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**INVESTMENT ATTRACTION, COMPETITION AND GROWTH; Theoretical  
Perspective in the Context of Africa**

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## **ABSTRACT**

Examination in both theoretical and empirical perspective deduce that, the major indicators of modern economic growth, depends on the extent of economic financialization, commonly defined as capital stock, industrialization and Technological Advancement. The focus of this paper is to theorize investment attraction mechanism for a national economy in a global competitive arena, taking a posteriori perspective of Africa politico-economic climate.

## **1.0 INTRODUCTION**

Over the years, the various popularly accepted mainstream economic schools, had battled in difficulty to clearly distinguish in its taxonomy records, the word “Capital” and “Investment” in its theoretical composition and analytics, as a result, both words are used interchangeably, as a required aggregate input toward output of production, without necessarily referring to monetary content of analysis. It is observed, in very exceptional cases and instances that, an attempt is made by few economists, to analyze the effects of the value of money on overall economic performance in both short and long-run, took cognizant of investment theory in nominal perspective.

One of such great example is the argument of Ludwig Von Mises (1953 [1912]), who was credited for using the marginal utility analysis to account for value of money, and also the first to recognize the significance of credit creation in the context of a decentralized, time-consuming production process. Which forms the axiom of Hayekian Triangle analysis of the relationship between Savings and Economic growth, the very tenet of Austrian Business Cycle theory. To achieve capital accumulation in a decentralized economy measured in nominal content, for the purpose of investment to production, requires a sacrifice in consumption-savings perversity, the essence of the Heinleinian principle (Heinlein, R., 1966). Which attracted Leijonhufvud (1968) to argue that, Saving-Investment perversity, in fact was central to Keynesian vision of the macro economy. Snowdon and Vane (2005) posit that, Austrian Economics interest in macroeconomic theorization within the framework of monetary effects towards economic growth, led to the interpretation of the word “Loanable funds” and its theoretical effects, which I quote “*They are,*

*all the ways, that the investment community takes command of the unconsumed resources. Further taking command, has to include retaining command-in the case of the undistributed earnings of the business firm, in order to expand its own productivity capacity, and is to forego some of the market rate of return on its retained earnings, a rate that it could obtain through the financial sector.”*

This excluded consumer loans as income earned by individuals and spent on consumption. Their theory further exposed that, in the market economy, there are different financial instruments like Bank Deposits, Passbook account, bonds and equity shares. Garrison (2001) in his debate of Austrian economic school, on the perspective of capital-based macroeconomic framework, argued, the economy production possibilities frontier, is determined by the loanable funds market, in which the rate of interest reflects the savings preference of the market participants, while the corresponding consumption preferences are accommodated by the output of the final stage of production in the Hayekian Triangle. (Hayek, 1933) predicate, resources are being allocated among the stages of production on the basis of the cost of investment funds, such that the rate of return in the real sector, as reflected in the slope of the triangle's hypotenuse corresponds to the rate of return in the financial sector.

Then emerged, Harrod-Domar growth model, within the development economic literature. (Easterly, 1999, 2001a, and Chapter 11) posit, the model was to foster high rate of accumulation as a key to economic growth, in the absence of substantial inflows of foreign capital, a country must generate the necessary resources through high rate of domestic savings. And expect that, it will come with a cost of inequality-in-income because without adequate incentives, investment rates would remain insufficient to generate sustained growth. (Kuznets, 1955) hypothesized that a country to develop, inequality will increase before declining. Even though in the later years (Aghion et.al, 1999) debunked the proposition of Savings and Inequality of income in any growing economy in the face of empirical evidence. (Alesina & Rodrik, 1994; Persson & Tabellini, 1994) pose that, redistribution of income, by raising the tax burden on potential investors, reduces investment and consequently economic growth. Olson (2001), postulate, there are two key requirements for any society to grow economically, first establishment of secure and well-defined individual rights with respect to property and impartial enforcement of contracts, as capitalism is first and foremost a legal system and second, the 'absence of predation of any kind'.

