

# **THE ROLE OF THE INFORMAL SECTOR IN INVESTMENT IN SUB-SAHARAN AFRICA**

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## **ABSTRACT**

*For a long time economic researchers condemned the existence of a huge informal sector in economies, viewing it as a deterrent to investment, growth and development. This view is however being confronted with intense criticism particularly in developing countries where formal unemployment is rapidly growing and poverty widely spreading, which in turn is leading to an expanding informal sector. Thus alternative schools of thought that view the informal sector as a source of livelihood to the unemployed and poor have subsequently been developed. However, not much empirical work has been carried out to validate any of these theoretical claims, particularly in African economies mainly because of data constraints on informal market activities.*

*This paper therefore empirically examines the linkages between the informal sector and investment, using data on the informal market activities developed by the Heritage Foundation. The paper used system-GMM estimation techniques that are most appropriate for dynamic panel data used in this study.*

*The findings of the study indicate that there is a positive relationship between informal sector activities and investment. These results suggest a review of the standard thinking towards the role of the informal sector in development. The paper argues that creation of wealth and poverty reduction in SSA is associated with a larger informal sector. In order to enhance the role of the informal sector, this paper suggests intensified focus on the sector in development programmes, review of legislations that affect the informal sector and a greater focus on this sector by donors and development partners.*

*Informal sector enterprises are a key form of organization of production and an important provider of employment and income opportunities in both rural and urban areas (UNESCO, 2007).*

## **1.0. INTRODUCTION**

The informal sector has been a subject of debate since the International Labour Organization (ILO) sponsored several surveys of labour markets in developing nations in the early 1970s. The debate is gaining momentum, especially in Sub-Saharan Africa (SSA) economies, where over half of the population live on less than one dollar per day and where there is evidence to indicate that a majority of the population depends on the informal sector for their existence. According to existing estimates, it is not unusual for the informal sector to account for over half of Gross Domestic Product (GDP) and employment in developing countries, SSA included.

The informal sector has been defined in many various ways by several authors ( ILO, 1972; Weeks, 1975; Bromley, 1978; Castells et al., 1989; Pratap and Quintin, 2006 ). In general, drawing from various definitions, the informal sector activities are characterized by small-scale, self-employed activities, with or without hired workers, typically at a low level of organization and technology, with the primary objective of generating employment and incomes. In SSA, the informal sector can be seen on the streets, sidewalks and back alleys of cities including petty traders, street vendors, small scale artisans and shoe shiners. Informal sector activities thrive in countries with stiff government restrictions. The activities are usually conducted underground or without following the laid down procedures in the formal spheres. They constitute largely unrecognized, unrecorded and unregulated activities. They therefore escape the attention of the administrative machinery responsible for enforcing laws and regulations.

It should be noted that a government restriction in one area creates an informal market in another. For instance, a country with high barriers to trade may have laws that protect its domestic market and prevent the import of foreign goods, but these barriers create incentives for smuggling and an informal market for the barred products. In addition, governments that do not have strong property rights protection for intellectual property, for example, or that do not enforce existing laws encourage piracy and theft of these products.

In most of the SSA countries, neither the public sector nor the formal private sector is able to provide enough jobs for its expanding labour forces. Thus self-employment is increasingly the only alternative, given the growing youth unemployment. This problem was aggravated with the advent of Structural Adjustment Programmes (SAPs) and liberalization policies which emphasized the role of the formal private sector and market determined policies in SSA economies. Following this changing policy environment, most of the SSA economies which depended on agriculture were exposed to foreign competition. However, most of the private economic agents were un-prepared to assume roles previously performed by the public sector. As a result, the private sector economic agents in the commodity sector production chain were competed out of business and mass unemployment followed. These are the unemployed who are opting for the informal sector. Moreover, the liberalization and SAPs efforts involved retrenchment and early retirement schemes, some with packages to enable employees to employ themselves and put up small scale businesses, categorized as informal sector activities, according to the ILO definitions.

