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# The Impact of ICT on Financial Sector Policy Reforms in Post-Financial crisis era in Ghana: An institutional theory perspective

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## Abstract

*The paper seeks to enhance the understanding of relevant policy measures and reflects on what else could be done. The article further studies the effect of change in the institutional environment on bank governance practices primarily to improve the industry's supervision and regulation, related to the post-crisis exit strategies. This paper discusses the development of ICT infrastructure and application as a basis for the main dimension of Ghana's digital transformation in financial services. This paper is, therefore, motivated by the lack of empirical studies that examines how the impact of the banking reforms play a substantial role in promoting innovative digital payment systems to replace cash transactions. From the perspective of institutional theory, the study looked at why (and how) a number of policy measures have a significant impact on the financial performance of banks? And how the applications of e-finance in ICT and financial practices, provides several benefits within the banking sector improve the sector's image and leads to a broader, faster and more efficient market? The application of Koppenjan and Groenewegen (2005) 's four-layer model 'levels of institutional analysis' perspective seems to be the most useful starting point, which provides the basis for an improved understanding of revealing the inefficient delivery of Ghanaian banking industry in the past. A combination of a review of secondary and empirical data, interviewed used in the analysis. Findings indicate that the financial and banking sector reforms help the industry advance digital banking culture and impact on the general expansion of the financial and the infusion of financial inclusion in Ghana. These conclusions would be particularly useful in a similar picture in other developing countries, as well as by the bank authorities to create their future policy. It also joins the debate on the impact of the banking reform, a key turning point towards better regulation to refine crisis prevention and resolution mechanisms.*

***Keywords:*** *Institutional Theory; Financial and banking sector reforms; Financial inclusion; Information and Communications Technology (ICT); Ghana*

***JEL Classifications:*** *G17;G21*

# Introduction

Like many other developing market in transition, Ghana has introduced several financial sector (bank and non-bank) reforms. So far, these reforms have not only helped build an efficient, competitive and resilient financial industry, but they have also improved bank governance systems, providing safe and robust digital payment systems that have become a significant element in global trade and commerce activities. In particular, successful reforms in Ghana have restored banking system health and global best practices, which some other countries in the West African Sub Region have also adopted. The recent financial crisis has given rise to the largest wave of banking crises since the late 1980s. Unlike previous crises over this period, the current wave seems to affect mostly domestic banks, such as microfinance institutions (MFIs). In general, the crisis significantly affects both large firms and small businesses that borrow heavily to run their operations, making it harder to tap credit as the outbreak curtails economic activity and jobs are lost. This research paper focuses on the post-crisis period (2017-2018), but also briefly revisits the pre-crisis period (1980-2000), that are relevant to its regulatory activities as compared with the pre-financial reform period. The paper then turns to examine whether these reforms have met their intended objectives of delivering sound evidence-based for regulatory policy formation. The recent history of the financial crisis in 2017–2018 severely hit the Ghanaian financial system, sent the entire nation into panic. In the wake of the crisis, an active debate has developed about several vital issues, include, when and how to intervene, and possible future directions? At one level, this discussion and analysis, much of which is in the form of commentary by academic economists, politicians and technocrats involved in policymaking, points to measures for dealing with the gravest economic crisis. The recent crisis, as inferred from the actions of key policymakers, contains aspects of systemic risk that extend beyond what has been observed in historical episodes of crises. It's always tempting to boil things down to one or two root causes of the recent episodes. However, the scale and breadth of the crisis have exposed several weak points on the crisis management front. İn particularly, the effects of the crisis remain ongoing concerns, given that the collapse of nine banks was the biggest, relative to size, that any country had ever suffered and thus threatened the stability of the financial markets.

