IMPACT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH IN MALI (1985-2015)

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ABSTRACT

Different researchers have different views on the exact contribution of foreign direct investment in the discourse on economic growth in several developing countries. Supporters believe that Foreign Direct Investment increases domestic capital and improves productivity and growth by filling economies; foreign currency; performance and management gaps, cross-border credit and risk swaps, technology and skills transfer, job creation. Opponents also believe that Foreign Direct Investment exposes domestic markets to external volatility, the increase in dependence and the transformation of domestic savings can bring macroeconomic stability. The Government of Mali attaches great importance to the contribution of Foreign Direct Investment to economic growth, as evidenced by the many deliberate actions taken to exploit Foreign Direct Investment flows into the economy, including legislation and trade incentives. However, previous studies of the real contribution of FDI to economic growth or the conditions under which FDI stimulates economic growth have produced mixed results. Given the level of importance attributed to FDI related to economic growth in Mali, this study investigates the effect of foreign direct investment on the growth of the Malian economy using data on FDI inflows and GDP from 1985 to 2015. In order to achieve our main objective, we have developed the function Cobb Douglass production and regression of ordinary least squares. In the regression calculations we had to use such as gross domestic product (GDP) is represented as the dependent variable while foreign direct investment (FDI), public expenditure (GE), and human capital (HC) are the independent variables, to evaluate the impact of FDI on economic growth in Mali. The results show that when FDI inflow increase by 1% ,that will increase GDP by 0.061%, all things being equivalent, however it is statistically very significant at 5% of 0.000%, this means that when the government of Mali attracts more investors that will likely increase economic growth. The main conclusion is that 0.061% of the evolution of the economic growth in Mali during the period is due of the foreign direct investments. In itself, FDI is significant to influence economic growth in Mali, but must interact with infrastructure development and the openness of the economy to
produce the desired impact on economic growth. Therefore, for the economy to achieve its medium- and long-term goals, whose success depends on FDI inflows, these conditions must be exploited or explored.

**Keyword:** Gross Domestic Product, Foreign Direct Investment, MALI

**Introduction**

Developing countries, regardless of their geographical locations, exhibit some common characteristics including: low living standards; lowest level of Labor in production; large population growth levels and dependence burden; high and growing unemployment levels and under-employment; and predominantly primary products export; and weak in international relationships (Todaro 1977). In essence, this means that these economies have slow growth rates, low per capita incomes and a high propensity to consume, which, in turn, do not allow them to save. That is, they have higher consumption charges compared to the level of local wealth foundation which results to low capital accumulation, and thus local investments, as the economies face deficiencies in capital necessary to undertake development initiatives. Given the low domestic investments, private overseas investment currents are needed to expand productive and technological capacities of developing economies.

Developing countries particularly Mali is generally affected by savings deficient. At the end private foreign capital is left as the only basis of capital for investment. In Mali foreign direct investment (FDI) is preferred most related to other procedures of private foreign capital as it perceived to play a central macro-economic role in motivating economic growth. Advocates and policies maker have cited the above mentioned factors coupled with other potential profits of FDI while making the situation for increased FDI inflows. Moreover, foreign investment is measured to be comparatively stable with less sensitivity to economic fluctuations when compared to other form of investment like portfolio investment.

The World Bank 2010 defines FDI as cross-border equity flows between economies where a local resident in one economy controls (at least 10% voting stock) the operations of a business entity domiciled in extra economic jurisdiction. From the Law on Investment Promotion (Republic of Mali 2004), it can be said that foreign investment means the contribution of foreign capital in the creation, growth, reorganization of a trading company in the country. The foreign investor can take the form of a natural person and not a citizen of Mali; a partnership with majority control belonging to a non-Malian; or a company incorporated under other jurisdictional legal channels other than Mali.

The World Bank 2010 contrasts FDI from portfolio investment by associating the degree of influence each one accords the respective owners. While portfolio investments represent passive
ownership of securities, FDI represents an active participation of owners in decision making and operations of the firm.

Opinion is divided about the actual contribution of Overseas Direct Investments towards economic growth. Proponents believe in effectiveness and benefit of free market mechanism of FDI and argue that FDI fills the savings gap, foreign exchange gap, revenue gap and management gap (Todaro 1977), promote credit and risk sharing across borders (O’Connel et al, 2010) and bring with them superior technology and skills base, promote skill upgrading, offer employment and enhanced innovation and thus can be said to enhance efficiency and development (Blomström 1986). According to (Abala 2014) FDI augments domestic capital, facilitate movement of technology and trade across borders, skills development to local labour, and upgrades methodical and organization capacities. (Mwega 2009) sees FDI as impacting positively on the profit and productivity prospects of private local investment through provision of investable financial resources, new talents and competence.

Opponents argue that FDI undermine macro-economic stability by exposing domestic markets to external volatility and sharpening the trade-offs between competing objectives of monetary policy, widens the said gaps, increase dependency, and crowds out local savings (O’Connel et al, 2010). Hence, according to (Schnitzer 2002), many economies in Africa until late 1980s, did not assign a boundless value to FDI as many leaders feared for “loss or dilution of political situation, negative effect on local firms e.g. bankruptcy and general deterioration the environment resources especially if foreign investments were engaged to the natural resource sector.

**Background of the Study**

In many developing countries, particularly in Africa, parts of Asia and South America, much emphasis is placed on the ability of foreign direct investment to promote their economies and to further the development and growth of their country. In several countries, it tries to avoid that FDI provides additional resources that can increase and contribute to the economic performance of the host country.