Then Murphy et al's (1989b) reinvigorated version of the Big Push theory, which propound that, industrialization requires a large market in terms of domestic demand in other to make increasing-returns-technologies, profitable. Historically, theoreticians has focused in the development of investment theory and it effects towards economic growth, which the theoretical focus of this paper will put forward model required for "Investment-Attraction" in a modern economy, operating in a global competitive market, towards economic growth, especially in the perspective of developing economies

## 2.0 LABOUR WAGE CONTRACT & SAVINGS

Austrian Business Cycle theory is established on the axiom of Individual Savings in micro economy, contributing to capital accumulation, which augment macroeconomic production frontier. This uphold the assumption that, Wage negotiators aim for constancy of their real wage for effective budget planning towards savings. This concur to Fischer's (1977) model, that nominal wage increases should be set equal to expected inflation

$$\dot{P}_t^e = E(\dot{P}_t | \Omega_{t-1}) \dots \dots \dots 1.0$$

$$\dot{W}_t = \dot{P}_t^e \dots \dots \dots 1.1$$

Then;

$$\dot{W}_t = E(\dot{P}_t | \Omega_{t-1}) \dots \dots \dots 1.2$$

$\dot{W}_t$  -----Real Wage

$\dot{P}_t^e$  -----Expected rate of Inflation

$\dot{P}_t$  ----- Actual Inflation

E----- Rational Expectation of Agents

This consolidate the empirical facts, such that in reality, there is the necessity of a corporate firm in a perfect market competition, to structure it real wage in correspondence to expected inflation and labour efforts. This is also in consonance to Solow (1979) postulation, that wage enters a

firm short-run production function in a labour-augmenting way, therefore a cost minimizing firm, favours real wage rigidity, which is demonstrated by the equation as,

$$Q = AF [e (w) L], e (w) > 0 \dots\dots\dots 1.3$$

- Q-----Firms Output
- A-----Productivity Shift Factor
- e----- Real Wage
- L----- Labour Input

I therefore postulate, “Savings is expected to rise to the optimum, to act as Investment- Capital Capacity to any Economy, when such economy approaches the theoretical positioning expressed by Fischer’s model” as

$$\dot{W}_t = \dot{P}_t^e \dots\dots\dots 2.0$$

$$\frac{\dot{W}_t}{\dot{P}_t^e} = 1.0 \text{ or } > 1.0$$

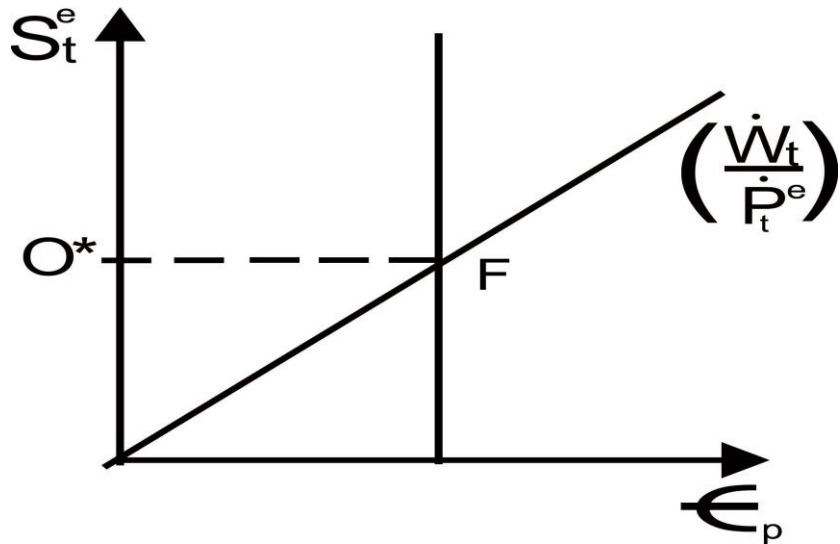
This theoretical positioning of an economy to trigger investment through Savings, in *ceteris paribus*, should be held in efficient Investment policy framework, which is expressed in an equation below as

$$\dot{S}_{t+1}^e = F \left[ \left( \frac{\dot{W}_t}{\dot{P}_t^e} \right) \epsilon_p \right] \dots\dots\dots 2.1$$

