Abstract

Financial innovations (FIs) have become the bedrock of financial institutions management. This reviewed literature looks at the reasons, effects and forms of financial innovations in the developed market and in the Ghanaian context. It was found from the reviewed literature that the reasons sparking financial innovation are the need to shift from the traditional spectrum of acquiring funds as well as old modes of service delivery by financial institutions - to look for a more attractive mode of satisfying clients. The shift in consumer demand, lifestyle and sophistication has also caused financial institutions to look for a more strategic approach to satisfy customer taste and needs. It can be concluded that FIs have major impacts on the performance and management of financial institutions including improved efficiency, facilitating the payment system, quality service and increased revenue. Moreover, different people benefit from financial products including investors, shareholders, customers, issuers and other stakeholders.

Introduction

The turbulent nature of the financial environment recently has imposed obligations on financial institutions to search for alternative means of managing their risks. The changes in the financial environment have stimulated the search by financial institutions for innovations that are likely to be profitable. Changes in the financial environment have not all the time favoured financial institutions, hence the need to look for alternative strategies to circumvent the possible threats of environmental changes on their operations. In view of this, to maximise profits, financial institutions develop new products and process to satisfy their own needs as well as those of their customers.

The idea of financial innovations (FI) dates back to 1961 when the first effective Negotiable Certificate of Deposit (NCD) was introduced by
National City Bank of New York (now Citibank/Citcorp) to permit banks to purchase funds and manage their liabilities (Sinkey, 1989). This set the platform for the dynamic process of FI. But compared to the 1960s and 1970s the rate of innovation is faster in the 1990s and 2000s. This has been attributed to the current pace of technology as well as the quest to gain competitive edge over other firms in the industry.

In Ghana the first real effort at encouraging FI may be linked with the restructuring effort under the Financial Sector Structural Adjustment Programme (FINSSAP) launched to address the weakened, financially distressed, the insolvency and the significantly non performing loan books in the financial sector in the mid 1980s. To address these problems, FINSSAP was launched to restructure distressed banks, clean up non performing assets (NPA), restore banks to profitability, reform legislation and the banking supervisory system, allow the entry of new banks and financial institutions and develop the money and capital market. This effort led to the liberalisation of the financial sector to make it more competitive and attractive to investors. From this point, firms in the industry tried to develop more effective means of satisfying their clients hence the need to develop new products. The Trust Bank introduced one of the innovations that changed the phase of banking, the Automated Teller Machines (ATMs), in the country. Since then there has been a diffusion of this process in the Ghanaian financial institutions with the banking sector dominating. The general picture in the financial sector is that there seems to be acceptance of financial innovation.

The dynamic, uncertain and competitive nature of modern day business and for that matter, financial institutions means that firms devise means of staying ahead of competition through the development of new products and new processes. Financial institutions are using their product offerings to attain product differentiation in a conventionally undifferentiated era. Financial institutions are allocating both financial and non financial resources to enhance service delivery, branding, employee dedication, and quality customer service. Developing financial products among other things are meant to provide more choice, convenience and economy for consumers, if the firm is to reap its side of the benefits of financial product innovation (profitability, growth and survival). However, the objective of ensuring consumer satisfaction by using new financial products has been very difficult to achieve if not impossible most especially for emerging financial sector as that of Ghana.

Also the advent of new financial services development is stimulated by deregulation of the financial services, increasing customer needs and expectations, advances in technology and new forms of competitions. Such developments are phasing out the traditional banking practices. Ghana has gone through such development, but to what extent has it affected the operations of its financial institutions? Have financial institutions embraced the idea of financial product innovations; and what effect has it had on their performance. The ensuing text is reviewed literature on this important and topical issue.

The rest of the study is organized into the following; first, a look at Ghana’s financial market and banking industry; then the theories, reasons, impact, forms and categories of FI; next is the findings and conclusions drawn from the reviewed literature.

Ghanaian Financial Market and the Banking Industry
The Ghanaian financial system includes the banks, insurance companies, discount houses, finance houses, leasing companies, savings and loan associations, credit unions, and a stock exchange. However, the banking system is by far the largest component of the financial system.

