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The Theory of Catallactics: It's Misapplication in Monetary Policy of Developing Economies and Consequences

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ABSTRACT

It is generally believed, in our lack of in-depth understanding of the contemporary operating functioning of the economic market largely in developing and under developed countries, to establish an accurate theoretical functioning as monetary economists, to guide the approach of effective policy design, is affecting the progressive development, resulting in its inability to address desired economic growth per its legal mandate as a complimentary to fiscal policy, in its delivery as a Central Bank. As well, become an institutional guiding path for other related financial institutions to play their active role in the financial system. The study thereby seeks to objectively establish the major phenomenon to be considered as factors to enhance monetary policy instrument design, and application in such a fragile economic system.

Keywords: monetary economics, monetary policy, fiscal policy, macroeconomics, development theory

Jel Classification: E2, E5, E24, E26, E52, E58

1. BACKGROUND & INTRODUCTION

It is theoretically argued that the monetary policy transmission mechanism, is the “channels” through which the monetary policy actions by the Central Bank, impact the general economic activities and price in particular (Kuttner and Mosser 2002; Ireland, 2006). The study thereby posits, monetary policies drawn-out of a careless use of imaginary construction out of the direct and indirect exchange activities of the market, result to a policy application, which is strange to the realities of the market activities, as a result create a fallacious economic predictive indicators towards the future decision making of the market, hence, frustrate strategic employment of capital and labour by Enterprise owners to the development of such economies, when factors of fiscal policy remain constant. Walsh (2017) submit, a time-consistent policy is the one in which, the planned response to new information remains the optimal response, once the new information arrives. Therefore monetary policy, time inconsistency requires the need to examine the incentives and constraints faced by a Central Bank, while acknowledging that policy impact often depends upon public’s expectations. The theory of monetary policy transmission mechanism defines seven major channels that are observed to be effective for an economy to experience policy-effects, which are;

- i. Interest rate
- ii. Credit / Bank Lending
- iii. Exchange Rate
- iv. Asset Prices
- v. Expectations
- vi. Confidence
- vii. Risk-Taking

With this, Blanchard (2003), focusing on interest rate as a major channel for policy transmission mechanism comparable to the others, asserted that monetary policy can have large and long lasting effects on real interest rates with its implications on economic activities; during a conference paper presentation in honour of James Tobin at MIT School, and went ahead to state, there is large theoretical and empirical based literature that supports interest rate, inflation and innovation in money activities towards economic growth, which to him, their econometric result were unconvincing. And finally suggested as monetarist, it requires a stretch of an extra mile in the direction of rethinking of fiscal policy, to enable a structured redesign of monetary policy to play the role as automatic stabilizer. He made this argument in favour of the developed economy, which he further submitted that most of their instituted fiscal policy for economic growth is suffering from schizophrenia, hence, the difficulty to observe the complimentary impact of the applied monetary policy. Audert (2017), submit on the subject of interest rate by predicating that, money expansion tends to increase real income, which results in the raise of inflation and lower real interest rate. However, not everyone is equally affected by these changes, while some agents' benefits disproportionately, and conversely, some lose in relative terms, and concluded that the unexpected inflation revalues nominal balance sheets, with nominal creditors losing and nominal debtors gaining. Continuing with channels for monetary policy transmission mechanism, Morris & Sellon Jr. (1995), arguing on Bank Credit or lending as another channel, they indicated, the view that bank lending plays a special role in the transmission mechanism is not a new idea, it has been part of monetary debate for over forty (40) years. On records Bernanke and Blinder (1988) assert, "Credit view" as a new line of research has explored how credit market imperfections may not only create a credit channel for money policy, but also may make disruptions in credit availability, a source of fluctuations in economic activity.