FDI is more interesting in this area than it is helping to build skills through technology transfer, that is, local firms train local staff in how to manage the specific things of their operations. Foreign investment also has a strong industrial impact that improves and increases production rates and promotes the competitiveness of host country products in global markets, and is also estimated to contribute significantly to the success of technology transfer. FDI is thought to fill the technological gap that is high in the LDC through direct and indirect technology transfers (World Development Report, 2011).
Problem Statement

The Government of Mali places a high premium on the involvement of inwards FDI towards economic growth as evidenced in various deliberate interventions it has initiated to harness FDI inflows into the economy. However, Mali’s receipts of inbound FDI as a fraction of GDP remains lower than Sub-Saharan Africa i.e. a six year (2010-2015) average of 0.9% compared to 2.4% for Sub-Saharan Africa (SSA) (The World Bank 2016).

Despite the general perception of the positive contribution inbound FDI towards economic growth, information on the actual impact to the economic growth of Mali has been insufficient. Yet, successive governments have laid emphasis on the need to improve investment climate (in some instances offering concessions) in bids to spur economic growth. The question in the minds of policy makers is what is the real support of FDI on economic growth? Are there specific conditions under which FDI boosts economic growth? Many previous studies in these areas have given mixed results. Given the level of importance accorded to in-bound FDI to Mali’s economic growth, it is necessary to empirically assess the FDI-economic growth nexus.

Research Questions

This study will undertake a time series analysis of FDI and economic growth in Mali from 1985 to 2015. In doing so, the following questions will be answered:

i. Does FDI really complement growth?

ii. What factors determine the effects of FDI on Mali’s economic growth?

Objectives of the study

Main objective

The main objective of the study is to find out whether FDI inflows have an impact on economic growth in Mali.

Specific objectives

The study seeks to:

i. Empirically analyze the impact of net aggregate FDI inflows on economic growth in Mali over the period 1980-2015

ii. Determine the complementary factors under which FDI boosts growth as hypothesized in literature iii. Make policy recommendations based on (i) and (ii) above.
Significance of the study

The Government of Mali has instituted deliberate interventions to attract direct investments from abroad. This study contributes to the discourse on the growth of FDI and economic growth by extending the debate beyond the direct attribution of FDI to economic growth by analyzing the factors that affect growth through economic growth by FDI. The study will help us realize the real worth of such interventions and inform decisions about on how the economy will harness the FDI-induced economic growth.

Additionally, since the study covers a relatively long period (1985-2015) during which the economy experienced internal shocks findings will help us analyze the impacts of these shocks as they have a direct bearing on the investment climate in general and economic stance adopted by the nation. The outcome of this enquiry will inform policy decisions with respect to Mali’s investment stance. If the complementary factors positively affect the impact of FDI in economic growth, policy makers may device ways to encourage, avail or facilitate the provision of these factors to attract more FDI inflows into the economy. If it emerges that FDI and economic growth are positively related, then policies aimed at increasing FDI inflows into Mali will be encouraged.

Conversely, if FDI has negative impact on economic growth, then policy makers would reconsider initiatives already in place to attract FDI. It will thus open up new areas of enquiry partly informed by the changing dynamics of World Investment, and the ever progressive Malian Economic Agenda. As such, new enquiries will address the Mali-specific FDI economic growth nexus.

Also to show that no study was done before on this case of my country what really motivated me to do this so FDI is very important for the economic growth of developing countries especially Mali could be my contribution of this study.

Literature Review

This chapter will discuss existing theories and empirical studies in order to have a better grasp of the nature, scope, and methodology used in prior studies.

Theoretical Review

Neoclassical theory and endogenous growth

The theory of neoclassical growth and the theory of endogenous growth form the basis of most empirical work on foreign direct investment and economic growth. Solow’s theory of neoclassical growth (1956) developed a neoclassical growth model. The theory describes how to
achieve a stable rate of economic growth with the good forces of the three driving forces: labor, capital and technology. It comes out by contrasting the amount of labor and capital in Cobb Douglas' production function, a state of symmetry is realized. This theory emphasizes that technological change has a great influence on economic growth. It must also ensure that economic growth will not continue unless there is continuous technological change.

Neoclassical theory postulates that long-term economic growth stems from two exogenous factors, namely: technological progress and growth of the labor force. In neoclassical theory, foreign direct investment inflows offer a solution to the gap amongst saving and investment, the exchange rate discrepancy and the financial gap. Foreign direct investment may be a driver of economic growth for host country by cumulating capital formation, decreasing unemployment, stimulating manufacturing growth, providing management know-how and creating brands, and access to the international production network.

Neoclassical theory evaluates the role of indecision in investment resolutions. It states that investors are uncertain about futures; they can reduce investments or completely not invest. Conferring to the theory, there is undesirable link amid ambiguity and investment. The instability of foreign direct investment consequently is considered to have influence on countries economic growth. The endogenous growth theory is a model of the equilibrium of technological change in which long-term growth is mainly motivated by the accumulation of knowledge by prospective agents that maximize profits (Romer, 1986).

The theory of endogenous growth emphasizes that FDI has a long-term effect on output growth. To clarify the key role of FDI in the long-term growth of domestic country, Barrow and Sale-i-Martin, (1995); Mania, (1992); and Romer, (1987); has modified Solow's neoclassical growth model by encompassing human capital growth factor as well as physical capital to describe the crucial role of FDI in developing economies. The authors have modeled FDI as a means of promoting long-term economic growth through the continuous transfer of knowledge that accompanies FDI. As an externality, this transfer of knowledge will take into account non-decreasing returns that lead to long-term growth. Consequently, if the elements of growth, encompassing FDI, are considered endogenous in the econometric model, the long-run effect of FDI would follow.

Therefore, a precise channel through which technology flow from advanced nations to lagging nations is the flow of FDI. FDI subsidizes not only to economic growth via capital formation and technology allocation, but similarly by cumulative the level of familiarity through vocational training and expertise acquisition. Conferring to the endogenous growth theory, three core channels can be noticed through which FDI impacts growth. First, FDI upsurges capital accumulation in the domestic country by presenting new ideas and skills. Second, it promotes the
level of knowhow and expertise in the domestic country via training of workers and administrators.