According to Aryeeetey (2001) the interventionist approach began under “self-rule” in 1953 with the establishment of Ghana Commercial Bank for both political and economic objectives. As the existing banks were less responsive to the needs of the indigenes the National Investment Bank, the
Agricultural Development Bank, the Bank for Housing and Construction, Cooperative Bank, National Savings and Credit Bank, Social Security Bank were setup. However, the feature by the 1980s was an economy dominated by state controlled banks.

Nevertheless, such development created a financial industry plagued with uniform accounting standards; without any legal obligation to build up loan-loss reserves, excessive concentrations of risk, insufficient capital, unrecognised loan losses, and reported inflated profits, failure to efficiently mobilise resources for growth and development, failure in its supportive role to the development of the monetary sector among others. As a result various policies became dysfunctional and were often ignored in the operations of the institutions. Broader macroeconomic indicators showed that Ghana lagged behind other African nations in terms of financial depth. Indeed, the negative impact of repressive policies on financial sector development was most clearly seen in the haiving of financial depth (World Bank, 1994).

The idea of bank restructuring took turns in 1989 with the support of legal and regulatory framework, and the supervisory capabilities of the central bank, as well as the support from the World Bank-funded Financial Sector Adjustment Programme. The Banking Law was amended to provide a stronger prudential base in terms of minimum capital, reporting and lending guidelines. A new Bank of Ghana law in 1992 provided stronger regulatory and supervisory powers. At the same time, entry of new banks and non-bank financial institutions was encouraged, especially through new laws in 1993 to support development of leasing, housing finance, and nine categories of non-bank financial institutions. Indeed, state control over banks has been reduced considerably. **Among the reforms policies include interest rate liberalisation.** Ghana’s removal of restrictions on lending was much more rapid than it was in most other countries (Soyibo, 1997).

There has also been the privatisation of state-owned banks to strategic buyers who took over majority shares in large commercial banks. Though the state has chalked up some gains in the area, the full benefit is yet to be derived as most of these investors think of profit repatriation than reinvesting in the domestic economy for economic development.

The reform has also led to the granting of licenses to the private sector to register financial institutions. From the 1994 figure of 17 banks, the number by May 2008 was 23 with all the new ones being private. The growth of NBFIs also needs to be mentioned as the development of finance houses, leasing companies, savings and loans companies, etc. has been on the increase.

In effect the reform aided the sector to gain expertise in areas such as human resources; regulatory issues; operating processes and procedures; supervision, proper accounting and auditing principles; capital and money markets developments among others. It also led to the generation of an active policy on informal and microfinance. While formal finance has not responded as expected to reforms, there has been a more positive response from informal finance agents in terms of savings mobilisation. But it is also acknowledged that this has not led to significant increases in the flow of credit to growing small borrowers (Nissanje and Aryeetey, 1998).

**Theories of Financial Innovation**

In Silber’s constraint theory of innovation (1975), FI was attributed to attempts by profit maximizing firms to reduce the impact of various types of constraints that have the impact of reducing profitability. This may involve innovation in order to circumvent constraints that restrict the operation or market opportunities of the firm. Besides Kane’s market technology and political theory of innovation (1984) saw financial innovation as an institutional response to financial costs created by changes in technology, market needs and the political sphere particularly laws and regulations. Regulations create institutional responses that are designed to avoid the impact of regulation which in turn, provides the seeds of a new round of regulation. This could be seen with off-shore banking which has led to new regulations springing
up to curb anti-money laundering and criminal activities.

In another development, Miller (1991) proposed the "regulation and taxation theory of innovation". He recognizes that major innovation in the last two decades or so has been exclusively due to changes in tax laws and regulatory changes. He attributes the development of many new financial claims to attempts to alter the amount and timing of taxable income. He also notes that many of the innovations were the result of regulator barriers and the desire of financial firms to avoid the impact of regulatory constraints. Obviously every change in the tax laws is a major event for tax lawyers, accountants and investment bankers to try to profit by finding new ways to reduce the tax burden.