- $\dot{S}_{t+1}^e$ -----Expected Savings over-time
- F-----Industrialization factor of an economy
- $\dot{W}_t$ ----- Real Wage
- $\dot{P}_t^e$ -----Expected rate of Inflation
- $\epsilon_p$ -----Efficient Investment Policy Instrument

It is assumed that, in such status of an economy, the issue of capital deepening capacity, in large extent will be addressed endogenously, towards industrialization optimal in developing economies. Expressed in a panel form as Figure X1.

Fig. X1



O\* - Represent an Optimal level of industrialization of an economy, on Panel Fx. Model

Efficient in Investment Policy, under this model means, Policies, which are ‘*Savings-Incentive driven*’. This invoke workers, as the acting agents of the economy to become Savings bias, responding perfectly to the consumption equation of Solow’s (2000, 2002) model of growth as

$$Y = C + S \dots\dots\dots 2.3$$

Y----- Aggregate Income of Worker

C----- Consumption components of Wage

S----- Savings Components of Wage



### 3.0 TRANSNATIONAL CORPORATE INVESTMENT IN PERFORMANCE EFFECTS

In every endogenous competitive market, corporate performance and profit is largely dependent on the following

- i. Labour efforts, which corresponds to effective wage
- ii. Technology and Innovations

*The ultimate objective of every corporate firm is to perform, to attract larger market shares and satisfy aggregate demand. It is a posteriori argued, the driving indicators of such efficient performance is largely dependent on Labour efforts, Technology and Innovation. Therefore will theoretically expose the patterns below,*

#### 3.1. Labour Effort

It is theoretically postulated by (Yallen, 1984; Katz, 1988), any firm that aims to maximize its profits ( $\pi$ ) depending on its labour efforts, could be presented in the equation below as

$$\pi = AF [ e(w)L - wL ] \dots \dots \dots 3.1$$

- $\pi$ -----Firms Profits
- A-----Productivity Shift factor
- C----- Effort per worker
- L----- Labour inputs
- w----- Real Wage

This predicate, is in consensus with Marshall (1920), Akerlof & Yallen (1986), transnational corporate firms in the spirit of competition will pay higher wages to attract best workers. Secondly, to reduce the cost of labour turnover. Which also agrees to Salop (1979) mode of labour market equilibrium. It is a priori argued further, if the economy reaches the theoretical

positioning of (Eq|2.1) above, such higher wages will have a great impact in the Savings Capacity of the Economy. Analyzing the nature of international competition among firms (Fujimoto & Shiozawa, 2011[2012] Sect.b) asserts, international competition among firms of multi-national enterprise is a game with wage rates as handicaps. This exceptionally places, emphasis on the relevance of wages efficiency to both domestic and transnational firms towards performance in a perfect competitive market that characterized the global arena of trade, which is assumed to have theoretical effects on Savings, on an Investment-incentive-policy driven environment.

**3.2 Technology and Innovations**

Technology and Innovations, observed to have the capacity to attract Investment to an Economy by firms, whether national or transnational, was theoretically modeled by P. Romer(1990), He argued that, accumulation of knowledge as the outcome of a purposeful acts by Entrepreneurs seeking to maximize private profits; that is, technological progress is endogenized. Advancing the postulation of P. Romer, I therefore argue that, *“Any economy that places relevance in knowledge accumulation attract transnational firms into such economy, with the ultimate objective to tap into it skilled labour market, available at a liberal wage, to address the efficiency of delivering in a perfect competitive global market. This becomes a general situation when firms realize the cost efficiency in such a stylish labour out-sourcing than labour mobility programme”*. The after-effects of such a postulation is, it causes quality transnational firms to relocate to such economy or Invest in Research & Development Centers as extension of their offices in such economy to augment their global competitive performance.