Third, FDI intensifies competition in the local country's industry by overpowering obstacles to entry and decreasing the market power of prevailing firms. The theory of endogenous growth argues that FDI has a constructive effect on economic growth, although the unpredictability of FDI flows often has undesirable effects on growth or economic development. The theory states that FDI certainly affect growth by depressing the cost of research and development by inspiring innovation. If foreign direct investment influxes are indeterminate, the cost of research are undefined, which negatively affect incentive to innovate. Thus, the instability of foreign direct investment weakens investment and adversely influences GDP growth.

**Investment Development Path Model**

Consistent with the eclectic paradigm, Dunning, 1981 modeled the Development Path (IDP) along Rostow's growth stages where economies at various stages of growth describe different OLI benefit configurations as they undergo a unique blend of conditions political, cultural and economic. According to (Fonseca Miguel 2007),FDI is developing through a trajectory enlightened by the interactions between the level of economic growth and NOI (the net investment position abroad). (Kyrkilis and Moudatsu 2011) note that the IDP is idiosyncratic in nature, that is, the path is country-specific and is influenced by: the level and nature of natural resource endowment; market size; nature of the economic system (export orientation or import substitution) and macroeconomic policy environment (government policies, market mechanisms).

Economies in the early phase of economic development have negative positions in terms of location and ownership and are generally characterized by insufficient levels of capital accumulation, per capita income, markets, infrastructure and labor. The attractiveness of the country as a destination for FDI and the ability of local businesses to engage in international production. At this stage of pre-industrialization, resource-rich countries can attract FDI that is based on the search for natural resources.

FDI inflows begin in the second stage when a country exploits the locational benefits of industrialization, infrastructure development, capital accumulation, increased domestic demand, productivity and human capabilities. The Notice of Intent remains negative as local businesses cannot exploit the benefits of ownership to trigger outward FDI, although exports of labor-intensive and low-technology goods may occur.

The economies of the third phase (mainly emerging economies) are showing a growing position in terms of unemployment insurance claims as FDI goes out and FDI inflows gradually slow
down. Improved income levels lead to increased demand for higher quality products. Higher wage levels erode low labor costs, deter local investment and lead to projects abroad where labor costs are lower; while technological progress encourages the intensive manufacture of homogeneous merchandises.

Inward FDI is becoming more and more efficient and low wages are no longer the main motivation. Regional economic integration makes it possible to locate the different phases of production in the constituent states according to their comparative location advantages and hence the influx of FDI to states with such benefits.

The position of economies is positive in the fourth stage, as local firms gain ownership advantages similar to those enjoyed by foreign firms, even though they still lack information-intensive technologies. Governments, through their policies, are working to reduce transaction costs, regulate markets, and focus more on the benefits of location than on technology and skill accumulation. Outward FDI (efficiency and strategic assets seeking FDI) in Stage 5 due to cross-border production and trade as countries increasingly engage in knowledge production, high-intensity technologies information, organized markets and motivated FDI when countries converge.

**Theory of capital**

(Mundell 1957) In what has been dubbed the theory of capital empirically observed that (US) firms chose to invest abroad if they could obtain higher rates of return. The theory is therefore based on differences in rates of return between countries. This theory, however, had some shortcomings in the fact that two-way flows of FDI could be observed between two countries (Hymer 1976).

**Selected growth theories**

According to (Todaro and Smith 2010), the theorization of postwar economic development (World War II) revolves around four schools of thought: the linear growth model; models of structural change; international models of dependency; and the counter-revolution of the free market. Linear models consider economic development as a series of growth stages experienced by all economies. The series is informed by different endowments of savings and investment. (Rostow, 1960) have argued that economies go through sequential but distinct stages of development and that all societies fall into one of five stages. Economies at the traditional (pre-Newtonian) stage limit levels of productive potential due to insufficient or insufficient application of science and technology, while those in the second phase (pre-conditions at takeoff) embrace modern science expanding choice benefits from their interaction with more advanced economies. The take-off phase sees a rapid expansion of industries, profitability, and
reinvestment of profits, increased revenue levels and the adoption of technology. Lead to maturity where economies participate in international markets and where local capacities (production, technology or trade) increase the stage of maturity where attention is now turning to durable goods.

Theories of structural change (Lewis, 1955) prescribe a reorganization of internal processes (economies, industrial and institutional structures) so that developing countries can move to developed country status and support economic growth. In his two-sector model, Lewis saw labor mobility from the surplus agricultural labor sector to the highly productive modern sector, influenced by investment and capital accumulation. The sector is not only more profitable (and therefore reinvestment is possible) but it also has higher wage rates that lead to savings and more investment and thus to economic growth.

**Empirical Review**

The empirical review covers data from a few studies dealing with the impact of FDI on economic growth in Mali and internationally.

**International evidence**

Blomstrom et al. (1998) in their studies found that FDI positively impacted economic growth; however, income threshold exited beyond which FDI had additional influence on economic growth. On explaining the above scenario, they suggested that, when countries reached a defined level of income threshold they absorb expertise and benefit from diffusion of technology. De Mello (1999) in another study described that, the interaction of FDI and countries human capital has a vital influence on economic growth; this condition enlightens us on the differences in which different counties absorb technological capacity.

From Gregorio (2003) in his contribution on FDI, he noted that FDI can enable a country to bring technologies and knowledge that are not easily accessible to domestic financiers, thus growing production in the economy. FDI similarly offer skills and expertise that a country is lacking, but can be accessed by foreign investors in international market. De Gregorio exposed that, increase in cumulative investment by a margin of 1 percentage point, this stimulates GDP of Latin America by 0.1 to 0.2% in a given year, similarly, the rise in FDI augment the growth by 0.6% per year.