Acknowledging how Asset and its pricing act as a channel in monetary policy transmission (Bernanke & Blinder, 1992; Romer & Romer, 1990) indicated that Banks alter their assets and liability during periods of monetary restraint, which was supported by stylized facts on bank portfolio behaviour. Mishkin (2001), further complemented this argument on the relevancy of asset pricing on monetary policy transmission effects as an influence in investment and consumption decisions but rather disagreed to the circumstance whereby certain assets pricing are made as sole targets of monetary policy. Alessi and Kerssenfischer (2016), stepped further to deepen the theory of asset pricing as monetary policy transmission, by analyzing mainstream macroeconomic theory products on a rapid response to monetary policy shocks, by using a structured model for a large euro area dataset, which Audert (2017) finally pose that, when real interest rate falls, it increases financial assets price. In the instance of how Exchange Rate is used as a channel in monetary policy transmission mechanism, Smets & Wouters (1999), presented evidence of the role of exchange rate in monetary transmission mechanism in a relatively open economy by estimating an identified VAR model using a quarterly data series of Germany over the post-Bretton Woods era and findings were exemplary. The concern that ‘Confidence’ is equally as a strong channel in monetary policy transmission effects, which has suffered varied opinion debate on both sides of the scholarly bench, was currently sealed by the argument of Bondt (2015), justifying with empirical evidence about the confidence of borrowers as well as of lenders being an important channel through which monetary policy measures traditionally; using short-term interest rate and Euro-system balance sheet, which the findings depict a strong correlation to economic growth. As expectation is classified as a known policy transmission mechanism, Walsh (2017), posits that, to predict how policy affects the economy, one needs to quickly go to the drawing board to understand, how expectations will be responded by the

market or appreciate the market response rate. Angeloni et al (2009) observed, Central Banking no longer is what is used to be. Until 2007, Central Banks worldwide followed a well-established paradigm, composed of three fundamental elements as (i) Single focus (ii) independent (iii) sort of assignment. Which the 'Single focus' tenet stipulate that, monetary policy should aim solely at maintaining price stability. The second tenet, which is 'independent', requires the central bank not to be influenced in their decisions by governments, businesses, trade unions or others. The last tenet themed as 'Sort of Assignment', define the Central Bank not to be distracted by concerns from other policy domains. Appreciating the various arguments on both the strength and weakness of the Central Bank and its functioning on policy wise of contemporary times, which in the formulation of the Barro and Gordon model (1983b), it submit that, the Central Bank's objective is to maximize the expected value of the economy's natural rate of output. As a result, this very paper thereby calls for a reasonable probing of the developing economy, which mostly lacks a realistic design of a fiscal policy that responds effectively to endogenous economic market dynamics. Taken a cue from Blanchard's assertion, which indicates the necessity to re-examine the definition and scope of monetary policy to embrace contemporary challenges of economic growth and development, it will be reasonable to interrogate the historic foundation of monetary policy, which argumentatively, could be expressed as, all actions of government, central banks and other public authorities that influence the quality of money and bank credit. The above narration, thereby, embraces policies relating to such things as choice of the nation's monetary standard; determination of the value of the monetary unit in terms of metal or foreign currencies; determination of the types and amounts of the government's own monetary issues; establishment of a central banking system and determination of its powers and rules for its operation; and policies concerning the establishment, regulation of commercial banks and

other related financial institutions. Delving deeper into the element of monetary policy, it will be observed that, “Like all economic policies, monetary policy has three interrelated elements, which are;

- i. Selection of objectives
- ii. Implementation
- iii. Implicit theory of the relationships between actions and effects.

All these three elements, present problems of choice and are continuing subjects of controversy. Even though the paper acknowledges the large body of literature that argue in favour of incentives and constraint Central Banks faces, when setting their policy instrument, Kydland and Prescott (1977) asserted, the issue of Central Bank credibility and the ability to pre-commit to policies, committing in advance to take specific policy actions, the Central Banks as an Institution does realize they are faced with the incentives and constraint to act in ways that are inconsistent with their earlier plans and announcements. Furthermore, considering the exact problem, which the paper seeks to address, it has become intellectually appropriate to briefly diagnose the evolution of monetary policy and its related objectives. Monetary policy, in the modern sense, is a deliberate and continuous management of the money supply to promote selected social and economic objectives, which is largely a product of the twentieth century, especially the decades since World War (I). In the earlier period, when most countries were on either gold or a bimetallic standard, the primary and overriding objective of monetary policy was to maintain and redeem the ability of the nation’s money in the primary metal, both domestically and internationally. A decline of the nation’s metallic reserves to dangerously low level, or any other threat to redeem ability, became a signal for monetary and credit restriction, to avoid whatever might be its other economic effects. When redeem ability seemed secured, monetary policy was used to promote other objectives—to