In P. Romer’s (1986) model for endogenous growth economy, through production function, it was expressed in an equation as

$$Y_j = F (K_j, L_j, A) \dots \dots \dots 3.2$$

He argued at the micro level, the output of any individual firm (j), depends on its own inputs of Capital ( $K_j$ ), Labour ( $L_j$ ) and the Economy wide state of knowledge (A)

In his formulation, growth of knowledge is assumed to depend on the growth of capital, lacking a well-defined mathematical relation. However in a posteriori argument in the context of developing economy, I postulate that *“Aggregate growth of Knowledge is directly proportional to the Growth of Capital in such economy”*

$$A_N \propto K_N \dots \dots \dots 3.3$$

$$A_N = F K_{jN} \dots \dots \dots 3.4$$

$$F = \left( \frac{A_N}{K_{jN}} \right) \dots \dots \dots 3.5$$

- $A_N$ ----- Economy wide state of Knowledge
- $K_{jN}$ ----- Capital Investment of Firms in such Economy
- F----- Industrialization factor of the Economy

In reference to [Eq. |2.1]

$$S_{t+1}^e = F \left[ \left( \frac{\dot{W}_t}{\dot{P}_t^e} \right) \epsilon_p \right] \dots \dots \dots 2.1$$

Deriving the current equation as,

$$S_{t+1}^e = \frac{A_N}{K_{iN}} \left[ \left( \frac{\dot{W}_t}{\dot{P}_t^e} \right) \epsilon_p \right] \dots \dots \dots 3.6$$

Based on [Eq|3.6], we could therefore theoretically predicate that, high-Savings attraction of any developing economy to compliment the deepening of it capital stock, is highly dependents on the following

- i. Economy wide state of Knowledge
- ii. Efficiency of Investment Policy
- iii. Savings of the Workers
- iv. The ratio between real wage and Expected inflation
- v. Capital Investment of firms in such Economy

This establishes the Economic danger caused to an endogenous economy, when a firms engages in ‘Capital Flight’. This causes a distortion to the smooth functioning of the five leading indicators stated above, as the drivers to a national economy, in becoming a conduit to investment attraction and accumulation of capital, for Economic growth in a competitive global market

Therefore “Capital Flight” as an economic event, should be seen as the leading “enemy” to the sustenance and success of Investment attraction model of an economy and growth.

#### 4.0 ECONOMIC GROWTH THEORY

Since from the 18<sup>th</sup> Century, growth economic theorists, has formulated different models, using different indicative variables for an economy. But the most recent was Adelman (1958), who analyzed growth of an economy based on capital stock, natural resource, labour and stock of applied knowledge, then followed by