Foreign direct investment is considered to have a positive influence on the economic growth of developing economies; however the capacity of impact is determined by the conditions and features of the domestic country, Bengoa and Sanchez-Robes (2003). In a comparable study, Johnson (2005), used panel data to evaluate influence of FDI, in this study he found that foreign
direct investment augments economic growth in developing nations but not in developed economies.

In addition, Li and Liu (2005) scrutinized whether FDI influences the economic growth for host economy. Data from 84 countries starting 1970 to 1999 was used, similarly simple and simultaneous equation modelling technique was employed to test the FDI to economic growth nexus. In order to obtain the desired result, the endogeneity is tested using the Durbin-Wu-Hausman test (DWH) and the result of the sample is significant because the total endogeneity is not significant but when the period is divided between 1985 and 1999 and gross domestic product (GDP). In addition, Phillips Perron (PP) was used in testing the stationarity of variables and the variables were found stationary. This research suggested a strong harmonizing link amongst FDI and countries' economic growth.

In a study conducted by Ilhan (2007) on over 50 empirical surveys of the relationship between FDI and economic growth, 40 of these studies showed a positive relationship with only 2 negative reports and the rest showing no effect. This empirical evidence indicates that most FDI is associated with growth. In addition, Lumbila (2005) tests a hypothesis if FDI has a global effect on economic growth and results revealed a statistically significant difference that a 10% increase in FDI can result in a growth of 0.34 %. In addition, Feridun and Sissoko (2006) scrutinized whether FDI influences the economic growth for host economy. Data starting 1976-2002 in Singapore was used, similarly Granger causality and Automatic Vector Regression (VAR) modelling technique was employed to test the FDI to economic growth nexus. Unidirectional causality was observed in this research.

Opolot et al. (2008) in his research observed that infrastructure, potential market, openness to trade, urbanization and investment rate of return positively impacts foreign direct investment in sub-Saharan Africa area, similarly, macroeconomic unpredictability was detected to be a vital factor depressing foreign direct investment. The research control variables such as public consumption, fiscal development, countries’ natural resources, expenditure on wages and political right were all considered insignificant.

**Local Evidence**

Developing countries generally and Mali in particular seem to appreciate the positive role FDI in the economic growth discourse. They commit themselves to great efforts to attract, maintain and exploit the flow of foreign capital. the reports indicated that global FDI inflows increased from around US $ 55 billion in 1980 to around US $ 1.4 trillion in 2000 (UNCTAD 2005). This enquiry is therefore motivated by the observed increased level of importance placed on the role of FDI, the increased volumes of in-bound FDI and the various efforts that Mali has put in place.
to attract FDI be it in macro-economic stabilization, legislation and other efforts to improve the business climate.

As noted by (Kyrkilis and Moudatsu 2011), FDI impacts positively on economic growth although Granger-causality between the two variables has not been explored comprehensively. (Albert Wijeweera 2010) agrees about the positive FDI-economic growth proposition but cautions that existing evidence on this nexus does not eliminate uncertainty. According to (Sumner 2005), the mixed findings arise possibly from differences in analytical methods and conceptual factors, including: differences in policy environments; FDI characteristics and host country factors; data comparability challenges and different methodologies applied in various studies. The need to empirically understand the economic growth-FDI inflows nexus in host countries is therefore inevitable.

**Summary of the literature review**

The main observation from this review is that there seems to exist a relationship between FDI and growth. This relationship, however, appear to vary from country to country and therefore, countries need to be cautious with the strategies they employ to attract inwards FDI. As pointed out by (Jensen 2006), FDI forms a part of everything that influences economic growth and as such, we may not simplify and single out the growth effects of FDI from the National Accounts. In principle, therefore, studies about FDI-induced growth should extend their scope to beyond direct attribution of FDI to capture the aggregate growth effects of other factors such as prevailing macro-economic conditions, governance, legal, policy regimes and other interventions sought to spur economic growth.

**Methodology**

**4.1. Research Methodology**

In this section, the basis of this study to show the empirical analysis, the theorization of the FDI-induced growth framework, the description of the empirical model, and the description of the data and variables. The chapter arranges the groundwork for the argument of the conclusions in the following chapter.

**4.2. Model Estimation**

This survey used OLS (ordinary least squares) to approximation the magnitude of the effect and conditions of FDI-induced growth.
4.3. Analytical Model

A linear log-log regression model was used in the study to examine the effect of FDI on Economic Growth. The literature reviewed has shown linearity between the dependent variable and independent variables therefore linear model was preferred for this study. The research model of this study is basis Cobb-Douglas production function with FDI integrated as one of the factor inputs; which takes the form:

$$ GDP = f (FDI, GE, HC) $$

Mathematically, the log-log model showing the correlation between the dependent variable and the independent variables will be formulated as follows

$$ \text{LogGDP} = \beta_0 + \beta_1 \text{LogFDI}_\text{inflow} + \beta_2 \text{LogGE} + \beta_3 \text{LogHC} $$

GDP = Gross Domestic Product in Mali

FDI = Foreign Direct Investment Inflow in Mali

GE = Government Expenditure in Mali

HC = Human Capital represented as secondary school, universities, and colleges enrollment

$\beta_0$ = Constant

$\beta_1, \beta_2, \beta_3$ = Coefficients of independent variables

Hypothesis

H1: $\beta_0, \beta_1, \beta_2, \beta_3 > 0$

H0: $\beta_0, \beta_1, \beta_2, \beta_3 \# 0$

4.3.1. Operationalization of the variables:

Gross Domestic Product

It is obtained as a gross output of all complete goods and services in the entire economy. Normally used because it is a good show the scope of growth in an economy. The data will be collected from World Bank, statistical quarterly abstracts for period 1985 to 2015.
Foreign Direct Investments

It shows the net inflows of foreign investments in the country. If FDI is channeled into productive use it may lead to economic growth. The data will be collected from bureau statistical of Mali, statistical quarterly abstracts for period 1985 to 2015.
Mali’s FDI and Economic Growth trend

![Trends in GDP and FDI inflow in Mali from 1985-2015](image)

Figure 4.2: Mali’s FDI and Economic Growth trend

The trend of Mali's economic growth indicates a position that is sensitive to interior and exterior shocks. For example, the negative growth of 1992 is attributable to massive disinvestments and the withdrawal of official development assistance because of the uncertain political climate caused by the unrest for multi-party democracy, the ensuing violence and the fugitive corruption in the country the time up to this year's general election. In general, all election years have negative effects on economic growth rates. The decade from 1991 to 2000 is indicative of uncertainties about Mali's economic growth trajectory.