Financial Innovation discussions have centred on the quest to develop new financial products and delivery system or the emergence of new kind of financial providers. The motivation for FI has been to circumvent government regulations and loop holes in corporate tax systems, curtail risk in the market place and others (offer variety, improve efficiency, competitive advantage etc.). So Tufano (2002) posted that if the world were free of all "imperfections" e.g. taxes, regulation, information asymmetries, transaction costs, and moral hazard, and if markets were complete in the sense that existing securities spanned all states of nature, one could arrive at an M&M-like corollary regarding financial innovation. In the mist of market imperfection therefore means the need for financial innovation. Because imperfections prevent participants in the economy from efficiently obtaining the satisfaction they require from the financial system.

Reasons for Financial Innovations
Several reasons have been assigned to the need for financial innovations. This may include the need to take advantage of a market opportunity (to have a competitive edge over rivals) or solve a problem (e.g. such as incomplete markets that prevent risk shifting or asymmetric information).

According to Merton (1992), the reasons for FI include moving funds across time and space; pooling funds; managing risk; extracting information to support decision-making; addressing moral hazard and asymmetric information problems; and facilitating the sale or purchase of goods and services through a payment system.

Different writers use slightly different lists of functions, but there is much overlap in these descriptions. Finnerty (1992) identifies a set of functions, two of which correspond closely to Merton's functions (reallocating risk and reducing agency costs), and a third increasing liquidity, which is an amalgam of Merton's movement of funds and pooling functions.

However, BIS (1986) identified the transfer of risks (both price and credit), the enhancement of liquidity, and the generation of funds to support enterprises (through credit and equity) as one of the reasons for FI. Each researcher strives to describe the functions in an economical fashion, but it is probably fair to say that no commonly accepted and unique taxonomy of functions has been adopted. Even if it were to exist, no functional scheme could avoid the complication that a single innovation is likely to address multiple functions.

Impact of Financial Innovation
According to Tufano (2002), while most authors acknowledge that innovation has both positive and negative impacts on society, their conclusion regarding the net impact of FI reflect a diversity of opinions. For Merton (1992) FI is the engine driving the financial system towards its goal of improving the performance of what economists call the real economy. The development of international markets for financial derivatives and the growth of the mutual fund and investment industries are examples where innovation has produced enormous social welfare gains. Innovation leads to materially lower mortgage rates charged to borrowers (Jameson, Dewan and Sirmans, 1992). But, others are of contrary opinion, citing costs of innovation that defer and evade taxation, giving rise to loss of tax revenues, loss of confidence in
government, a sense of inequity, and extensive resources devoted to this activity which does not enhance social welfare. More so, innovations lead to complexity that in turn leads to bad business decisions and social costs.

Ross (1989) put forth one of the conventional views on FIs as allowing users to exploit arbitrage opportunities, thus, facilitating the completion of financial markets. It is shown that not only do these instruments provide favourable reported earnings, but they also enable issuers to show lower gearing, thereby helping them to pursue dual accounting objectives through one instrument.

Robert (1987) outlined the usefulness of other FIs including off shore deposits, zero coupon bonds, swaps, market indexes among others. Thus, FI helps investors by giving them an intermediary to manage their investments. Swaps - reduce foreign exchange risk. However, some participants have taken on unusually large risks; these participants have been attracted by the combination of the low margin and prospective high returns.

Also equity market indexes enable investors to specialize in carrying different risks; for example, the buyer of an index is willing to pay a small amount for the low probability of a high return, while the seller of the index receives this same amount (less the payment for intermediation) as a way to enhance the total return associated with the securities that form the basis of the call. The impact of financial innovation and liberalization is to reduce the barriers among financial institutions within each country and the boundaries among national financial markets. The likely result is a centralization of financial activities and consolidation of the number of banks and institutions (Aliber, 1987). Also FI leads to variety of products in the market thus varied needs of specific customers are met as well as serving as an insurance against the future in terms of savings. So Miller (1991) refuted the contention that innovations have increased market volatility and then argues strongly that attempts to regulate innovation will be counterproductive.