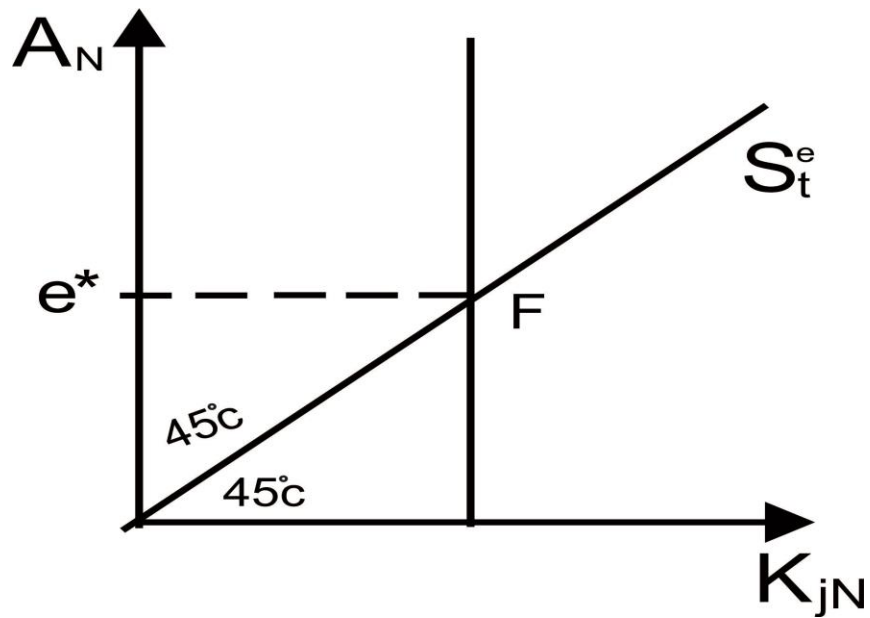
- Harrod-Domar model of Growth (Evsey Domar,1946, 1947 ; Roy Harrod, 1939, 1948)
- Solow- Swan Model of Growth (Solow, 1956, 1957 ; Swan, 1956)
- Romer-Lucas Endogenous models of growth (Paul Romer 1986, Robert Lucas, 1988)

The variance of my model from the above recognized models, is it focus on Investment attraction towards economic growth and theoretically represented by the equation

$$e^* = F [ (A_N , K_{jN}) + (S_{t+1}^e) ] \dots \dots \dots 3.7$$

And graphically represented below as Figure X2

Fig. X2



$e^*$ ----- Economic growth

This conclude that, any developing economy ( $e^*$ ) is expected to grow when it meet the following requirement

- i. A high industrialization factor of the economy
- ii. Economy wide state of knowledge
- iii. Capital Investment of firms into such economy
- iv. Expected Savings Over-time

## **5.0 INSTITUTIONAL REQUIREMENT AND POLICY CREDIBILITY FOR INVESTMENT ATTRACTION ECONOMY**

Policy according to Merriam-Webster (2018), state, it is a set of guidelines or rules that determine a course of action. Wiki-Foundation (2018) further define it as a deliberate system of principles to guide decisions and achieve rational outcomes. The focus of the paper under this topic is to establish theoretically, what it means as policy credibility and indicators that measures and evaluate it as well as institutions required to achieve it. The ultimate aim is to establish the character of a credible policy that promote Savings-Incentive environment of a national economy. Merriam-Webster (2018b), define Credibility as the quality or power of inspiring belief. While Wikipedia (2018) argue, as the objective and subjective components of believability of a source.

I therefore posits that, Policy Credibility is *a layout system of principles to guide decisions to achieve a rational outcomes, with it designed framework highly objective and subjective in a quality to inspire belief.*

Tinbergen (1952), Inspired that, policy makers must:

- (I) Specify the targets or goals of economic policy given a social welfare function, which the policy maker is attempting to maximize.
- (II) The policy maker should set out the policy instrument, which will be used to achieve the targets.
- (III) The policy maker, must make use of an economic model so that the instrument may be set at their optimal values.

Chow (1975) asserted that, normative approach to economic policy is concerned with how policy makers should act and, within the context of optimal control theory. Economists sought to identify the optimal policy in order to reach the best outcome, given the decision of takers preference.



It Central Bank should position itself in responsibility to design policy instrument, to address the following conditions

1. Policy that increases yield in money Savings in a national economy. And such could be achieved in a policy environment that promote a high return in treasury rate with respect to time, represented by the equations as;

$$S_t^e = \dot{T}_t^{r+1} \dots\dots\dots 4.1$$

This policy is possible, only under a small size government with low expenditure budget and active in economic managerial role as a market regulator rather than a market player in a developing economy.