deal with panics, crises, and other credit stringencies and even to expand money somewhat when businesses were depressed. But such intervention was sporadic rather than continuous and its purposes were limited rather than ambitious. The international gold standard of the pre-1914 period was not purely automatic, but it was managed only marginally. Many forces have contributed to the change and growth of monetary policy since the World War (I). One set of forces includes the breakdown of the international gold standard and other changes and crises in monetary system's—inflation during and following World War (I) and the long period of suspension of gold redeem ability in most countries, the change and insecure nature of the gold and gold exchange standards re-established in the 1920s, the renewed breakdown of gold standards during the great depression of the 1930s, and world-wide inflation during and following World War (II). All these had profound effects on attitudes toward monetary policy. Both countries that had too little gold and those that had too much shifted to the view that, the state of their gold reserves was no longer an adequate guide to policy and that new objectives and guides should be developed. Monetary actions became increasingly less sporadic, limited, more continuous and ambitious in scope. The goal of this paper, is to stress on the extent of standard deviation of the originally intended theoretical proposition of the monetary policy for every economy, especially with much emphasis on developing economy using the continent of Africa as a study focus, through the services of its Central Banks and attempt to re-introduce an appropriate model, as a consideration for policy formulation guide, in the aspect of money supply, inflation rate, interest rate targeting, to ensure price stability, general trust in currency, and achieve the below indicators as its original theoretical priority;

- i. Economic growth and Stability
- ii. Lower Unemployment

- iii. Maintain predictable Exchange rate, nominally

Which the paper will narrow its argument on the first two thematic, which are economic growth and stability, and lower unemployment, observed to be more of a challenge as accuracy in theoretical-application towards macroeconomics management of contemporary time in fragile economies.

2. THEORETICALS AND EMPIRICAL OBSERVATION

Poole (1993) “The notion that Central Banks can provide a low-cost, over-the-counter ‘aspirein’ that will alleviate almost any ill that society faces is no longer credible.” The submission of this paper is to empirically justify the causing factors, resulting in policy incredibility, especially in developing economies and alternative solutions to resolve it. (Meltzer 1993, p.233) emphasize on “the role of judgment and discretion in the conduct of monetary policy”. Which complements the argument of this paper on the call for the Central Banks to be more innovative in dispensing its monetary policy taken into consideration its jurisdictional territory of operation. This will address the gap between the monetary policy and its impact on economic development. This requires analyzing factors beyond the conventional theoretical template adopted contemporary by the Central Banks in Africa for policy development but rather be critical in the investigation of the market phenomenon, to construct an applied theoretical formulae relevant to developing economy in the construct of its monetary policy, paving the pathway in making the good use of majority of its labour force, not ignoring the facts that majority of the active labour force in such economies are found in the informal and semi-formal sectors as well as having a literary malfunctioning of its micro economy and finally most of such economy is engineered towards the state as an organ, being the higher recruiter of human resource capacity, with most of the State enterprise unable to meet modern technological advancement and innovation of the twenty-first century. The reality is,

most of the State Enterprises and their status of performance in response to recruitment, suggest a limited capacity for high-level demand of employable skill. The consequence is, the new channeling-out graduates, are becoming redundant. It is observed that the modern global ecology of innovation and technological advancement highly favours the private sector that has the prowess and capital resource to drive development, with government narrowing its focus in regulation and policy credibility, contrarily stance to the above submission of any fragile economic system, causes economy retrogression. Furthermore, observing a trend of government of developing economies, lack of sufficient efforts to raise domestic funds to support a lot of infrastructural, technological and innovational desires for social interest, which in most circumstances government forceful ability to drive domestic infrastructural funding, results in the Central Bank responding to negative spillover effects, on the basis of financing excessive budget deficits, thereby becoming unhealthy to a strong aspiring economy. The scope of theory and literature review of this paper, is examined under the following subtitles, to establish the grounds for further theorization under a posteriori case studies in the context of Africa.