Tufano (2002) outlined some of the criticisms of FI as being the site of battles between those who see innovation as a good or bad influence on social welfare (e.g. derivative market); and contributing to high levels of market volatility (market crashes). Also, FI leads to complexity that in turn leads to bad business decisions and social costs; reduce shareholder value of the firm e.g. offshore banks have increased their share of the worldwide market for bank deposits at the expense of domestic banks, largely because offshore banks are not subject to interest rate ceilings on deposits or reserve requirements, and thus pay higher interest rates than domestic banks (Aliber, 1987).

Moreover, because FIs are complex and difficult for consumers to understand, lenders take advantage of this and trade low performing financial instrument to the borrowers. Also, speculation under derivatives markets introduces more risk into business (Pianalto, 2007). It is a fact that loss of jobs for Tellers is due to the use of ATMs. Employees institutions using these innovations but have not received needed training will become outmoded. In addition FIs will promote fraudulent acts in terms of credit cards and with off-shore banking it will promote money laundering. Since these innovations involve the use of computers and electronic devices, a breakdown will have a huge spill over effect in the financial institution. However, it is still difficult to measure the social cost of financial innovation though the argument rages on.

Forms of Financial Innovation

According to Drucker (1984) innovation may be incremental (making alterations to existing products to meet current demand or market pull); radical (technology push, where a firm achieves a complete breakthrough); and general purpose (one that describes the really big innovations). FIs may take similar forms.

Tufano (2002) posits that FIs are divided into product and process. Product innovation is exemplified by new derivative contracts, new corporate securities or new forms of pooled investment products; process innovation is typified by new means of distributing securities, processing transactions, or pricing transactions. He added that innovation
includes the acts invention (ongoing research and development function) and diffusion (or adoption of new products, services or ideas).

According to Buame (2004) the forms of innovations range from completely creating new kinds of product or process to the revitalisation of an existing product (product extension). An innovation may fall under: extension - the firm finds new use or different application for the product; duplication: creating a reproduction of an existing concept, to enhance or improve upon it; invention - creating totally new products or synthesizing combining existing concepts.

Also, Kane (1983) submitted some primary distinction of innovation (autonomous and induced), invention, diffusion and the spread of financial innovations. Invention was seen to be an unfolding technological opportunity; innovation was seen to be the profitable application of an invention. The lag between an invention and its embodiment in an innovation is the innovation lag. The lag reflects the time it takes to reduce the operating costs of the new technology or generate the sales volume to make retail applications profitable. Also whereas autonomous innovations are those that just happen, induced innovations are caused by some outside forces market forces (price or interest rate movements) or regulatory forces (geographic, price or product restrictions). Sinkey (1989) following Kane's work concluded that most major environmental factors driving the process of financial innovations is captured by the TRICK model Technology, Regulation Interest rate risks, Customers and Kapital adequacy.

Categorization of Financial Innovations
Finnerty (2001) has created a list of over 60 securities innovations, organized by broad type of instruments and their functions; including debt, preferred stock, convertible securities, and common equities. Others include warrants, convertible bonds and municipal securities. Also Graham and Dodd (1934) submitted a variety of innovative bonds including the following contingency equity contracts, alternative risk transfer, credit and weather derivatives among others (see Table one).

**Table 1 Financial Innovations by Financial Institutions in General**

<table>
<thead>
<tr>
<th>Financial Innovation</th>
<th>Function</th>
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<tbody>
<tr>
<td>Pay-in-kind Bonds</td>
<td>Issuer may choose to pay interest either in cash or additional bonds with the same face value.</td>
</tr>
<tr>
<td>Step Up Bonds</td>
<td>Do pay coupon interest, but the coupon rate is low for initial period and then increases (steps up) to higher coupon rate.</td>
</tr>
<tr>
<td>Putable Bonds</td>
<td>A kind of option; if the bond's coupon rate exceeds current market yields, the holder may choose to extend the bond's life.</td>
</tr>
<tr>
<td>Bonds with Stock Dividends</td>
<td>Entitle holders to receive dividends like other shareholders.</td>
</tr>
<tr>
<td>Inflation Indexed Bonds</td>
<td>Payments tied to the general price index or the price of a particular commodity.</td>
</tr>
<tr>
<td>Voting Bonds</td>
<td>Unlike other bonds, this gives the holder a right to vote in the company.</td>
</tr>
<tr>
<td>Non Voting Shares</td>
<td>Holders do not have voting rights</td>
</tr>
<tr>
<td>Preferred Stock</td>
<td>It gives the holder a claim on divided if declared</td>
</tr>
<tr>
<td>MICR System</td>
<td>Facilitate cheque clearing at the central bank</td>
</tr>
<tr>
<td>Collable Bond</td>
<td>Gives the issuer the option to extend or retire the bond at the call date</td>
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</tbody>
</table>