2. Stabilization policy of inflation, with expected inflation seen as equal to real inflation rate for a long-run; with real inflation rate operating within 0-3.0 in a developing economy as appropriate to attract quality foreign industrial investment. And this could be represented by the equation as;

$$\dot{P}_t^e = \dot{P}_t \dots\dots\dots 4.2$$

3. Finally an economy that operate under a low interest rate, governed by interest stabilization policy, generate effect of a low cost in capital renting, with a stabilized general output prize of goods represented by the equation as;

$$C_{Ki} = [P_{Ki} (r_i + \delta_i)] \dots\dots\dots 4.3$$

$C_{Ki}$ -----Cost of Capital nominal

$P_{Ki}$ -----Cost of purchase of capital nominal

$r_i$ -----Real interest rate nominal

$\delta_i$ -----Rate of depreciation nominal

[Profit] = [Revenue] – [Cost of Capital]

† [Revenue] = [Profit] + [Cost of Capital]



$$R_K = [P_{TK} + C_K] \dots\dots\dots 4.4$$

$R_K$ -----Revenue of Capital

$P_{TK}$ -----Profit return on Capital

$C_K$ ----- Cost of Purchased Capital

$$R_K = P_{TK} + [P_K (r_k + \delta_k)] \dots\dots\dots 4.5$$

At the condition, when real Inflation rate is equal to zero, in *ceteris paribus*; the equation will be represented below as;

$$R_K = [P_{TK} + (P_K r_K)] \dots\dots\dots 4.6$$

At the condition, when Interest rate is stabilized, in *ceteris paribus*; price of goods will be stabilized, hence; Revenue will be equal to price of goods

$$R_K = G_P \dots\dots\dots 4.7$$

$G_P$ -----Price of Goods from purchased capital

$$\dagger G_P = [(P_K r_k) + P_{TK}] \dots\dots\dots 4.8$$

Therefore, monetary policy Instrument for investment attraction economy could be represented by the equation

$$\dot{M}_{Pj} = [(G_P)(\dot{T}_t^{r+1})(\dot{P}_t)] \dots\dots\dots 4.9$$

This theoretically deduce that, in any developing economy that seek to attract investment, should have a monetary policy instrument that has the target to achieve the following

1. Policy that stabilized price of goods
2. Policy that promote high rate of return in treasury bill
3. Inflation policy rate aspiring to zero

The impact is to increase profitability of investment, thereby attracting foreign direct investment through industrialization, innovation and technological advancement.

**[5.2] Fiscal Policy Credibility**

The effect of how Corporate income tax has on investment behaviour depends on how the Law define's 'profit' for taxation. Corporate income tax is a tax on corporate profits. Therefore if the Law define corporate tax as the Rental price of the Capital minus the cost of Capital, in this case, even though firms would be sharing a fraction of their profits with the government, it would be rational for them to invest. In a situation whereby the Rental price of Capital fall below the cost of Capital, it will result in disinvestment. A corporate tax measured in this way, would not alter investment incentive and affect investment decisions in such economy. The second instance is how the law treat depreciation of capital, which is observed to be contrary to theoretical economic approach. Economists treat current value of depreciation as a cost in the profit, whereas the law measure the corporate tax on firms by deducting depreciation using historical cost. This methodical approach will cost disinvestment especially during the period of inflation because replacement cost becomes greater than historical cost. This kind of corporate taxation turns to understate the cost of depreciation and overstate profit.

In any economy which has unstable inflation rate and high interest rate, need to set a correct policy definition for it corporate taxation, if it aspire to attract investment into it economy, using the equation as stated below;

$$C_T = \left(\frac{x}{100}\right) (P_{TK}) \dots \dots \dots 5.0$$

$$\dagger P_{TK} = R_K - [P_K(r_k + \delta_k)] \dots \dots \dots 5.1$$

$$C_T = \left(\frac{x}{100}\right) [R_K - \{P_K(r_k + \delta_k)\}] \dots \dots \dots 5.2$$

While

$C_T$ -----Corporate Taxation measurement

X----- Corporate Tax rate

Therefore [Eq|5.2], is the appropriate theoretical measurement of corporate tax on corporate profit in a developing economy aspiring to attract investment.