However, starting in 2002, the economy has been on an upward trajectory, due in part to a smooth transition to governments and the deliberate macroeconomic stabilization efforts that the successor government has initiated. Indeed, this rate (%) period corresponds with the time (2003-2007). This shows that economic growth has a robust relationship with the political climate (and by extension investment) and macroeconomic stability. The sharp fall in the growth rate in 2008 is a direct consequence of the post-election upheavals at the end of 2007 and the start of 2008. In the future, the economy has presented some signs of recovery, albeit below expected growth of at least 10% in Vision 2030.

**Human Capital**

This variable is associated with the proportion of students in secondary education, universities and others colleges as an indication of the value of the country labor force and thus its
attractiveness as a place to manufacture goods or provide sophisticated services. The proportion of eligible students in secondary education is significant in reflecting the status of an educated effort force for competitiveness in modern manufacturing and service activities. The data will be collected from World Bank, statistical quarterly abstracts for period 1985 to 2015.

**Figure 4.3: Human capital trend**

In both education and health, Mali ranks with the worst performing countries in the world. This should make development of these sectors, in particular the provision of primary health care, primary and secondary education services the overriding urgent priority of Government.

In education, the fundamental issue is the underfunding of primary education which received only 37% of public sector funds to the sector. This share is low relative to the average of 46% for low income countries, and relative to the objective of achieving substantial improvement in primary enrollment ratios by 2001. At the same time, increases in overall sector financing went largely to higher education and to a lesser extent to the secondary level through higher levels of student transfer spending. The Government spent over the period, about US$ 57 per primary school student, compared to US$ 1,596 for each higher education student. This intrasectoral use of resources is inappropriate given that the social returns to primary education are about 3 times that to higher education. In 2015, public expenditure on education for Mali was 18.2%. Though Mali public expenditure on education fluctuated substantially in recent years, it tended to increase through 2003 - 2015 period ending at 18.2 % in 2015.
Government Expenditure

It is estimated to bear a direct relationship with economic growth. An increase in government expenditure translates to provision of more social capital hence encourage economic growth. Government spends money in development of infrastructure which decreases working costs thereby promoting FDI (Wheeler and Moody 1992). Infrastructure increases the productivity of investments thus improving economic growth. Further, Governments undertake critical human development in such regions as education and teaching that are direct inputs to growth complete the raise of technology and skills development. This, in the long-run, encourages developing of the importance more content of production. The data will be collected from World Bank, statistical quarterly abstracts for period 1985 to 2015.

![Government Expenditure (in Millions USD)](image)

**Figure 4.4: Government Expenditure trend**

The key issue is significantly declining public financing inspite of overwhelming needs in sector and clear evidence of underfunding. This is aggravated by inefficiencies in drugs expenditure, and low cost recovery at higher level facilities. Total health expenditure is the sum of public and private health expenditures as a ratio of total population. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. Health expenditure per capita (current US$) in Mali was reported at 1.9 billion USD in 2015, according to the Bureau Statistical of Mali.
4.4. Pre-estimation tests

4.1.1 Stationarity Test

The lack of liberation of remarks over time, i.e. non-stationary series that lead to fallacious or inconsistent regression problems, where null hypotheses end up being rejected when they should have been accepted. Stationary series have finite variance, experience transient deviations from the mean, and is apt to coming back to their long-term mean. That is, we target is estimate variables that have their averages and their variances as definite time-independent constants, that is, stationary series. This will be done by applying the Dickey-Fuller Enhanced Unit Root (ADF) test.

4.4.2. Co-integration Test

Abadir and Taylor (1999) indicate that co-integration when variables deviate from a certain relationship. In the long term, deviations are expected to be corrected leading to consistent differences between variables. According to Engel and Granger (1987), the order of integration of a non-stationary time series defines the number of times it must be differentiated to reach stationarity. We will use ADF to exam the unit roots in the residues. This will be tested on a null hypothesis that the residues have unit roots, i.e. the series are not stationary against an alternative hypothesis that the residues do not have unit tests (i.e. that the series are stationary).

4.5. Empirical Results

Empirical results the analysis is presented in this section where stationarity test, co- integration test and analytic (diagnostic) tests are discussed and the regression results presented.

4.5.1 Testing for Stationarity (Data Presentation and Analysis)

Unit root test approaches were employed to ascertain whether the variables employed in the model were free of unit root. Although for the Autoregressive lag (ARDL) method to co-integration doesn’t require pre-testing of the variables for the existence of unit root, the study undertook the test to ascertain that the variables are not combined of order greater than one.

Augmented Dickey-Fuller (ADF);

ADF unit root test is specified as;

\[ H_0: \text{variable has unit root } [I (1)] \]

\[ H_A: \text{variable has no unit root } [I (0)] \]
Decision criteria, if t-calculated is more than the absolute of the critical value at 5% significant level which was chosen by this study, reject (refuse to accept) the null hypothesis. That is we agree to take (accept) the alternate hypothesis of the variable been stationary.