In reality, Ghana's banking crisis was caused by multifaceted underlying regulatory regulatory weakness. Most notably, the crisis has revealed critical shortcomings and gaps in the supervisory and regulatory framework, both at a micro and macro-prudential level, as well as the failure of the regulator to crack the whip when necessary, especially against banks that are well- connected politically. More pointedly, the weakness allowed an unsustainable build-up of vulnerabilities prior to the crisis, which ultimately led to the crisis itself. These vulnerabilities included a massive lending boom, the neglect of market discipline, and a failure to send warning signals. It is worth mentioning that the financial system was put at risk because of this. Another suggested reason for the crisis was related to the failure of the government and its regulatory branches to monitor the banks' imprudent behavior and risky investment actions. The events that led to the economic and financial crisis do seem to be a widespread concern within the industry, where some traditional banking activities have shifted from banks and regulated financial exchanges to nonbank entities with less oversight and little or no collateral behind them. For example, for the much longer term, the financial crisis impacted banking by spawning new regulatory actions. In particular, the crisis demanded a response that was swift, rational, and collective to shore up the financial sector in the wake of the crisis. More pointedly, a reasonably speedy action on reforms is because of the disorderly failure of such institutions, and, importantly aim to forestall the failure of such institutions. The banking system has undergone tremendous change in the recent period, and the process is still ongoing. The development of specific reforms followed, presenting four identifiable strands reform programs and related policy from a post-crisis perspective. In terms of the policy, as well as managerial implication, this paper argues that the role of supervisory and regulatory authorities has probably had a significant impact on potential output. This has become more important than before and thus eases the impact of the crisis, instead proposing policies for mitigating financial crises (Carrett et al. 2015).

The primary driving force behind these reforms was significant to improve banking sector supervision and regulation, introduce clearance and settlement systems, infuse competition and to stimulate financial innovation. Additionlly, The obvious aim of this policy shift was to provides countries with an opportunity to measure their compliance with financial sector standardsparticulalrly the implantations of clearing and innovation based settlement systems, and payment systems that form the core infrastructure of all fianacial industry.As a notable result, of these reforms, some have now been implemented, and others have progressed significantly, contributing to the recent much-improved performance of the banks over the past two years. This paper is, therefore, motivated by the lack of empirical studies that examine the impact of reforms in Ghana and their role in promoting innovative digital payment systems to replace cash transactions. To fulfil the gap in the literature, this study looks at the main financial sector reforms developed in the immediate post-crisis period, assessing whether these reforms have met their intended objectives. The contribution of the study will provide a better understanding of a more in-depth empirical and conceptual research contribution of financial and economic analyses. Furthermore, help fill significant gaps in knowledge about relevant contributions made to digital banking landscape in Ghana. Unfortunately, this line of research has not been well attended. The application of ICT, the era of digital financial technologies in Ghana's banking industry has created a win-win situation for both the banking industry and customers, especially in combating financial inclusion, is of importance. Similarly, these technologies, electronic finance has become one of the essential instruments for targeting the 'unbanked' or 'underserved' customer segments such as disadvantaged families or low-income communities, startups, early income millennials and small and medium-sized businesses (SMBs), thus, enables greater access to banking and financial services. Specifically, ICT refers to a wide range of IT technologies that address and manage electronic information. (Jensen, 2007). They can also contribute to bringing down national barriers and spurring competition in areas such as the promotion of digital banking culture. Furthermore, obtain the empirical evidence which helps to clarify the theory's attributes using an appropriate observation approach as methodology. Hence, the objective of this paper examines the impact of the central bank's response to pre-and post-financial crisis period 1980-2018, draw lessons the crisis has taught, and critically assess the future of operational frameworks in light of recent events. Against this backdrop, this article investigates the impact of ICT and related online banking products like digital banking platforms on the performance of banks in Ghana.

The banking industry is dynamic and is transforming – an ongoing digital evolution that is seeing change as new technologies make its path. Thus the real-life habits of consumers will be increasingly reflected in digital service offerings. The impact of the ICT adoption of the financial system, particularly its development has been verified in a number of empirical studies. For example, Fiserv, (2019) forcefully argues that technology solutions in the financial world (digital banking) drive higher revenue generation, increased product holdings, lower customer attrition, and higher transaction activity. Along the same lines, Fiserv argues that digital banking drives higher customer value. The integration of ICT is a major driver of economic growth and vital industry in its own right.The financial sector is exposed to the strong pressure of change as established companies have expanded their range of business, which expedites and improves the decision-making process (Swedish Bankers' Association, 2019). With a somewhat similar central theme, Laukkanen (2017) claims that digitization of financial systems pressures banks to undergo the largest transformation in their history. As one of the main drivers of digitalization, online banking has become commonly accepted (Patel et al 2018) and is integral to customers' lives, largely because it offers round-the-clock available, easy transactions and avoidance of queues (Al-Somali et al., 2009). Meanwhile, Iman (2019) argues that While, traditionally, banks have always been the vanguard sector in the use of IT (Barras, 1990), this situation has forced banks and traditional financial institutions to increase their capabilities and expertise. Drawing on the four-layer model framework presented by Koppenjan and Groenewegen (2005), the study looks at how the financial sector reforms have influenced bank in ghana. Thus, a developed conception of the institutional theory, a means to provide a useful point of departure for exploring this issue. Therefore, identify major policy directions, and reviews pre- and post-liberalization era, and how it has shaped the current market competition of the banking industry today. Through the lens of institutional theory approaches and Koppenjan and Groenewegen (2005) 's four-layer model for institutional theory, analyze how the institutional structures and values interplayed brought about significant fiscal policy changes in Ghana. Also, an interview with the respondent used as an additional supplementing in the analysis contributed to the discussions of systemic banking crises reforms and its impacts on Ghana's banking system. The rest of the paper organized as follows: Section 2, provides an outline of the conceptual framework, introducing institutional theory. While the four-layer based model on Koppenjan and Groenewegen (2005) and the function they fulfil contributing financial regulatory reforms reviewed in section 3. Section 4 briefly details the structure of the Ghanaian financial system. In section 5, presents an overview of periods specific structural adjustment reforms and initiatives. Then, section 6 reviewed the payments and settlements reforms. Section 7 explains the background of the policy landscape in the banking sector in Ghana. The final section offers some concluding remarks.