- i. Market phenomenon
- ii. Scarcity and value
- iii. Empirical observation of policy effects and employment

I. Market Phenomenon

“There have never been any doubts and uncertainties about the scope of economic science. Ever since, intellectuals, have been eager for a systematic study of economics or political economy, all have agreed that, it is the task of this branch of knowledge, to investigate the market phenomena” Mises (1920|1973). To define the market phenomena, simple equations below could be derived,

which is expected to guide the realistic application of monetary policy to its targeted market, and achieve the intended result drawn out from the monetary policy objective in the perspective of Ludwig Von Mises.

$$\Phi = (U + \varphi) \dots \dots \dots Eq. (1)$$

$$\varphi = (M + \varepsilon) \dots \dots \dots Eq. (2)$$

Derivation:

$$\Phi = (U + M + \varepsilon) \dots \dots \dots Eq. (3)$$

Φ -----Market Phenomenon

U ----- Market Exchange

φ ----- Catallactics

M -----Money Price

ε -----Economic Calculation

The following are critical questions that arise, when analyzing the equations established above:

1. Is the dynamics of ‘market exchange’ in the context of developing and underdeveloped economy well understood for accuracy in monetary policy instrument and application?
2. The premise, upon which the economic calculation is designed, in the context of economic market forecasting in developing and underdeveloped countries, accurate?
3. The structural operating mechanism of the market phenomenon in Africa, understood by its Central Banks to guide monetary policy applications?

The above outlined questions, if not accurately addressed in respect to Eq.3 above, will definitely result in the default of objectives from policy application, which this paper argue to be the major contributing factor to failures encountered by economic development project initiatives, instituted by the World Bank and its allies for Africa, as well as other failures in scientific predictions in political economic development in Africa over the past two-to-three decades. Experience of today and historic fact vindicate these assertions according to (Ayittey, 2002), are the causes of failure of World Bank policies in Africa. The paper demands that the term ‘Value’ on goods and nominal unit, need to be critically reviewed to lay an accurate foundation of the theoretical deductions of this study, not ignoring the fact that, the theory governing the term ‘Value’ has created complex definitions in very complicated circumstances, historically, within the Taxonomy of Economics. But will adopt one of its varied definitions, very unanimous to the spirit and content of this paper. [Value] is an intrinsic quality inherent in things and not merely the expression of various people’s eagerness to acquire those things (Mises, 1920); therefore, the definition of Value according to Mises could be classified as;

[a] Intrinsic quality in things

[b] People’s eagerness to acquire them

Theoretically, expression [a] and [b], trigger and engineer a successful market exchange. Which was submitted by Ludwig Von Mises as the priority of every action man to acquire ‘material’ and ‘ideal’ things. I hereby postulate per the evidences of this study that, for any monetary policy to gain credibility in application, the basis of its enactment should be deeply rooted in the endogenous exchange market by finding out, what ‘Value’ drives the momentum of market exchange. Hogan (2006) argue in response to people's eagerness to acquire things, he asserted, ‘Means-Value’ is object or action, while ‘Ends-Value’ is the feeling associated with the means value. Anthony

(1987) deeply elucidates the Value-argument by submitting that, we want or seek certain things or conditions in life (Means-Value) because of the State we think, they will give us (Ends-Value). This exposes, the uniqueness of every fiscal exchange market behavioural action, because beyond the intrinsic quality contained in a material, the momentum drive of any exchange of the market, operate in the perimeter of “cultural-psyche” of the market. Thereby, a theoretical understanding of the ‘Cultural-psyche’ of any endogenous market, is a relevant tool guide for monetary policy instrument development. I hereby define [Cultural Psyche of a Market] as the traditional thinking or behaviour of the market, which drives the desire of people to demand a particular goods or services at a certain period of time. It must be noted that when a ‘cultural-psyche’ of a market is imaginary constructed, devoid of theoretical guide, the aftermath of the policy application work contrary to expected result and effects, and this as a posteriori deduction, has contributed largely, to a technical displacement of most policy applications and its related instrument in fragile economies, creating a consequence whereby majority of its labour force are disconnected to relate meaningfully to the dynamics of the market exchange, hence, result into a Sisyphean-economic-complex as market phenomenon, resulting in a retrogression of economic growth.

