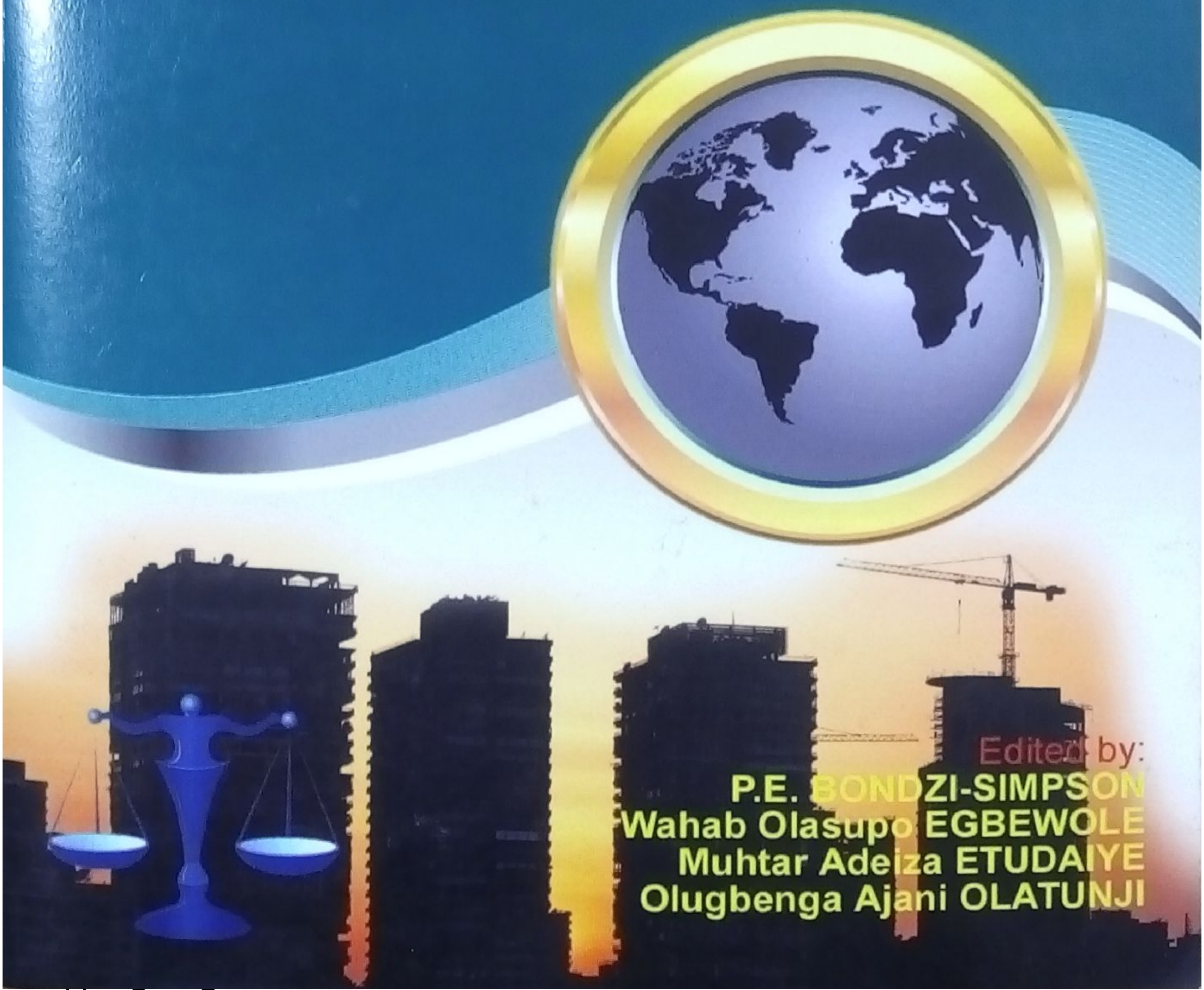
Law and Sustainable Development in Africa



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FINANCIAL INNOVATION AND SUSTAINABLE DEVELOPMENT IN THE NIGERIAN FINANCIAL SYSTEM

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Introduction

The World Commission on Environment and Development (1987) defines sustainable development as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This development incorporates both social and economic capital and points out that it is the needs which are basic and essential that are important. The definition also implies that the present generation is expected to leave something for the future generation to have for development rather than leave nothing for them. Thus it is believed that the needs of the future will be met and at the same time, satisfy the needs of the present generation. This effort requires that there is a balance between the social, economic and environmental objectives while deciding on what to do today. The economic aspect of sustainable development focuses on the determination of how limited resources that are used in improving peoples' lives are distributed and utilized which ultimately has an impact on the living standard of the populace.