## Literature Review

There is consensus on the relevant and positive role of ICTs in underpinning economic progress. It has been argued that ICT is a principal driver of economic development and social change worldwide (Kozma, 2005; Leech, 2008). As the world is going through the technological revolution, adoption of new technologies in every sector is the most important. Information and communication technology (ICT) is playing a central role in the development of modern economies and societies. Almost all developing countries have ongoing ICT projects with wide-ranging areas such as health, education, rural development, e-commerce, initiated by governments, business entrepreneurs and non-government organizations. One notable initiative is that the diffusion of ICTs into low-income in most countries in Africa and communities, has played a very important role in development, of which Ghana is no exception. Several developing countries such as Uganda, Ethiopia, Kenya and many other African and Asian developing countries have also started to place considerable emphasis on the importance and availability of ICT for education and other sectors (Gebremeskel, 2016). The importance of ICT in business is also finding its way into areas such as education, economic and socio-cultural developments with the belief that knowledge is the driving force for technology development. He further retreats tat governments of these countries are taking keen interest to endorse diverse ICT policies in the (Gebremeskel, 2016). There is weak and ambiguous empirical evidence on the contribution of ICT investments to economic growth for low-income, emerging, and, in particular, developing countries (Niebel, 2018). More recently, a few structural and institutional reforms in this sphere begun in late 2001, which began promisingly steadily catching up with other countries when it comes to providing equitable access to ICTs. modern financial products as this digitalized age continues to change the nature of consumer behaviour.This explains why historically most of the industries including banking and financial services have benefited from ICT investment and productivity between 2005 and 2019.

This first wave of ICT adoption allowed increasingly complex operations to be processed ever-more efficiently. The larger economies of scale resulting from automation pushed the financial sector forward to enter into mergers and acquisitions to take advantage of efficiency gains. In particular consumer banking habits have continued to evolve, especially since users now have a choice of where and how they bank.As a result, sound evidence about the contribution of ICTs to development has only recently started to emerge and is sometimes not conclusive (Heeks, 2010).importantly this could be potentially impacting citizenry acess to digital financila services — a prerequisite for participating in the information society and reaping its benefits. It is clear that in the coming decades information and communication technologies (ICT) will affect and reshape reshape the future patterns both of practice and of professional developemnt, in a manner which ensures that it makes a major, positive contribution to improve in the quality and performance of institutions. According to Gebremeskel et al. (2016), many countries such as, China, South Korea and Singapore, have developed at a fast rate with the help of ICT (ITU, 2016).

As argued in the broader literature, the development of conventional and institutions has become the subject of much analysis modelling and discussion. On the theoretical and methodological level, there is no consensus among modern researcher as to what constitutes an adequate or acceptable explanation of the process of emergence of an institution. For example, King et al. (1994) are among the first to employ the new institutional approach in IS research, by looking at innovations at the diffusion of information technology under the role of the institution. Menawhile, Scott (2005) In a theoretical argument claim that institutional theory looks at the processes and mechanisms that form structures, schemas, rules, and routines to explain social behavior. By a historical approach, Scott looks at the institutional theory as a process of instilling value, a method of creating reality, a class of elements, and as a distinct society sector (Scott, 1987). Lieberman (2001) empirically defines Institutions as the formal organizations and the informal but widely accepted rules of conduct that structure decision-making or the political process. According to Williamson (2000), an accomplished, and distinguished researcher and contributor to new institutional economics added his voice to the ongoing debate, admits that “we are still ignorant about institutions``.