II. ‘Scarcity’ and ‘Value’ of Goods & Services

Acting and thinking man, is the product of a universe of Scarcity, in which whatever wellbeing can be attained, is the price of toil and trouble of conduct, popularly called Economics (Mises, 1920). Scarcity becoming a major challenge of man to address; demands a compulsory knowledge of economics to minimize the effect and impact on his welfare and development. This never relates any of my submitted arguments herein to Karl Marx’s school of thought, Marx New World Encyclopedia (1948), which believes that scarcity could forever be eradicated by the abolition of private property. In my perspective, such an intellectual opinion is radically ambitious and does

not hold a solution to the problem under debate. Rather argue that, for ‘scarcity’ as a problem to be turned into opportunity in any market phenomenon, the current relationship law, governing “Scarcity effects” and “Value of Demand” in goods and services as directly proportional in macroeconomic theory, thereby guiding policy instructions of the monetary market, requires an innovative re-construction of such market model, using a unique factorial index to invoke a behavioral change to this kind of market relation. Therefore, the below econometric formulae, seek to establish and propose a model as an approach to circumvent the negative impact of ‘scarcity effects’ into a profitable economic calculation, towards any operative market. Current market behaviour to Valuable-goods-in-demand is directly proportional to Scarcity effects, therefore, the result is a consequence of rise in price, stagnancy or retrogression in economic growth and welfare support.

All things being equal, it is expected that;

$$\dot{S}_t^{n+1} \propto \dot{V}_t^{n+1} \dots \dots \dots \text{Eq. (x1)}$$

While;

\dot{S} Scarcity Effects

\dot{V} Value -of-Demand

The above model, is the current existing theory, governing the relation of ‘scarcity effects’ and ‘Value-of- demand’ in the market, as an orthodoxy practice, making ‘scarcity effects’ as economic problem, and evidences suggest, it could be circumvented to produce a new model, which will turn scarcity as economic-development-opportunity cum reduction of unemployment, in a condition that modern technological advancement, factor in labour recruitment to become the central-

developmental system-unit, with ‘Scarcity effect’ operating in inversely proportional to ‘Value-of-Demand’, through a unique input of factorial index as stated earlier.

All things being equal, it is expected, the market under a factorial index force, will be governed by the below model instead of the formal;

$$\dot{V}_t^{n+1} \propto \left(\frac{1}{\dot{s}_t^{n+1}}\right) \dots \text{Eq. (x2)}$$

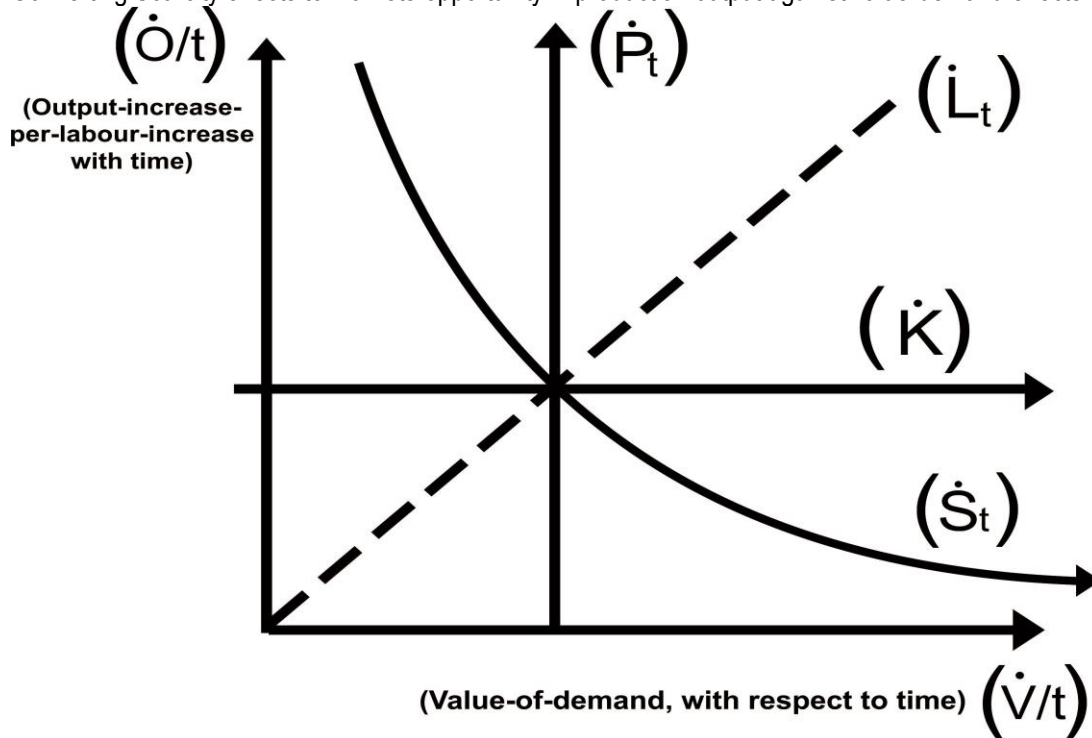
$$\dot{V}_t^{n+1} = \dot{K} \left[\dot{L}_t^{n+1} \left(\frac{1}{\dot{s}_t^{n+1}}\right) + (\dot{P}_t) \right] \dots \text{Eq. (x3)}$$