Studies on sustainable development have shown that there is an increased need for investment in developing countries and the need for an efficient use of financial resources. To achieve this, it has been suggested that policies which promotes a stable

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international economic environment be encouraged such as having a stable interest and exchange rate regime and stimulation of savings amongst other macro-economic conditions.

Policies that affect trade and the flow of global finances have a major impact/influence on sustainable development of countries worldwide in general and developing countries in particular. Developing countries like Nigeria are weighed down with internal indebtedness, inadequate development finance, barriers to Northern markets and falling prices for the commodities which dominate many economies in term of production, employment and export earnings. The above shortcomings of developing nations could be reduced to the barest minimal if there is an enabling environment and good financial policies. This is because environment and financial policies should be mutually supportive to sustainable development.

Sustainable development requires encouraging innovation and efficient use of financial resources (Sec 1, chap 2 of Agenda 21). This implies that capital plays a substantial part in achieving the economic objective of sustainable development. The role of the financial policies needs to be clarified in all sectors of the economy of the nation. Therefore, financial institution should be encouraged to play a constructive role to induce sustainable development through financial innovation. The operation of the financial system involves real resources cost such as labour, materials and capital employed by financial intermediaries (e.g. banks, insurance companies etc) and by financial facilitators like stock brokers, market makers, financial adviser (Yun, 2003). It is against this background that this research work intends to investigate financial innovation adopted by Nigerian financial institutions in order to promote sustainable development in the country.

Financial Innovation

What is financial innovation? The word "innovate" is defined in the Webster's Collegiate Dictionary (1998) as "to introduce as or as if new." Also the word "innovation" is used by economists in an expansive fashion to describe shocks to the economy as well as the responses to these shocks (Tufano, 2002). Scholars categorise innovations into two -product and process innovations. Product innovations are exemplified by new derivative contracts, new corporate securities or new forms of pooled investment products. On the other hand process innovations are typified by new means of distributing securities, processing transactions or pricing transactions (Tufano, 2002). In the real sense, the two types of innovation are linked and interwoven. Hence, researchers find it difficult to demarcate the tin line of difference between them (Tufano, 2002).

Innovation is seen to play an important role in economic development through the process of developing new products, new processes and an increase in productivity. Merton (1992) defines innovation as "a central force driving the financial system towards greater economic efficiency". The financial system is described as a system that facilitates the transfer of resources from surplus units to deficit units through the promotion of efficient capital allocation that further translates into investment which ultimately has a positive effect on economic growth. Nurudeen (2009) asserts that the transfer of funds from surplus to deficit units is used for productive purposes which encourage investment and thus increase production. This, according to the study, has the effect of increasing economic growth.

Generally, innovation includes the acts of invention and diffusion of new products, services or idea (Roger, 1983). Most innovations are evolutionary adoptions of prior products and services (Tufano, 1989). From this angle, it could be said that almost nothing is completely "new" and the degree of newness is inherently subjective (Tirole 1988).

Having understood the meaning and concept of innovation, it is apposite to now ask the question: what is financial innovation?

Financial innovation is viewed by scholars as an ongoing process whereby the individual, enterprise, business or company tries to differentiate its products and services while responding to both sudden and gradual changes in the economy to meet its customers' demand (Tufano, 2002; Silber 1975). Financial economists consider few types of product of some of financial institutions as financial product. However, if going by the above definition in which "changes" is inclusive, then it means that changes in life are essential part of business, environment, policies and diversity of business practice. Therefore, naturally, more items are embedded in financial innovation.

These changes include innovations in technology, risk transfer, credit and equity generation as well as increased available credit for borrowers and given banks new and less costly ways to raise equity capital. It should be noted that time period is an inherent characteristic of finance innovation -this includes uncertainties about future states of the world that generate risks.

From this analogy, financial innovation can be defined as the act of creating and then popularising new financial instruments as well as new financial technologies, institutions and market. Theoretically, financial innovation is classified into both institutional, process and product. These are further discussed below.