**Table 4.1: Unit Root (ADF) results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF C&amp;T</th>
<th>Critical Value (5%)</th>
<th>Result</th>
<th>ADF C&amp;T</th>
<th>Critical Value (5%)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>LogGDP</td>
<td>0.350913 (0.9772)</td>
<td>-2.963972</td>
<td>I(1)</td>
<td>-8.022943 (0.0000)</td>
<td>-2.967767</td>
<td>I(0)</td>
</tr>
<tr>
<td>LogFDI</td>
<td>-1.649380 (0.4458)</td>
<td>-2.963972</td>
<td>I(1)</td>
<td>-5.090384 (0.0004)</td>
<td>-2.991878</td>
<td>I(0)</td>
</tr>
<tr>
<td>LogGE</td>
<td>-0.354876 (0.9047)</td>
<td>-2.963972</td>
<td>I(1)</td>
<td>-5.099483 (0.0003)</td>
<td>-2.967767</td>
<td>I(0)</td>
</tr>
<tr>
<td>LogHC</td>
<td>-1.415063 (0.5617)</td>
<td>-2.963972</td>
<td>I(1)</td>
<td>-6.212218 (0.0000)</td>
<td>-2.971853</td>
<td>I(0)</td>
</tr>
</tbody>
</table>

Source: E-VIEWS9.5

**Note:** Figures within parenthesis indicate Mackinnon (1996) one side p-value. 5% critical value to reject of hypothesis of unit root applied.

Table shows the result of ADF that all variables have unit root at level; they are all stationary after first differencing at 5% significant level. That can be appreciated by comparing the computed values of both the ADF statistics test with the critical values at 5 percent level.

**4.5.2. Granger Causality Test**

This part is now based in principle on the Granger causality, the large relationship between foreign direct investment and gross domestic product. Works with Granger causality between 2 variables X, Y are all stationary. The two (2) researchers Granger and Engel (1997) detect that if co-integration happens between two (2) variables in the long run, there must be either unidirectional or bi-directional Granger causality between them. When Granger causality holds this doesn’t assurance that X causes Y but, it proposes this X maybe will cause Y. Granger causality is done to see the short run causality. If economic theory clearly indicates the causality, just follow the theory.
As it is shown above, it was found out that bidirectional causal relationship exists between FDI inflow and GDP. The bidirectional connection between GDP and FDI inflow infers that FDI inflow is not only basis of GDP, nonetheless also has influence. Both probability that is 0.0437 and 0.0083 are significant at 5% level of significance that maintains that both FDI inflow and GDP has bidirectional causal relationship as depicted above in the outcome.

4.5.3. Testing for Co-integration

Find out if there is a long term relationship between the variables, data was regressed and the lagged values thus obtained were tested using Dickey-Fuller for Unit root test.

The results in table show us a long term relationship between variables as shown on the table below:

Table 4.3: Results establishing co-integration

Source: E-VIEWS 9.5
4.5.4. Diagnostic Tests

The reliability of the goodness of the model is determined by conducting the diagnostic and stability tests of the model. The diagnostic tests are approved out to test the robustness of the results from the ADRL model. The diagnostic tests take care of Serial autocorrelation. To ensure consistency, the study employed diagnostic tests which Autocorrelation, and Heteroscedasticity.

5.5.1. Serial correlation Test

Since the study is dealing by time series data, the possibility of autocorrelation is high. So there is need to do the test residuals for autocorrelation.

The employed LM Test of residuals serial autocorrelations adopted by Breusch-Godfrey.

Table 4.4: Serial Correlation LM Test

<table>
<thead>
<tr>
<th>Breusch-Godfrey Serial Correlation LM Test:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>0.889056</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>2.058453</td>
</tr>
<tr>
<td>Prob. F(2,25)</td>
<td>0.4236</td>
</tr>
<tr>
<td>Prob. Chi-Square(2)</td>
<td>0.3573</td>
</tr>
</tbody>
</table>

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 12/30/17  Time: 01:04
Sample: 1985 2015
Included observations: 31
Presample missing value lagged residuals set to zero.

Source: E-VIEWS 9.5

Table shows the result of LM test based on Breusch-Godfrey framework which indicated that the null hypothesis of no serial correlations could be accepted at 5 percent level of significance. The probability of the observed R-squared is about 36% which more than 5% required to admit (accept) the null hypothesis. This indicates there is no autocorrelation in the variables.

5.5.2: Heteroscedasticity Test

The study further employed Heteroscedasticity test under the framework of Breusch- Pagan-Godfrey. The result is illustrated in table below.
Table 5: Heteroscedasticity Test: Breusch-Pagan-Godfrey

<table>
<thead>
<tr>
<th>Test Equation:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Source: E-VIEWS 9.5</td>
<td></td>
</tr>
<tr>
<td>The null hypothesis of no Heteroscedasticity could be accepted since the probability is more than 5% i.e., 38%. Thus, the analysis is not suffering from Heteroscedasticity.</td>
<td></td>
</tr>
<tr>
<td>5.6. Results Discussion</td>
<td></td>
</tr>
<tr>
<td>[ \text{LogGDP} = \beta_0 + \beta_1 \text{LogFDI} + \beta_2 \text{LogGE} + \beta_3 \text{LogHC} ]</td>
<td></td>
</tr>
<tr>
<td>[ \text{LOG (GDP)} = 11.35 + 0.061*\text{LOG (FDI-INFLOW)} + 0.43*\text{LOG (GE)} + 0.10*\text{LOG (HC)} ]</td>
<td></td>
</tr>
<tr>
<td>(0.99) (0.01) (0.06) (0.02)</td>
<td></td>
</tr>
<tr>
<td>This study is trying to examine the impact of foreign direct investment on the growth of the Malian economy using data on FDI inflows and GDP from 1985 to 2015. So in order to be able to get our main objective, we developed the function Cobb Douglass production and regression of ordinary least squares. In the regression calculations we had to use such as gross domestic product (GDP) is represented as the dependent variable while foreign direct investment (FDI), public expenditure (GE), and human capital (HC) are the independent variables, to calculate the impact of FDI on economic growth in Mali. The data were then exposed to various differential analyzes to find relationships between variables such as GDP, IDE, CH and GE analyze their correlations.</td>
<td></td>
</tr>
<tr>
<td>\text{FDI} in inflow means foreign direct investment the results show us that a 1% change will increase GDP 0.06%, all things being equivalent, however it is statistically very significant at 5% of 0.0000%, this means that when the government of Mali attracts more investors will likely increase economic growth. This shows that there are a very positive connection between FDI and</td>
<td></td>
</tr>
</tbody>
</table>
economic growth. And also the plan attracts a lot of investment in the mining sectors, agricultural also the building of roads and hydroelectric dams.