Hayashi (1982), further argued that, Firms base their investment decisions on the Tobin's q, established by the formula

$$\text{Tobin's } q = \frac{\text{Market Value of Installed Capital}}{\text{Replacement Cost of Capital}}$$

The numerator of "q" is the value of the economy's capital determined by the stock market.

While the denominator is the price of that capital, if it were purchased today.

If Tobin's q is greater than 1.0 then the market value is greater than the value of the company's recorded assets. This suggests that, the market value reflects some unmeasured or unrecorded assets of the company. High Tobin's 'q' values encourages companies to invest more in capital, because they are 'worth' more than the price they paid for. On the other hand, if Tobin's 'q' is less than '1' the market value is less than the recorded value of the assets of the company. This suggests that the market may be undervaluing the company. John Mohaljevic points out that, no straight forward balancing exists in the case of low q-ration. When 'q' is less than parity, the market seems to saying that, the deployed real assets will not earn a sufficient rate of return and that, therefore, the owners of such assets must accept a discount to the replacement value, if they desire to sell their assets in the market.

Summers (1981), also argued, the advantage of Tobin's 'q' as a measure of the incentive to investment is that, it reflects the expected future of profitability of capital as well as the current profitability. The higher the expected profits raises the value of stock, which then raises Tobin's-q and therefore encourages investment. Thus, Tobin's-q theory of investment emphasizes that, investment decisions depend not only on current economic policies but also on policies expected to prevail in the future.

I therefore postulate theoretically, *any national economy that seeks to engineer an environment that achieve Tobin's  $q=1.0$  or  $> 1.0$  of its investment market, require to meet two major conditions*

- i. It stock market should be 'sensitive', meaning highly liquid, with policies that respond favourably to all kind of intellectual properties*
- ii. It corporate tax policy, should treat all kinds of capital depreciation as cost*

