The (-1) ECM coefficient complies with statistical expectations as the sign is negative and it is statistically relevant, hence giving grounds for ECM use in this study.

Table 5: Regression Analysis (ARDL)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNGDP(-1)	0.988239	0.052054	18.98478	0.0000
INFLATION	-0.004859	0.002917	-1.665740	0.1058
INFLATION(-1)	-0.009777	0.003081	-3.173320	0.0034
INFLATION(-2)	0.007236	0.003014	2.400468	0.0226
FDI	0.007302	0.020472	0.356664	0.7238
GROSS_FIXED_CAPITAL_FORMATION	0.004103	0.009522	0.430843	0.6696
DOMESTIC_CREDIT_TO_PRIVATE_SECTOR	0.000551	0.003359	0.164173	0.8707
C	0.396103	1.143801	0.346304	0.7315

R-squared	0.974428	Mean dependent var	22.96407
Adjusted R-squared	0.968654	S.D. dependent var	0.585091
S.E. of regression	0.103590	Akaike info criterion	1.516074
Sum squared resid	0.332656	Schwarz criterion	1.174831
Log likelihood	37.56344	Hannan-Quinn criter.	1.393639
F-statistic	168.7519	Durbin-Watson stat	2.057656
Prob(F-statistic)	0.000000		

The statistical outcome shows that for Domestic credit to private sector impacts positively on economic growth (LNGDP) in Senegal with a coefficient of 0.000551 which implies that a unit change in Domestic credit to private sector when all variables are constant, it would lead to an increase in LNGDP by 0.00051 Dollar. This implies that domestic credit to private sector is statistically significant and positively impacts economic growth. Thus, we reject the null hypothesis which states that private sector

performance has no significant impact on economic growth in Senegal and accept the alternate.

Foreign direct investment with a coefficient of 0.007302 shows that a unit change in foreign direct investment when all variables are constant, it would lead to an increase in LNGDP by 0.007302 Dollar. This implies that foreign direct investment has a positive effect in relation to economic growth in Senegal which conforms to priori expectation.

Analyzing the relationship between Gross fixed capital formation and economic growth in Senegal; the result showed that a unit change in Gross fixed capital formation will lead to an increase in LNGDP by 0.004103 Dollar. This implies Gross fixed capital formation has a positive relevant impact on economic growth in Senegal.

Inflation with a coefficient of -0.004859 shows that a unit change in inflation when all variables are held constant will lead to a decrease in economic growth by 0.004859 Dollar.

The adjusted R-squared value of 0.974428 shows that about 98% of the changes in economic growth are jointly explained by foreign direct investment, domestic credit to private sector, Gross fixed capital formation and inflation while the high R-squared value shows that the model has a good fit. The Prob (F-statistic) value of 0.000000 at 5 percent level of significance shows that the entirety of the model is statistically relevant. The Durbin-Watson statistic of 2.057656 value shows there is no autocorrelation error.

Chapter 4

SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1 Summary

The study deliberates on the impact of private sector performance on economic growth in Senegal from the period of 1981 to 2020. To accomplish this, a model was formulated which correlated to private sector performance represented by Foreign domestic investment, Domestic Private investment, private sector consumption expenditure and Inflation as the explanatory variables and economic growth proxy by Real Gross Domestic Product (LNGDP). Findings arising from the study hold that private sector performance has a significant positive impact on the Senegalese economy for the period under review specifically, the findings include:

a) Foreign Direct investment exhibited a positive and statistically significant influence on economic growth (LNGDP) in Senegal. This confirms that amplified foreign direct investment will result in a higher economic growth.

b) Domestic private investment proxy by gross fixed capital formation as expected with the a priori expectation has a positive sign and significant at the 5% level of significance. This enlightens that higher domestic private investment will lead to increased economic growth.

c) Domestic credit to the private sector showed a positive impact on economic growth (LNGDP) in Senegal. This shows that increased Private sector consumption expenditure will lead to higher economic growth and vice-versa.

d) Inflation showed a negative and statistically significant impact on economic growth in Senegal. This confirms that increased inflation will result in decreased economic growth.

4.2 Conclusion

The study observed the impact of private sector performance on economic growth in Senegal between 1981 and 2020. The study employs the Augmented Dickey-Fuller test to circumvent unit root issues that are commonly associated with time sequence data; also, the Johansen co-integration rank test was done out to examine if there is a long run connection between the dependent variables and independent variables. The result exhibited that there is a long run association amongst the variables in the model. Empirical findings from the study infer that strengthening, solidification and improvement of the private sector would help increase economic growth. The ECM result shows that about 4.9% of any disequilibrium between the short-run and long-run private sector is covered within a year.

4.3 Recommendations

Based on the empirical findings of the study, the following suggestions are proposed or the purpose of efficient and effective policy designs and creation in the capacity of private sector performance and Senegalese economy.

I. Efforts and policies should be channeled to growth in foreign direct investment. In order to further advance and expand the environment for foreign direct investment in Senegal, the government should recognize the fact that, the rudimentary component for any growth and expansion strategy should be to boost domestic investment first before going after foreign investors, seeing they constitute the majority of investment activities in the economy.

2. This study recommends that practical steps to entice more domestic private investment should be embarked on by the Senegalese government as one of the methods of enhancing the Senegalese economy. In order to grow levels of domestic private investments, the government should intensify investment on human capital formation and infrastructure development through education. Supplementary funds should be directed to development expenditure.

3. Encouraging savings and investment mechanisms would enhance the private sector performance and in turn motivate economic growth.

4. Government can assist the private sector on the issue of credit obtainability which will go a long way in enhancing private sector in Senegal. Also, there is a need to improve competence of public investment and strict actions should be taken against public establishments and institutions which misappropriate funds and allocations.

5. Policies should be taken in the direction of limiting, reducing, and preventing inflation in the economy as this would affect private sector performance and economic growth in general.

6. Continuous cooperation between the government and the machinists of private sector associations and organizations are needed by offering sufficient incentives and the required empowering atmosphere to encourage and boost the growth of the private sector in Senegal.

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