Source: Graham and Dodd (1934)
In the area of foreign exchange transactions, Duffie and Rahi (1995) identified some innovations in exchange-traded derivatives, over-the-counter derivative contracts as credit derivatives, equity swaps, weather derivatives and alternative risk transfer contracts/contingent equity contracts.

Bodie et al (1999) outlined the recent innovations called the exotic over-the-counter options (customised instruments traded on the OTC markets). They include Asian options that have payoffs that depend on the average price of the underlying assets at some portion of the option’s life; Barrier options that have payoffs that depend not only on some assets price at its expiration, but also on whether the underlying assets price has crossed through some barrier; Lockback has payoffs that depend in part on the minimum and maximum price of the underlying assets during the life of the option; and Binary options that have fixed payoffs that depend on whether a condition is satisfied by price of the underlying assets.

Additionally, Saunders (2002) identified FIs in wholesale banking to include:
- **Controlled Disbursement Accounts** - for quicker account checking to give early insight into net cash positions;
- **Accounts Reconciliation** - with a checking feature to provide a record paid cheque;
- **Wholesale Lockbox** - centralised collection service for corporate-payments to reduce the delay in check clearing;
- **Electronic Lockbox** - for receiving online payment;
- **Funds Concentration** - for redirecting funds from accounts in a large number of different banks or branches to a few centralised accounts at one bank;
- **Electronic Fund Transfer for** - includes overnight payment via fed wire;
- **Others** include Electronic Initiation of LCs, Treasury Management Software, and Electronic Data Interchange.

Retail banking products, identified included ATMs, point-of-sales debit cards, home banking, preauthorised debit/credit, telephone bill paying, e-mail billing, on-line banking, and smart cards (store value cards).

In Ghana, some of the notable financial innovations used by financial institutions are classified under general and exclusive. The general ones are those that are common to almost all financial institutions. Exclusive ones pertain to individual financial institutions. Some of the general ones are ATM, MICR and Money Transfer Systems. The exclusive FIs are in Table 2.