- \dot{L}Labour function of the fiscal space
- \dot{K}Accessibility to low cost of nominal capital
- \dot{P}Price Stability of the Market
- \dot{O}Production Increase-per-labour increase

This theoretical model further argue that, any monetary policy instrument which ignores efficiency of labour computation into the economic calculation, especially within fragile economies, having over 70% of the informal and semi-formal sector, being largely the contributive factor to the economic production, will suffer from real economic growth and reasonable, social welfare progression. Secondly, ignoring to take a critical look into the accessibility of low cost of capital for production to the informal sector of the market by designing a model to recognize and incorporating the activities of such informal sector mechanism, will always affect the Central Bank policy credibility, as in forecasting to the future of its market, within its operational jurisdiction and possibly, the business of currency stabilization as well as appreciation, thereof.

FX.1

Converting Scarcity effects to markets-opportunity in production output against value-demand effects



Panel of monetary policy instrument model to engineer realistic economic development in fragile economy
Source: Senzu, 2018.

The model, strictly emphasizes on a critical look into the word ‘Efficiency-of-labour’ as the equation employs. When a fragile economy turns to measure efficiency-of-labour based on quality education solely, for the employment of capital to productivity in market computation, without a stratification of its market system, it exposes such economy to the curve of development retrogression. The retrogression of development emerges at a point when there is a disconnection existing between a potential full utilization of labour in an economy towards a growing curve of a ‘Value-of –demand’. Secondly, production of human resource capital by the Universities of a fragile economy, lacking the characteristics to relate resourcefully to such developing economies due to lack of deep understanding of the “Cultural-psyche” of such

endogenous market system, hereby result in the advancement of labour-redundancy-ecosystem, which is observed to be an equal contributor to economic retrogression.

III. Empirical Observation

This paper goes further, beyond theoretical deduction to establish empirical justification, on how most of the monetary policy in the developing economy has lost credibility, but operating as a kind of orthodoxy services as a convention, by which the Central Bank quarterly, some half of the year, engages the media on policy press release as a formality, but industries and investors hardly rely on such report for valuable decisions and actions as a guide of economic activities and investment. Some selected African countries were subjected to a study focus, which were South Africa, Egypt, Kenya, Cameroon and Ghana with the assumption that, their monetary policy has some level of consistency in its delivery approach on the continent of Africa. The method of empirical examination adopted the Case Study approach, which Best & Kaln (1998), asserted, Case study probes deeply and analyzes interactions between factors that explain present status or influence in change or growth. Thus, data can be gathered in this regard through interviews or observations of the researcher. Feldman (1996) states, in contrast to a survey in which many people are studied, he argued that, case study is an in-depth study, intensive investigation of individual or small groups of people. The paper by this method, selected professionals who fall within the Social Science and Business community directly in conformity to Dudoviskiy (2016), who pose that, the use of a case-study approach, aim to analyze specific market within the boundaries of specific environment, situations or organization. A total of hundred (100) professionals were engaged in the five listed countries, selected as the sample of the population size, taken a keen interest in the submission of (Fink and Kosecott, 1998), who argued, the size of a population from which the sample of a particular size is drawn has virtually

no impact on how well a sample describe a population because the appropriate sample size is influenced by the purpose in conducting the research. I therefore summarize the empirical findings, from the field of studies, which indicate that, about 97.5% were of the view that, the policy impact of the Central Bank in their various countries was seen as insignificant comparable to the fiscal space of government actions in the manipulation of the economic market. Yet 68.9% of the population size admitted and acknowledged the Central Bank role in economic development. Strangely Kovaven (2011) research paper as a project under IMF, posits that the Ghana macroeconomic performance, that is monetary policy transmission and interest rate channel, never works in the Ghanaian economy and further argued that, such dysfunction of policy effect is likely caused by shallow financial market. It became generally evidenced from empirical works that, monetary policy in the developing economy hardly has any significant effect on the status of its employment. No correlation of monetary policy and realistic stimulation of economic growth. No direct correlation of monetary policy and stabilization of fixed exchange rate of currency. Even though countries randomly selected for this particular study, denied us of highly extensive data from the government on certain information requested, it was successful with that of the records of Ghana for analytics and interpretations, as elaborated below;

Table S1.