1. *Institutional Innovations*

This institutional financial innovation relates to the creation of new types of financial firms (such as credit card firm, discounting booking firm, internet banking etc).

2. *Process innovations*

The process financial innovations relate to new ways of doing financial business. This process includes online banking, phone banking and new ways of implementing information technology.

3. *Product Innovation*

The product financial innovation relates to new products such as derivatives, securities assets, foreign currency, mortgages and the likes. Most academic writing on innovation normally adopts a functional approach to classify products (Metlon 1992). Hence, rather than grouping products by their names or features authors classifies them by the function they serve.

When Does Financial Innovation Arise?

"If the world were free of all imperfections like taxes, policies, regulations, information asymmetries, transaction costs, and moral hazard and if markets were complete in the sense that existing securities spanned all states of natures, we could arrive at an M&M such as corollary regarding financial innovation" (Tufano, 2002). In this respect, financial innovations would benefit neither private parties nor society at large and would simply be neutral mutations (Tufano, 2002; 1985). It is against this background that scholars attempt to examine how various "imperfections" and changes in these imperfections stimulate financial innovation (Tufano, 2002). These imperfections prevent participants in the economy from efficiently obtaining the functions they need from the financial system. However, the possibilities of new financial product, service and instruments which can better satisfy financial system participants' demands are always present and constant.

Functions of Innovations

Mertor (1992) in his work states six functions that can be derived from financial system (Tufano, 2002). These functions are (1) moving funds across time and space; (2) pooling of funds; (3) managing risk; (4) extracting information to support decision-making; (5) addressing moral hazard and asymmetric information problems; and (6) facilitating the sale of purchase of goods and services through a payment system. Generally, different scholars view financial system differently. For example Finnerty (1992) identified a set of functions, two of which closely relate to Mertor's functions of financial innovation. The first function relates to Mertor's reallocation of risk and reduction of agency cost. While the second is an amalgam of Mertor's movement of funds and pooling functions. In tandem with this is the submission of BIS (1986). BIS (1986) views financial system function slightly different from the earlier mentioned scholars. According to BIS, financial innovation functions are focused on transfer of risks (both price and credit), the enhancement of liquidity and the generation of funds to support enterprises (through credit and equity). Therefore, each author assumes that financial innovation functions according to his perception and the angle at which each author examined.

As it is, there is no single commonly accepted and unique taxonomy of function of financial innovation adopted. No functional scheme could accommodate the complication of a single innovation since a single innovation is likely to address multiple functions (Tufano, 2002). However, going by Mertor's functional scheme, asset securitization invokes at least three functions and they are pools at various futures promises, modify risk profiles through diversification, and moves funds across time and space. If functions represent timeless demands put upon financial systems then why do we observe innovation? Response to this poser makes some authors to adopt a static framework, where no attempt is made to explain the timing of the innovation. Other authors adopt a dynamic framework, where innovations reflect responses to changes in the environment, and the timing of the innovation mirror this change (Tufano, 2002, 1997, 1995). The following points answer the question why do innovations arise:

a. ***Innovation exists to complete inherently incomplete markets***

In incomplete markets parties are not able to move funds freely across time and space, or to manage risk. Grinblatt and Longstaff (2000); Allen and Gale (1998); Duffie and Rahi (1995); and Black (1986) explain market incompleteness and innovation. Longstaff (2000) submits that investors create new 'STRIPS' to make market more complete. Allen and Gale (1998) point out that those short sales restrictions may serve as market incompleteness which in turn motivates innovation by parties seeking to share risk. The study further explains that sometimes business organization provides an idea or product to meet the need of special demand and make such product uncommon (Partney, 1997). While in the case of Duffie and Rahi (1995) the study established conditions under which innovation would occur in equilibrium in incomplete market.

b. *Innovation persists to address inherent agency concerns and information asymmetric*

In an organization there is more than one interest group because stakeholders of an organization are made up of investors (capital providers) and manager appointed as steward of the capital provider resources. In line with the above submission, there are different groups with different interests to protect. Sometimes there is a conflict of interest between these groups. On the other hand there is a problem of information asymmetric between informed insiders and uninformed outsiders. Ross explains the issue with agency theory. While considering the reasons for innovation, Ross (1989) examines and explains financial innovation with the help of agency theory. He found out that both stakeholders are placed in the right place with financial innovation under agency consideration (Tufano, 2002). The study further stressed that agency consideration interact with marketing costs to produce innovation at a reasonable cost.