GE means (government expenditure) the results is also trying to show us that a 1% change in GE will steer GDP towards an rise of 0.43%, and also it is statistically significant at the 5% level of 0.000%. Essentially, this means that when the government of Mali increases its spending, economic growth improves, which simply shows that there is a positive link between the public and economic growth. The Malian government is trying to address social and economic challenges by investing heavily in education and training, scaling up social services, proposing agrarian reforms and affirmative action, providing safety nets to the marginalized poor and encouraging policies that are more conducive to economic growth. Recently, the government introduced free and open primary and secondary education in all public schools and even universities, which is very important.

HK stands for human capital, the results also show here that the 1% increase in HK will direct GDP to an increase of 0.10%; this variable is also very statistically significant at 5% of 0.0002%. That is, if human capital rises each time economic growth will increase then the government must promote the plan how to increase human capital which will not only reduce poverty in the country but also rapidly increase economic growth.

Thus, he can affirm that the influence of foreign direct investment on the economic growth of Mali is positive. Correlation analyzes between FDI inflows and other variables such as human capital and government expenditures also shown a direct proportional relationship.

This result is also in line with the results of previous studies that are to say in principle on the direct positive influence of FDI and GDP. In this regard, in a study by Ilhan (2007) of more than 50 empirical studies on the connection between FDI and economic growth, 40 studies showed a positive impact with only 2 negative reports and the rest did not showing no effect. This empirical indicates that most FDI is related with growth. In addition, lumbila (2005) verifies an assumption that FDI has an overall influence on GDP growth and the results make known a statistically significant difference: if FDI increases by 0.01 point, this means that an increase 10% of FDI can bring about 0.61 percent growth. About another study, Feridun and Sissoko (2002) study the correlation between FDI growth and GDP growth for the 1976-2002 periods in Singapore with Granger causality and Automatic Vector Regression (VAR). Their results have shown a unidirectional causality ranging from FDI to GDP growth, but in mine the result shown bidirectional causality between FDI and GDP. It also corresponds to the results of Esso (2010), which reports in its study of African countries on the relationship between FDI inflows and GDP growth, strong positive impact and significant growth in Angola, Mali, Côte d'Ivoire, Kenya, South Africa, Liberia and Senegal.
Rare studies such as Salz have a negative relationship between FDI and GDP growth. De Mello (1997) studies developing countries. He declares that FDI is supposed to be a combined set of stocks of capital, know-how and technologically progressive and developing countries. The level of competence of local firms must play a role and the lost countries must use non-fiscal instruments such as specifying the local content of inputs to increase profits from FDI.

In addition, other empirical evidence on the disadvantages of FDI posits that foreign direct investment doesn’t have some negative aspects. Importing capital requirements and obsolete technology increasing the local wage full payment of high wages by subsidiaries of multinationals.

Contribution to economic leakage (and the deterioration of the balance of payments) by the preference of imported inputs for local imports, lack of links with local communities, development of "enclaves", negative effect on competition in the local market, use transfer pricing to evade local taxes and deceive local partners on returns, encouragement of corruption, environmental pollution, particularly in the extractive and heavy industries, social disorganization associated with accelerated marketing and creation of tastes for expensive foreign consumer goods and, as a result, deprivation of political autonomy.

The empirical results make known a direct proportionality between GDP growth and foreign direct investment. These results imply that FDI encourages GDP growth and recommends that the Malian government should put in place the policies to attract more and more foreign investment while managing the same investments to avoid the negative influence of FDI on local businesses. Such as foreclosure transfer prices to evade local taxes and the contribution to economic leakage through the preference of imported resources put into a project inputs to the citizens. The results also underline the government need to eliminate deep flaws such as corruption, to enhance security, especially in the aftermath of the terrorist attacks. We must also channel investments in infrastructure and, in general, create a licensing environment to more competitively mobilize FDI funds to integrate into our economy.

Finally, recent progress in the mining area including gold mining in the south-west region and the recently discovery of oil reserves in northern Mali, a project of which foreign partners are candidates; policies should be developed to control the repatriation of Mali’s income. On the contrary, a big part of these funds should be reinvested in more needy sectors, in particular towards human development, since GDP growth would be negligible if it did not reflect the population positively by reflecting an improvement in the standard of living. Which aims to transform Mali into a newly industrialized middle-income country offering a good quality of life to all people by 2030 in a clean and protected environment.
6.1. Conclusion

The first chapter explores the context of this study by developing what FDI implies, its impacts both positive and several definitions. The second chapter looks at my theories about FDI and economic growth. The chapter then developed the findings of other researchers on the subject. Chapter three is based on FDI in Mali and factors affect FDI trends on economic growth in Mali. Chapter Four details the research method applied in this study. The following section explains the design of the research based on the research questions, the methodology uses a quantitative research model that helps to identify the numerical characteristics of the effects of FDI on economic growth in Mali. The chapter also details how the data analysis will be performed. The target population explained as well as the sampling procedure. The survey instruments were explained by validation and verification of the reliability of the results. The next chapter provides a detailed report of the results of the case study.