Based on this background, the role of the informal sector in SSA economies towards private investment growth, generation of employment and incomes, and poverty reduction cannot be

overemphasized. However, despite this great contribution of the informal sector in SSA economies, no specific study has attempted to empirically link the informal sector activities to private investment. Moreover, the informal sector has not been accorded the recognition it deserves in major policy documents such as the Poverty Reduction Strategy Papers, in which policies of attaining increased investment and growth are documented. These existing gaps may be justified on grounds of the difficulties in the measurement and quantification of the informal sector activities. However, the Heritage Foundation has constructed indices of economic freedom that can be used as proxies for the informal sector activities. This study is therefore an attempt to empirically investigate the impact of informal sector activities on private investment in SSA economies. The proposition of this paper is that private investment in SSA economies can not be explained adequately if the contribution of the informal sector is ignored. Thus the study postulates that the informal sector does not matter for private investment in SSA.

## **2.0. ANALYTICAL FRAMEWORK**

Various theories exist linking the informal sector, investment and other economic activities. Some studies have argued that informality impedes investment and growth. This is because businesses that operate outside the tax and regulatory net have a hard time accessing credit, limiting the scale of their operations and exploitation of investment opportunities. Moreover, the informal economic activity undermines the ability of governments to raise revenue and therefore denies the public sector resources that would otherwise play a complementary role to private investment through infrastructural development or facilitation of business environment (Loayza, 1996). These linkages imply that the informal sector negatively affects investment.

According to Kutcha-Helbling (2000), the informal sector facilitates undemocratic decision making and misguided policies since the informal sector does not have property rights hence the participants are not empowered to influence policy making. Moreover, the existence of the informal sector not only threatens the collapse of the formal sector as the formal sector mimics the informal sector so as to avoid taxes but also it erodes competitiveness since the remaining formal sector shoulders the tax burden as the informal sector evades taxes.

*Formal and informal assets are not comparable. Informal assets seldom carry proper titles, they can not be used as collateral for formal loans which implies that many profitable investment opportunities, hence opportunities to build wealth are left untapped in the informal sector ( De Soto, 2000).*

On the other hand, other studies view informal employment as a lifeline for the poor or as a legitimate response to over-burdensome regulation, implying positive relationships between the informal sector and investment. In this case, the informal sector provides the economy with a dynamic and entrepreneurial spirit, which in turn can lead to more competition, innovation, higher efficiency and increased investment (Schneider and Klingmair, 2004). According to Barro (2000), the existence of the informal market makes it possible for agents to engage in entrepreneurship or to obtain scarce goods and services that otherwise would not exist. The same author further argues that corruption may be preferable to honest enforcement of bad rules. For example, outcomes may be worse if a regulation that prohibits some useful economic activity is thoroughly enforced rather than circumvented through bribes.

Madziakapita (2003) argues that the informal sector helps to absorb labour of new arrivals in the urban areas. Without the existence of the informal sector, it is likely that a 'social economic

crisis' can emerge hence destabilizing the whole society in general. As opposed to the formal sector, the informal sector capably creates a large number of jobs at a very low capital cost because it does not incur extra costs such as employment benefits.

This analysis implies that the apriori sign between the informal sector and investment is ambiguous. This study modifies the simple accelerator model of investment and incorporates an informal sector activities proxy based on these theoretical linkages.

### **2.1. Model and Data description**

The literature proposes several theories that explain the behaviour of investment in an economy. Broadly, the earliest strands of investment behaviour include: the accelerator theory, the neoclassical theory, the Tobin q theory and the cash flow theory (Bazoumana, 2005; Kul and Mavrotas, 2005; Cherian, 1996; Kopcke, 1985; Tobin, 1969; Koyck, 1954). However, these theoretical models of investment were formulated to analyze investment behavior of firms in industrial economies. Direct application of these models except the simple accelerator or neoclassical models to understanding investment behavior in developing countries is limited by, first, data constraints on key variables such as capital stock. Second, the incompatibility of the institutional and structural peculiarities of developing countries with the underlying assumptions of the basic models such as perfectly competitive markets, little or no government investment, a perfect flow of information and absence of liquidity constraints (Sioum 2002; Ronge and Kimuyu, 1997). However, African countries have suffered from financial repression, huge debt overhangs, political tensions and macroeconomic instabilities. These experiences render the conventional models untenable and irrelevant in the context of developing countries if they are adopted without modifications.