**Table 2: Financial Innovations by Financial Institutions in Ghana**

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Some Exclusive Financial Innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agric. Development Bank</td>
<td>Gold Drive Motor Loan, Farmers Drive Motor Loan</td>
</tr>
<tr>
<td>Amalgamated Bank</td>
<td>Kids and Teen Savings Accounts</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>Off-Shore Banking, BusinessMaster International</td>
</tr>
<tr>
<td>Databank Ghana</td>
<td>EPACK</td>
</tr>
<tr>
<td>CAL Bank</td>
<td>All - in - One Accounts; SMS Banking</td>
</tr>
<tr>
<td>Ecobank</td>
<td>Regional and Electron Cards</td>
</tr>
<tr>
<td>Fidelity Bank</td>
<td>Margin; Salary Backed, Employer Guarantee &amp; Auto Loan, Call, Premium &amp; Royal current account, Premium &amp; Royal Reserve account</td>
</tr>
<tr>
<td>Ghana Commercial Bank</td>
<td>BONDEX; Express Money Transfer, Fodem and Royal banking</td>
</tr>
<tr>
<td>Guarantee Trust Bank</td>
<td>E-Products, Slip Free banking, GeNS, Target Savings &amp; Easy Savers Accounts, Max Advance, Triple “A”</td>
</tr>
<tr>
<td>HFC Bank</td>
<td>Students Plus &amp; Life Starter Accounts; Educational Loan, Mortgage Product; Bill Pay Point and SMS Banking</td>
</tr>
<tr>
<td>Institutions</td>
<td>Some Exclusive Financial Innovations</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Merchant Bank National Investment Bank</td>
<td>On-line Banking, O-shore Banking, and Off-shore Banking Bancassurance Product</td>
</tr>
<tr>
<td>Prudential Bank</td>
<td>Business Savings Accounts, Fixed/CALL/CDs</td>
</tr>
<tr>
<td>SG-SSB Bank</td>
<td>Visa &amp; Master and Sika Text, Priority Banking and Money gram</td>
</tr>
<tr>
<td>Stanbic Bank</td>
<td>Customer Access Terminal System (CATS) Africa provides a comprehensive range of banking services and management information</td>
</tr>
<tr>
<td>Standard Chartered Bank</td>
<td>Telephone Banking</td>
</tr>
<tr>
<td>The Trust Bank</td>
<td>TTB Gold Account is a Hybrid of Savings and Current Account.</td>
</tr>
<tr>
<td>Unibank</td>
<td>Quick Deposit Services, Employee Privilege Loan</td>
</tr>
<tr>
<td>UBA</td>
<td>Zero Account for 30 days</td>
</tr>
<tr>
<td>Zenith Bank Ghana</td>
<td>Mobile and Corporate Internet Banking, Z Prompt and Mobile, Automated Cheque Writing</td>
</tr>
</tbody>
</table>

Source: Fieldwork, 2008

Findings

It was found that the reasons sparking financial innovation are the need to shift from the traditional spectrum of acquiring funds as well as old modes of service delivery by financial institutions to look for a more attractive mode of satisfying clients. Also, FI is stimulated by deregulation of the financial services, increasing customer needs and expectations, advances in technology and new forms of competitions. FIs attempt by firms to reduce the impact of various types of constraints that have the impact of reducing profitability; an institutional response to financial costs created by changes in technology, market needs and the political sphere particularly laws and regulations. It is an attempt to alter the amount and timing of taxable income; curtail risk in the market place and others (offer variety, improve efficiency, competitive advantage etc.)

The first real effort at encouraging financial innovation may be link with the restructuring effort by policymakers under the FINSSAP initiative as part of the ERP.

It is also found that FI is beneficial because it enables firms to take advantage of a market opportunity or solve a problem; aids in the transfer of risks, enhances liquidity, help generate funds to support enterprises; leads to materially lower mortgage rates charged to borrowers; improve efficiency, facilitating the payment system, quality service and increased revenue of financial institutions; allows users to exploit arbitrage opportunities, thus, facilitating the completion of financial markets.

It was also revealed that FI leads to deferment and evasion of taxes, giving rise to loss of tax revenues, loss of confidence in government, a sense of inequity, and extensive resources devoted to this activity which does not enhance social welfare. More so, innovations lead to complexity that in turn leads to bad business decisions and social costs; allows lenders take advantage of this and trade low performing financial instrument to the borrowers; it is a fact that loss of jobs for Tellers is due to the use of ATMs.

Conclusion

Financial institutions are susceptible to several socio-cultural, legal, economic, political, technological and institutional influences. Inflation and interest rates rise and the firm's inability to be predicted occasionally have caused changes in the demand conditions in financial markets. The shift in consumer demand, lifestyle and sophistication has also caused financial institutions to look for a more strategic approach to satisfy customer taste and needs. In addition, institution and professional regulations more often than not become burdensome, hence the need to circumvent these regulations with the development of new products.
Moreover rapid advancement in technology has changed the financial assets supply conditions.

It is concluded that FIs have major impacts on the performance and management of financial institutions including improved efficiency, facilitating the payment system, quality service and increased revenue. Moreover, different people benefit from financial products including investors, shareholders, customers, issuers and other stakeholders. It has increased globalization of financial markets as result of enlarged competitive markets. FI can thus be described as the engine driving the financial system towards its goal of improving the performance of what economists call the real economy.

REFERENCES


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