Addressing the issue of information asymmetric has led to a number of innovations. It has been observed that firms disclosed little and creditable financial information (Holland, 2009; Tufano, 2002). Disclosure of reasonable quantity and quality financial information helps assists the market force and governmental policies to play major role in controlling both the quantity and quality which thereby in turn lower the cost of information. It is further observed that early innovations tend to substitute for the use of costly information, while later innovations capitalized on its lower cost (Tufano, 2002).

c. *Innovation exists so that parties can minimise transaction, search or marketing cost*

Many of the process innovations in the payment systems technologies are aimed at lowering transaction costs. For example, ATMs, Smart Cards, ACH technologies and many other new businesses are legitimate financial innovations that seek to dramatically lower the sheer costs of processing transactions. By estimates these innovations have the potential to lower the cost of transaction by a factor of over 100 (Tufano, 2002). For example, by one estimate, a teller-assisted transaction cost over N10 (Ten Naira) and the same transaction is executed by internet facility costing only N1 (one Naira) (The Economist, online finance survey, 2000).

d. *Innovation is response to taxes and regulation*

Changes in taxes and regulation are also credited with stimulating innovations (Tufano, 2002). Kane (1986) identifies "regulatory dialectic" as a major source of innovations. Innovation responds to regulatory constraints, which in turn are adjusted in reaction to these innovations. For instance banks capital requirements could be a good example of regulation that turn to innovation. This situation was recently witnessed by Nigerian Banks where Central Bank of Nigeria releases an order of minimum capital based expected of the Nigerian Banks. This situation led to series of innovation in the banking system such as acquisition, amalgamation and merger of banks. These are intended to meet the capital-based requirement and at the same time to become stronger. Capital rates and certain preferred stocks that qualified as "capital" to bank regulators are also examples of regulatory –induced innovations (Duffie and Rahi, 1985).

e. *Increasing globalization and risk motivate innovation*

Some writers on innovation consider globalization and increasing volatility as drivers of innovation. In a globalized world, firms, investors and governments are exposed to new risks, and innovations help them manage these risks. Some of the authors that point out that increasing volatility as a stimulus to innovation are Smith, Smithson and Wilford (1990). They opined that increase in the volatility of interest rate, exchange rates and commodity prices are indices of innovation. They, therefore, draw a link between this increase in riskiness and financial innovation.

f. *Technological shocks stimulate innovation*

Information technology and improvement in telecommunication and internet have facilitated a number of innovations (Tufano, 2002; White, 2000). Development of numerical analyses and stimulation, hardware that enables faster processing and internet are all elements that support new system of conducting businesses that seek to provide customers with advance products and services (White, 2000). Innovation includes not only inventing but also the processes of the diffusion or adoption of the adoption. Empirical studies of adoption of financial innovation have focused on the introduction of automated teller machine. Some of these studies include the work of (Hannan and McDowell, 1984: 1987); Saloner and Stepherd, 1995); Small business credit scoring by Akharein; and Frame and White, 2001. Others include Patent work of (Lerner, 2002); off-balance sheet activities of banks (Molyneux and Shamroukh, 1996); and corporate security innovation by Tufano, 1989.

Impact of Financial Innovation on Sustainable Development

Scholars on innovation acknowledge that innovation affect society in two major ways (positive and negative). For example, Merton (1992) avers that financial innovation is the "engine" driving the financial system towards its goals of improving the performance of "real economy". He uses USA as an example and portends that USA national mortgage market, the development of international markets for financial derivatives and the growth of mutual fund, and investment industries are good examples where innovation has produced enormous social welfare gains in USA.

On the other hand, Miller (1991) refutes the contention that innovations have increased market volatility and then argues strongly that an attempt to regulate innovation will be counterproductive. According to him, the social welfare implication of financial innovation is still questionable because it is an open issue in the literature (Tufano, 2002). Hence, there is still the need to apply advance technology from the "new" industrial organization literature to estimate the supply and demand curves and to estimate the social welfare impacts of financial innovation if the necessary data needs to be found (Tufano, 2002).