Consequently, more relevant theories have been developed and applied in developing countries to incorporate theories that capture characteristics akin to these economies. Most studies have included variables capturing Mckinnon (1973) and Shaw(1973) financial repression hypothesis, debt overhang, irreversibility and uncertainty issues, complementarity of public investment, institutional structure and governance issues among other variables relevant to the developing countries context (Bazoumana, 2005; Sioum, 2002; Mlambo and Oshikoya 2001)

In the same line of reasoning, this study uses the simple accelerator model and justifies the inclusion of other variables besides the informal market activities, based on the uniqueness of African economies. In the accelerator framework, desired capital stock is assumed to be proportional to expected level of output.

The model used in this study is specified in equation 1 below. The dependent variable is private investment. Additionally, the equation incorporates the dynamic nature of investment, thus a lagged dependent variable is also part of the explanatory variables. The dynamic approach captures the slow adjustment of the actual capital stock to the desired capital stock.

$$i_t = \rho i_{t-1} + \psi_1 y_{it} + \psi_2 y_{it-1} + \text{informalCEFW}_{it} + X_{it} + v_{it} \quad (1)$$

Where  $i_t$  represents investment at time t,  $i_{t-1}$  represents lag value by one period of investment,  $y_{it}$  and  $y_{it-1}$  represents output and one period lagged output respectively and  $v_{it}$  represents time, individual and error components of the model.

InformalCEFW represents three proxies for the informal sector. These include: informal market activities, Corruption Perception Index(CPI) and Economic Freedom of the World(EFW). The informal market variable captures the effects of government interventions that are not always fully measured elsewhere. It also captures taxes and imperfections in the private market. It is a constructed index that is ranked from 1 to 5, where 1 represents an economy with free market economy and minimum informal market activities while 5 represents a country with an informal sector that is larger than the formal sector, (Beach and Miles, 2005). The construction of the informal market activity is based on CPI. Other factors considered in the construction of the informal market activity apart from CPI include: smuggling, piracy of intellectual property rights, and underground provision of labor and other services.

CPI is also included in a separate model in this study. CPI is constructed by the Transparency International. The CPI ranges from 1 to 10, in which case, a low score means corruption is perceived to be high. As the level of corruption increases, the level of informal market activity rises. This is based on the premise that citizens often engage in corrupt activities, such as bribing an official, so that they can enter the informal market.

EFW is a composite index capturing other variables apart from CPI and informal market activity. This study also estimates a separate investment equation with EFW as an explanatory variable. Besides the two variables already highlighted, the EFW index captures other variables such as property rights, regulation, monetary policy and government intervention in the economy. The EFW is ranked from 1 to 5, with one representing an economic environment or a set of policies that are most conducive to economic freedom. Thus, the more prevalent informal market activities are, the worse the country's economic freedom score. Data for the

EFW, CPI and informal market activities was obtained from the 2006 Index of the Economic Freedom of the World data downloadable from [www.heritage.org/index](http://www.heritage.org/index).

The variables referred to as  $X_{it}$  represent the control variables in the investment equation. These include: turnover ratio as an indicator of the stock market development; credit to the private sector; public investment; external debt and policy variables explained below.

The level of public investment is included in the model to capture the complementarity/substitutability hypothesis between government and private investment. The a priori sign is ambiguous since public investment can either crowd out or crowd in private investment depending on the kind of projects it allocates expenditure to. The data is obtained from the African Development Indicators.

External debt has been identified as one of the determinants of private investment since large external debts are a disincentive to investment. Debt service payments reduce the domestic resources available for investment besides raising the domestic interest rates. A debt overhang is also a major source of uncertainty caused by the fact that the size of future transfers to creditors is uncertain. The a priori sign is ambiguous since if the borrowed funds are appropriately utilized within the public sector, there can be a positive impact on the private sector. The data for external debt is obtained from the Global Development Finance.

Most authors who have estimated econometric models with policy considerations incorporated as part of the explanatory variables have adopted the Burnside and Dollar policy index. This index has been used widely in growth-aid studies where it is constructed by regressing the dependent variable i.e., growth, on inflation, budget deficits and trade openness. They then

use the weight derived from the growth regressions to construct a weighted average of the three variables forming what is popularly referred to as the Burnside and Dollar policy index. However, since these weights are not applicable to investment, this study does not use the index but considers each policy variable separately.<sup>i</sup> Moreover, it is necessary to measure the impact of these policy variables on investment separately, since the reforms that have been undertaken by most African economies were targeted at affecting these policy variables separately. For instance, the International Monetary Fund and World Bank prescriptions of tight monetary policy was meant to check the money supply and thus affect inflation while tight fiscal policy involving government expenditure cuts was meant to check the budget deficits. The data for these variables is obtained from the World Development Indicators. The data for the turnover ratio and credit to the private sector are obtained from the World Development Indicators.