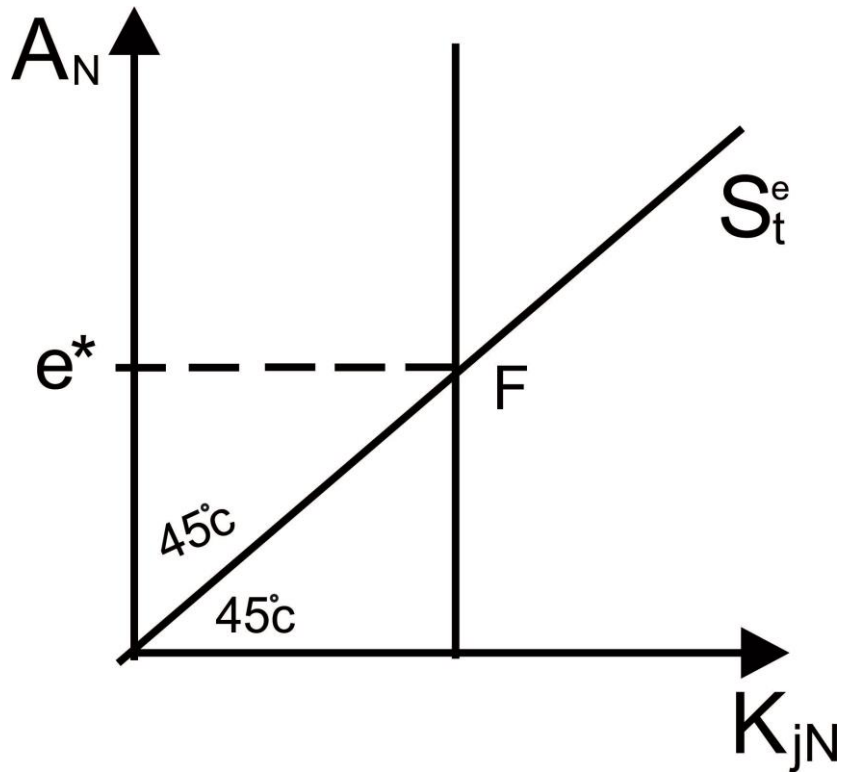
## **6.0 INSTITUTIONAL REQUIREMENT FOR INVESTMENT ATTRACTION ECONOMY**

For the entire theoretical bases of investment attraction to survive depends on quality institution and operational independence. I therefore concur with the report of (Brown, 1997), when a new monetary policy framework was set for UK economy on the 6<sup>th</sup> May, 1997; establishing operational independence for the Bank of England. Chancellor Gordon Brown, in an official statement, provided the following rational for the government's strategy. Which I quote "*We will only build a fully credible framework for monetary policy in the long-term needs of the economy, not short-term political considerations guiding monetary decision-making. We must remove the suspicion that short-term party political considerations are influencing the setting of interest rates.*"

I therefore submit that, most of the developing economies seeking to attract Investment towards growth requires institutional reforms. It Central Banks should be capable of conducting monetary policy in a manner free from opportunistic and partisan influences. In addition, fiscal policy should be subjected to harder budget constraint with the Central Bank not obliged to monetize deficits. The developing economies should prioritize the developing of it fiscal system as a matter of an agency because it is central to economic industrialization that causes growth.

**7.0 REQUIRED POLITICAL ENVIROMENT FOR INVESTMENT ATTRACTION  
THEORY TO HOLD**

I do theoretically postulate that, the ideal political environment that could easily attract investment and engineer rapid economic growth in developing economy as represented by the panel below as Fig. X2; shown by angle  $45^\circ$  to both X-axis and Y-Axis is an indication of a mixed economy, as the least fertile ground for the theoretical applicability and at most is a capitalist economy. The higher ( $S_t^e$ ) line continue to rise far away from the X-axis and increases the angle of elevation from  $50^\circ$  to  $60^\circ$  and so on, indicate the economy changing hands to a Capitalist economy



**8.0 CONCLUSION**

I do therefore hypothesized that, for a developing economy to be well positioned as an investment attraction nation, it efficient Investment policy instrument represented by ( $\epsilon_p$ ), could be mathematically justified below as;

$$F_{Pj} = (q^h, C_T) \dots \dots \dots 8.0$$

$$\dot{M}_{Pj} = [(G_P)(\dot{T}_t^{r+1})(\dot{P}_t)] \dots \dots \dots 4.9$$

Where

$F_{Pj}$ -----Fiscal Policy Goal

$\dot{M}_{Pj}$ -----Monetary Policy Goal

Therefore Efficient Policy Instrument ( $\epsilon_p$ ) for Investment Attraction Theory is represented by the equation as:

$$\epsilon_p = [F_{Pj} + \dot{M}_{Pj}] \dots \dots \dots 8.1$$

In reference to [Eq|2.1], it state that any economy with Saving-Incentive is represented by the formula

$$S_{t+1}^e = F\left[\left(\frac{\dot{W}_t}{\dot{P}_t^e}\right) \epsilon_p\right]$$

Therefore to measure ( $\epsilon_p$ ) of a national economy is represented by the equation as

$$\epsilon_p = \{[(q^h)(C_T)] + [(G_P)(\dot{T}_t^{r+1})(\dot{P}_t)]\} \dots \dots \dots 8.2$$

$$\dagger S_{t+1}^e = \frac{A_N}{K_{iN}} \left[ \left(\frac{\dot{W}_t}{\dot{P}_t^e}\right) \{ (q^h X C_T) + (G_P X \dot{T}_t^{r+1} X \dot{P}_t) \} \right] \text{ This is the } \textit{final derivation}$$

While the symbol (X) in the equation represent multiplication Sign arithmetically. This theoretically implies that, for any investment-attraction economy to have effective investment policy framework depends on the following

1. High value of Tobin's-q of the Economy
2. Corporate Tax measurement
3. Stabilize price of public good from purchase capital
4. High treasury rate of return with respect to time
5. Real inflationary aspiring to zero rate

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