The results of the study show that there is a strong and significant positive relationship between foreign direct investment and economic growth in Mali. This positive relationship means that there is a direct proportional relationship between foreign direct investment and economic growth. The results show that other factors also played a role; in particular, the relationship between FDI and human capital is positive, indicating a direct proportional association between the two variables. This means more foreign direct investment in higher education institutions and therefore a higher level of human capital.

On the basis of the above, we must stimulate foreign direct investment to promote economic growth. The political implications of these findings are that FDI is a prerequisite for economic growth in Mali. The results also highlight the need to invest in human development with GDP growth is negligible if it does not positively reflect the population by translating an improvement in living standards, which corresponds to the 2030 vision that aims to transform Mali a new industrialized country and an intermediate income offering a high quality of life to all its 2030 citizens in a clean and secure environment.

Foreign direct investment is important for any developing economy as it bridges the gap between national investments and facilitates technology and knowledge transfer from abundance regions to deficit regions, mainly developing economies. However, studies on the real effect of FDI on economic growth have often yielded different results.

The successor government in Mali has implemented various deliberate interventions to attract FDI, although the country has not benefited much from FDI spillovers. This study therefore sought to examine the effect of FDI and the intervening variables on economic growth in Mali for the 1985-2015 periods. The author selected other variables by adding IDEs as guided
empirical studies in this line of study. The descriptive variables used in the study include foreign direct investment (FDI), public expenditure (GE), and human capital (HC). The smallest ordinary square was used to estimate the effect of FDI and other variables on Mali's GDP growth.

Increased for the stationarity test of the variables shown that some were stationary at levels while others had at least one unit root. The results showed that FDI, in itself, was important for influencing economic growth in Mali, but had to interact with public spending and the human capital of the economy or to condition the desired impact on the economy growth.

Economic theories argue that FDI has the potential to be an important component of a nation's development strategy. FDI contributes to development in three main ways (Jacobs, 2001). First, capital inflows such as FDI allow countries to import more than they export, which allows them to invest more than they save and thus accumulate capital more quickly, which boosts labor productivity and wages. FDI has the potential to absorb some of the surplus labor literacy in rural and urban informal sectors (Jacobs, 2001). Job creation in industries with good prospects for productivity growth is an important aspect of poverty reduction strategies, which is good for local entrepreneurs (Watkins, 1998). Third, FDI can transfer technology and expertise, thereby boosting the productivity of local firms (Jacobs, 2001).

This can occur through training, competition and emulation in industries where foreign firms are present and through "upstream and downstream linkages" with other industries (for example, foreign firms provide inputs and production markets on more favorable terms exports). In the context where we find a direct proportional relationship between FDI and economic growth, the government should strive to attract more FDI, but enforce strict rules and regulations on foreign investment and make all its possible to manage the IDE subsidies while preventing in other industries by the legislation.

It is imperative that policies that promote economic growth receive sufficient attention to stimulate economic growth in order to attract FDI, as the literature indicates that most of the factors that stimulate economic growth also attract FDI. The literature also shows that the trend of FDI shows that some countries attract higher FDI than others. Mali has relatively low levels of FDI and, as such, needs to improve its business environment by improving administrative, legal and judicial procedures to ensure property rights, fight corruption and respect the environment legality. All of these countries will see higher levels of much needed FDI channeled into the country.

In a nutshell, foreign direct investments channeled into the country should be well used for the projects for which they are targeted.
6.2. Policy Implications

The study found a strong positive relationship between FDI and GDP, the level of human capacity and GDP, and then public spending and GDP. Based on the findings from this study, the following recommendations are suggested. The government of Mali needs to improve these sectors which have a positive effect on economic growth.

Policies such as opening up the economy by engaging more bilateral and multilateral trade agreements, improving the quality of infrastructure by channeling more resources for development, especially in marginalized areas of the country with the discovery in the north of the country, and show greater political will in the fight against corruption in order to inspire more confidence in foreign investors. These policies can enhance the attractiveness of FDI and thereby increase economic growth.

Multinationals play a key role in foreign direct investment in the Malian market, particularly in the construction industry. One of the direct effects of this situation is the fear of local businesses losing control of markets and industries over growing multinationals. To answer the question of how domestic firms can survive and compete with multinationals, the government needs to review their FDI and multinational policies. In addition, because of the positive effects of FDI on the Malian economy, the government should continue to maintain its open door policy for FDI and multinationals in the future.

However, feasible measures should be taken to limit the disadvantages for domestic firms. Foreign investment policy should be seen as a complementary element of national development policy. Openness to foreign direct investment and multinational investment must be achieved simultaneously. No special treatment should be given to multinationals. Local businesses should instead receive the same treatment and the administrative burden on national state-owned enterprises should be phased out.

The government must also go further and actively seek to attract FDI by commercializing our economy and possibly creating national investment promotion agencies (UNCTAD, 2001). In summary, with respect to investment promotion policies, Mali should take a proactive approach to promoting FDI and explicitly seek ways to increase its benefits in terms of technology, skills and market access. In this type of policy, foreign investors are targeted at the industry / enterprise level to meet the specific needs of Mali that correspond to its development priorities.

6.3. Limitations of the Study

The main limitation of this study is that it does not incorporate all the variables that influence economic growth, as suggested by other empirical studies due to the lack of recorded data. For
example, corruption is a determinant of the country's economic growth, but data on this variable are unavailable, making it difficult to integrate into the study. And my variables which are also FDI, Government Expenditure and Human Capital that I took in the Bureau Statistical of my country the data are available from 1965 to 2015 while those of 2016 and 2017 are not yet available that’s why I made my study on 1985 to 2015. Another crucial area that limits this study is based on if all government expenditure have an impact on FDI inflow, moreover on human capital it is assumed only the schooling factor rather than job experience that might boosts FDI inflow in Mali.

6.4. Areas for Further Study

Future researchers may examine the effect of omitted variables to establish their real impact on FDI inflow and GDP growth for instance, the consequence of corruption and institutional quality on Mali’s economic growth.

REFERENCES