## **2.2. Estimation Method**

The inclusion of a lagged dependent variable on the right hand side of the equation estimated renders Ordinary Least Squares(OLS), Fixed Effect (FE) and Random Effect (RE) estimators biased. This is because the lagged dependent variable is correlated with the error term. Instrumental estimators are used to solve the bias problem. The instrumental estimators approach was developed by Anderson and Hsiao (1982) and later modified by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). This study utilizes system GMM, which is the most modern development of instrumental estimators. The system GMM is a system of equations that uses both the lagged levels and lagged differences as instruments in a single system. System GMM takes care of endogeneity, omitted variables and any persistence in the data series.

### **3.0. EMPIRICAL RESULTS AND ANALYSIS**

In this section, the results of all models using private investment as the dependent variable are analyzed. In columns, 2-4, Table 1 below each of the three informal sector indicators, i.e., informal market activity, EFW and CPI is entered separately in the models. In analyzing the results, not much weight is given to control variables that are not statistically significant or whose coefficients are of small magnitudes. All abbreviations are provided in Appendix 1.

#### **3.1. Analysis of the results**

In column 2, Table 1 provided below, the findings show that the coefficient of the informal sector is significant at 5% level and has a positive influence on private investment. Since informal market activities are a direct result of some kind of government intervention in the market place, this result can be interpreted in various ways. For example, the result can be interpreted to suggest that a larger informal market gives a greater chance to entrepreneurs to conduct their business without being taxed and regulated by government officials. They would also be interpreted to imply that market forces are not fully operational in these economies or that informal sector has a role to play in development as opposed to standard thinking that the informal sector drags development.

In column 3, Table 1, the coefficient of EFW capturing the status of economic freedom has the expected negative sign and is statistically significant at the 10% level. The EFW is ranked from 1 to 5, with 1 representing an economic environment or a set of policies that are most conducive to economic freedom. Although the results conform to theory, they conflict with the above result indicating a positive relationship between the informal market activities and investment. This would be explained by the inclusion of other variables in the EFW index such

as monetary policy and property rights whose operations would be constraining the conduciveness of business environment and hence decreasing private investment.

The Corruption Perception Index (CPI) is ranked from 1 to 10 where a low score implies high corruption. The results indicate a positive relationship between corruption and investment and it is significant at the 10% level in the model on the last column. This result implies that corruption promotes investment, contrary to popular theories on this subject. This result could be explained by the fact that in SSA, most of the institutions are clogged with bureaucracy and many legal processes in entrepreneurship. Thus, the investors circumvent the requirements for business operations and the associated bureaucracy through bribes and other shortcuts. This result further reinforces the earlier positive linkage obtained between the informal sector activities and investment.

## REGRESSION RESULTS

Table 1: The Dependent Variable is Private Investment

Independent Variables	Sys-Informal Market	Sys-EFW	Sys-CPI
GDPG	0.07(0.27)	0.04(0.45)	0.11(0.43)
<b>EFW</b>	-	<b>-3.63(-1.85)*</b>	-
<b>CPI</b>	-	-	<b>0.03(1.81)*</b>
<b>Informal Market</b>	<b>1.54(2.34)**</b>	-	-
Publ	0.16(1.67)*	-0.10(-0.66)	0.15(1.47)
Infla	-0.005(-3.23)***	-0.007(-3.62)***	-0.003(-2.33)**
Deficit	-0.01(-0.26)	-0.08(-0.85)	-0.02(-0.377)
StockM	-0.0016(-0.169)	-	-0.01(-1.78)*
Turnover	-	0.03(1.70)*	0.06(1.80)*
Interest	-0.09(-1.90)*	-0.19(-3.17)***	-0.11(-3.31)***
Creprivt	0.094(2.19)**	0.05(1.13)	0.07(1.82)*
Privt(-1)	-0.21(-2.17)**	0.04(0.49)	-0.16(-2.13)**
Sargen test (p-value)	44.95(0.745)	61.15(0.134)	43.45(0.764)
AR(1) test(p-value)	-2.04(0.04)*	-2.354(0.019)*	-2.236(0.025)*
AR(2) test (P-vaue)	-1.327(0.185)	-1.301(0.193)	-1.563(0.118)

For all the coefficients the t-statistics are in parenthesis; \*, \*\*, \*\*\* denote 10%, 5% and 1% significance levels, respectively. For the diagnostic tests, the p-values are in parenthesis. The variables of interest to this study are highlighted.