Data of production approach measurement to GDP of the Economy of Ghana (2010-2014) in Gh¢ millions

Details	2010	2011	2012	2013	2014
AGRICULTURE	12,909.6	14,154.8	16,668.0	20,232.0	23,278.0
Crops	9,421.6	10,649.9	12,525.0	15,742.0	18,144.0
o.w. Cocoa	1,391.6	1,995.7	1,869.0	1,981.0	2,409.0
Livestock	873.0	1,003.8	1,162.0	1,223.0	1,318.0
Forestry and Logging	1,614.2	1,549.2	1,880.0	2,019.0	2,537.0
Fishing	1,000.8	951.9	1,102.0	1,249.0	1,279.0
INDUSTRY	8,294.5	14,274.4	20,438.0	25,113.0	28,767.0

Mining and Quarrying	1,012.7	4,689.9	6,961.0	8,503.0	8,640.0
o.w. Crude Oil	177.5	3,746.3	5,649.0	7,441.0	7,793.0
Manufacturing	2,941.5	3,842.5	4,263.0	4,800.0	5,342.0
Electricity	266.0	279.7	332.0	393.0	443.0
Water and Sewerage	368.3	467.4	511.0	568.0	576.0
Construction	3,706.0	4,994.9	8,370.0	10,848.0	13,766.0
SERVICES	22,183.6	27,422.7	35,837.0	44,964.0	56,248.0
Trade; Repair of Vehicles	2,701.0	3,282.3	4,060.0	5,222.0	6,085.0
Hotels and Restaurants	2,592.8	3,007.4	3,517.0	5,256.0	6,099.0
Transport and Storage	4,578.4	5,996.9	8,041.0	10,149.0	13,351.0
Information and Communication	831.1	988.9	1,590.0	1,572.0	2,441.0
Financial and Insurance activities	2,239.9	2,465.9	3,452.0	5,885.0	9,115.0
Real Estate, Professional, Administrative & Support Service activities	1,944.8	2,590.6	3,502.0	3,485.0	3,894.0
Public Administration & Defence; Social Security	3,023.6	3,896.8	4,952.0	5,305.0	5,843.0
Education	1,876.9	2,306.6	3,101.0	3,248.0	3,883.0
Health and Social Work	673.6	728.5	921.0	956.0	1,091.0
Community, Social & Personal Service Activities	1,721.5	2,158.7	2,701.0	3,886.0	4,445.0
FISIM (Financial Intermediation Services Indirectly Measured)***	1,511.6	1,457.7	2,317.0	2,919.0	4,354.0
GROSS DOMESTIC PRODUCT at_basic_prices	41,876.1	54,394.2	70,627.0	87,390.0	103,939.0
Net indirect Taxes	4,166.0	5,422.1	4,689.0	6,026.0	9,404.0
GROSS DOMESTIC PRODUCT in_purchasers'_value	46,042.1	59,816.3	75,315.0	93,416.0	113,343.0

Source: Senzu (2015), assisted primary data from Ghana Statistical Service from 2010 to 2014

Actual contribution of the major and sub sectors to GDP (Gh¢ Million) in Ghana

Table S2.

Data of highly contributive sectors to GDP growth of Ghana's economy (2012-2014) in Ghc¢ millions

Highly contributing sectors to GDP growth	Actual Contribution in 2012 in Ghc(Million)	2012 Contribution in %	Actual Contribution in 2013 in Ghc(Million)	2013 Contribution in %	Actual Contribution in 2014 in Ghc(Million)	2014 contribution in %
Agriculture	16,668	10.70%	20,232	10.49%	23,278	10.07%
Service	35,837	23.01%	44,964	23.30%	56,248	24.33%
Industry	20,438	13.12%	25,113	13.01%	28,767	12.43%
Other minor sector combined	82,778	53.16%	102,650	53.20%	122,848	53.15%
GDP	155,721	*100%	192,959	*100%	231,141	*100%

Senzu (2015). Actual contribution of highly contributing sectors to GDP growth in Ghana

Table S3.