Financial Innovation and Sustainable Development in Nigeria

Although the concept of financial innovation and sustainable development in the Nigerian context is relatively new, the financial system (the regulators and operators) has tried to establish a link between the two concepts i.e. financial innovation and sustainable development. Policies aimed at encouraging innovation to promote sustainable development are being encouraged and have been established by the regulatory authorities. Some of these include:

i. The establishment of the Asset Management Corporation of Nigeria (AMCON) in 2010. AMCON according to the Act establishing it was created to stabilize, revitalize and revive the financial system by efficiently resolving the non-performing loans (NPL) assets of the banks in the Nigerian economy. This came in the wake of the discovery of a large amount of NPL in the books of the banks which crippled their function to give out new credit to businesses in the economy. By buying up the NPL assets of the banks, the banks will not waste their time chasing bad loans but will rather focus on the provision of credit in order to grow the economy.

ii. The introduction of the Central Bank of Nigeria cashless economic policy. This has the effect of promoting the successful implementation of monetary policy (MP) objectives such as the attainment of a stable and sustainable economic growth. One of the problems of the implementation of MP objectives in Nigeria has been identified to be the cash dominant nature of transactions. When transactions are carried out with the use of debit and credit cards, online banking etc, monetary control is better managed and the transmission mechanism of monetary policy objectives becomes more efficient and effective.

iii. Agent Banking: This, according to Enhancing Financial Innovation and Access (EFInA)[1], is the delivery of financial

[1] Enhancing Financial Innovation & Access (EFInA), is a financial sector development organization that promotes financial inclusion in Nigeria.

services outside the conventional bank branches which entails the use of non-bank retail outlets that relies on technologies such as point-of-sale (POS) terminals, or mobile phones for real time transaction processing. This has the effect of enhancing financial inclusion by providing conventional financial services to a larger part of the population (disadvantaged and low income segments) who ordinarily will not have access to such due to the low banking habit of the citizenry and at affordable costs.

iv. The introduction of derivatives market in the Nigerian financial system to hedge risks in sector. The hedging technique includes options, forwards and futures used in the foreign exchange market. This will help in boosting investors' confidence and promote foreign direct investment which in turn has the ability to promote economic growth and development. The development of a derivative market should result in a more integrated global economy.

Criticism of the Role of Financial Innovation in Sustainable Development

Even though the role of financial innovation in sustainable development is largely seen to be on the positive side, arguments have come up against the role financial innovation plays in the attainment of sustainable development. Minsky (1992) argues that 'booms and burst' are an intrinsic characteristic of an economy where financial innovation is driven by market forces such that booms which are linked to financial innovation will inevitably lead to a subsequent collapse (burst). The recent financial crisis drew attention to the role of financial innovation in introducing instability and deep recession in an economy. The boom and burst cycle can be seen in the development and subsequent collapse in the value of subprime mortgages and other various forms of hedging instruments such as asset backed securities, collateralized debt obligations etc. This led to losses in banks and other financial institutions in the United States of America which had a contagion effect on the rest of the global economy.

Recommendations and Conclusion

The previous scholars and writers on financial innovation have helped us to understand what financial innovation is all about and its impact on sustainable development of nations, be it developed or developing. In this piece of work, the functional aspect of sustainable development and financial innovation in the financial system in Nigeria is examined.

In most business innovations, inventions, business (idea, product, process, patent, copyrights, trades mark) are considered as financial innovations. Innovate or die is a popular saying in the business world (Sorowiecki, 2010) which in recent years has churned out a seemingly endless stream of new ways to manage capital and slice and dice risk. Today benefits of all these financial innovation help millions of people to showcase their talents, ideas and to recover from disaster to build stronger communities (Kanani, 2010; Sorowieck, 2010; Lerner and Tufano 2011).

Financial Innovation is often considered and praised as a positive force for societal growth; it also takes much of the blame for the recent global financial crisis (Lerner and Tufano, 2011). In order to achieve a positive impact of financial innovation on sustainable development in Nigeria, it is recommended that policies that will encourage financial innovation to move towards sustainable development are put in place. Such policies include:

i. The introduction of a corporate governance code in the financial system
ii. An overhaul of the risk management process in the system
iii. Introduction of an "innovation-enhancing financial regulation" – Schiller, 2009.
iv. Support for research into potentials of new financial products and
v. The constant training for operators and regulators in the financial system to be abreast of new developments.

However this study has only covered the financial system in relation to sustainable development. The impact of innovation on other sectors of the economy will be a good area for future work.

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