Although, all the models conform to the accelerator theory, output is not significant in any of the models. The only control variables that are consistently significant and with the expected

signs in all the models include inflation and interest rates. It is surprising however that interest rate bears a negative sign and is significant contrary to the results obtained in most previous studies on private investment. Even if most of the economies in SSA have now fully liberalized their markets and the interest rate spreads would be narrowing thus inducing private investors to borrow from banks, informal financial services still dominate the lending and borrowing markets. It would thus be expected that investment would be non-responsive to formal interest rates.

Other important variables in private investment include financial variables, mainly credit to the private sector and stock market variables whose findings conform to theory. The results in this case suggest that liquidity measures of financial development are more important in investment than the size of the financial system. All the models were tested without countries that are perceived to be outliers such as South Africa, Nigeria and Cote d' Ivoire. The results are not significantly different from the reported models.

In all the models, diagnostic tests to validate the estimation technique were also conducted. In order for the estimates to be valid, the model should not be over-identified. In addition, the assumption of no serial correlation in the error term is essential for the consistency of estimators. Thus if the disturbance terms are not serially correlated, there should be evidence of the existence of negative first order autocorrelation,  $AR(1)$ , in the differenced residuals and no evidence of second order serial correlation,  $AR(2)$ , in the residuals. In all cases, the Sargen tests satisfy expectations. It fails to reject the null hypothesis of validity of instruments thus confirming that the models are well specified. There is no second order serial correlation in the differenced residuals thus the disturbance terms are not serially correlated as indicated by the p-values in parenthesis for  $AR(2)$  in Table 1, which confirms the consistency of the coefficients.

#### 4.0. CONCLUSIONS AND RECOMMENDATIONS

Two opposing schools of thought exist concerning the role of the informal sector in investment, with the negative linkages dominating the theory. However, the findings of this paper suggest that under conditions of unemployment and poverty as is the case in SSA, the informal sector should be viewed with positive lenses.

The findings lead to two major conclusions. First, the perception that the presence of a huge informal sector in an economy constrains investment is baseless and its standard application is questionable, considering the empirically positive relationships obtained in this paper. Second, the informal sector has a role to play in generating incomes and wealth. The formal private market mechanism alone cannot be relied upon to solve the poverty and unemployment problems in SSA. Thus, continued embracing of the formal market mechanism without refocusing on informal sector strategies will render the poverty reduction programmes elusive in these economies.

***With this kind of results, it is not illogical to wonder.....What is so evil about the informal sector if it positively engineers investment particularly in economies where public servants are not accountable to the citizens for tax revenue, engage in grand corruption and where law enforcement mechanism is circumvented through bribes?***

Thus, this study provides two recommendations to enhance the role of the informal sector. First, policy documents developed in these economies such as Poverty Reduction Strategy Papers (PRSP) should be reviewed and refocused to incorporate and put more emphasis on informal sector development efforts. Such policy focus will strengthen efforts to formulate

programmes aimed at guiding the operations of the informal sector. Second, the governments of these economies should be involved in: improving the working conditions of the informal sector, improving accessibility to physical infrastructure, assisting in the formation of self-help groups and business and workers associations, legislating sub-minimum wages in the informal sector and establishing social benefit scheme for the informal sector.

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## APPENDIX 1: Abbreviations

Abbreviation	Name of variable
Privt	Private investment
GDPG	Output growth
EFW	Economic Freedom of the World
CPI	Corruption Perception Index
Informal Market	Informal sector proxy
Publ	Public investment
Infla	Inflation
Deficit	Budget deficit
StockM	Stock market capitalization
Turnover	Turnover ratio in the stock market
Interest	Lending rate
Credprivt	Credit to the private sector
Privt(-1)	Lagged value of private investment

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<sup>i</sup> The variables are weighted according to their power in explaining growth in a growth-aid regression models.