Data of highly contributive sectors that engaged high labour force from the economic market of Ghana (2012-2014)

Highly Contributing Sectors to GDP growth	Labour engaged from 2012 to 2014	Percentage of Labour engaged
Agriculture	59,893	0.73%
Services	2,708,796	33.12%
Industry	3,383,206	41.36%
Informal Sector	2,027,880	24.79%
Total	8,179,775	*100%

Senzu (2015). The labour force engaged by highly contributing sectors to GDP growth in Ghana

Table S4.

The GDP-growth status of Ghana's Economy from (2010-2014)

GDP growth rates

Year	GDP at current market prices	GDP at constant 2006 prices
2010	25.8	7.9
2011	29.9	14.0
2012	25.9	9.3
2013	24.0	7.3
2014	21.3	4.0

GSS (2015). GDP growth rates

With the assumption that GDP growth reflect the development status of an economy, in ceteris paribus, then Table S4 above in consensus with S1, S2 and S3 deduce that, there was a steady rise in “Service” in Ghana’s economy from 2012 to 2014, with a percentage of 23.01% in 2012 to 24.33% in 2014 as an estimate of 1.32 percentage rise in contribution to GDP growth, while Industry and Agriculture were in a decline state. Industry as at 2012 was contributing 13.12% to GDP growth and by 2014 has declined to 12.43%, as an estimate of 0.69 percentage fall.

Agriculture as at 2012 was contributing 10.70% and at the end of 2014 had declined to 10.07%, as an estimate of 0.63% percentage fall. In a comparative study to the state of GDP growth in the

same period that is 2012 to 2014 from the Table S4, there was a percentage decline of 4.6 which validates the argument of this paper, which state that, any sector of the economy performing very high in GDP contribution with no connection to the ‘cultural-psyche’ of the economic market, could not affect its GDP growth positively and sustainably. Which in this circumstance, the rise of the service sector in the detriment of the Agriculture sector performance and its related industrial impact to the Ghana’s economy, affected the sustainable macroeconomic growth. In respect to the data of Table S3, it establishes that, from 2012 to 2014, Service sector performance engaged about 33.12% of labour force, while the declining Agriculture and Industrial Sector engaged 0.73% and 41.36% of Labour force respectively within the same period. This equally agrees to the foundational argument of this paper, which state that, a highly contributing sector that fails to engage high rate of labour force through technological and innovative advancement in a developing economy will fail to cause sustainable growth in GDP. Service sector was in a steady rise, while Agricultural and Industrial sector were in a steady decline, yet industry employed about 8.24% labour force higher than the service sector. This confirms, to some extent the argumentative basis of this paper, on a fragile economy that places a special focus on services, as against industrial production, generally generate negative impact on the development process of the economy, if all running indicators of the fragile economy remain constant, and thereby create less employment opportunities. This substantiates the evidential findings of the consequence of a monetary policy instrument, which does undermine relevant sectors linked to a sustainable GDP growth of an economy, loses the capacity to reduce unemployment constraints of the market.

CONCLUSION

The paper in its conclusion predicate that, it is very relevant for Central Banks of the developing economies to have a quality understanding of the ‘Cultural-psyche’ of the Economic market within its operational jurisdiction and appreciate its behavioural patterns in connections to the various sectors contribution to the GDP-growth of the economy, to guide in a sound scientific construction of its policy and related instruments, the only means to project the Central Banks as a respectable institutions in the business of fragile economic development, devoid from a status assume to be a ceremonial institutions in the shadow of political manipulations of the fiscal space of the economic market. The paper finally submits succinctly that, on a premise of goods and services utility in any developing economy ‘scarcity effect’, which creates a challenge of the economic market, requires an effective established model above termed as [Eq.x3] to serve as a policy design guide, and facilitate quality high rate employment opportunity, which will facilitate an increase in out-put of production in the economy, if only, the following conditions of the market are observed: Low inflation, price stability and low cost of capital accessibility to Enterprise owners, to steer skill employment as a critical central unit of the technological advancement and innovation, and promote increase of quality production in the chosen sector of the economy, which will trigger sustainable GDP growth of the country.

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