Thus, this study is a reply to Scott, (2004) call for a more detailed definition by defining an institution that is made up of people and institutions itself , scot further states taht it interplay to affect the powers of groups, shape ideas, and influence public decisions and policy coordination In a way, are described as a product of social interactions among people. From an economic approach, North, (1990) defines institutions with somewhat similar central theme posit that institution is humanly devised constraints that structure, political, economic and social interactions`. An organization evolving or changing. The line of thought—taking off from arguments by Peters (2000) to explore this issue begin by stating that an institution is a variable, not a constant and that different organization are at varying levels of institutionalization. The four-layer model as shown in Figure 1, outlined a layered approach to analyzing institutions within the Ghanas financial industry. Taken together, the four layers match each other. To put it simply, they do interact and influence each other and distinguishes between the different kinds of institutions at the level of institutional arrangement.. The four-layer model by (Koppenjan and Groenewegen, 2005) is relevant for this analysis because it provides a layered approach to analyzing institutions. The four-layer model by Koppenjan & Groenewegen (2005) offers a building block for identifying the steps to be considered in processes of institutional design. Also, distinguishes the different kinds of institutions involved at various levels of the model. However, on the other hand Koppenjan & Groenewegen (2005) provides insght of the model to analyze the functioning of complex (technological) systems.

In this respect ,the primary purpose of this paper generates insights into examining the institutional factors including actors interact fruitfully and thire role of mediation that have played an important role in the process of financial reform in ghana. Also, adopting the historical institutionalist approach, that has turned toward a success reforms traced to its policy development process. These complex systems require an institutional structure that coordinates the positions, relations, and behavior of the parties within these systems; rules of the game that guide and coordinate the response of actors (Koppenjan and Groenewegen, 2005). These public and private rules of the game, or arrangements, can be formulated informal rules, like Ghana, as mentioned above, financial system reforms. Therefore , the the four-layered model of Koppenjan & Groenewegen (2005) as points of departure aimed to identify institutional factors influencing the dimension to the understanding of the reform process of Ghana's banking sector.

The main aim is to clarify the progress that has been made, and the problems that have arisen and further seeks to identify the key policy directions and their periods. Pointedly, these Institutions are different in some ways: such as, concerning the kind of things they address the way they work and more broadly the extent to which they can influence. An institution is an Informal institutional environment which includes the culture, norms and values and other attitudes of its new immediate environment described in (layer 4) of Koppenjan and Groenewegen's four-layer model. Stresses the influence that both formal rules from level 3 and formal and informal arrangements at the governance level have on the behavior of the actors. According to Koppenjan & Groenewegen (2005), at this level, actors make institutional arrangements or mechanisms to coordinate the transactions between them demonstrates the capability of the organization to manage diversity regarding products and functions. These expressed through corporations, agreements, and arrangements, as shown in (layer 2) of the Koppenjan and Groenewegen mode. In (layer 1) of the four-layer model, expressed regarding the interaction between actors and agents aimed at influencing the provision of services. Denzassu and North (1994); Groenewegen (2004).

## Appropriateness of using institutional perspective to explain the development of Ghana’s financial industry

Institutional perspective as a point of departure by Koppenjan & Groenewegen (2005) 's four-layered model for institutional analysis through the mechanism of telling a story of Ghana’s financial crisis. it provides an interesting analysis of how the institutional structures and values interplayed to bring about policy changes which have brought about measures taken to clean up Ghana's banking sector. Based on the several episodes of widespread systemic banking crises, the case of Ghana. The research analyzes the comprehensive roadmaps and the actual implementation of reforms contributing to the theoretical debate about the research for using an institutional approach. Drawing upon the institutional theory, the four-layer model based on Koppenjan and Groenewegen (2005) depicted in Figure 1, provides a layered approach to analyzing institutions involved in the context of financial industries, the case of Ghana. Besides, this approach is a valuable addition, where it offers building blocks used to examine and explain the behavior of the actor in the distinguishes different kinds of institutions at the various levels of the model. The import is adopting the historical, institutional approach, the success of the reform of Ghana traced to its policy development process.

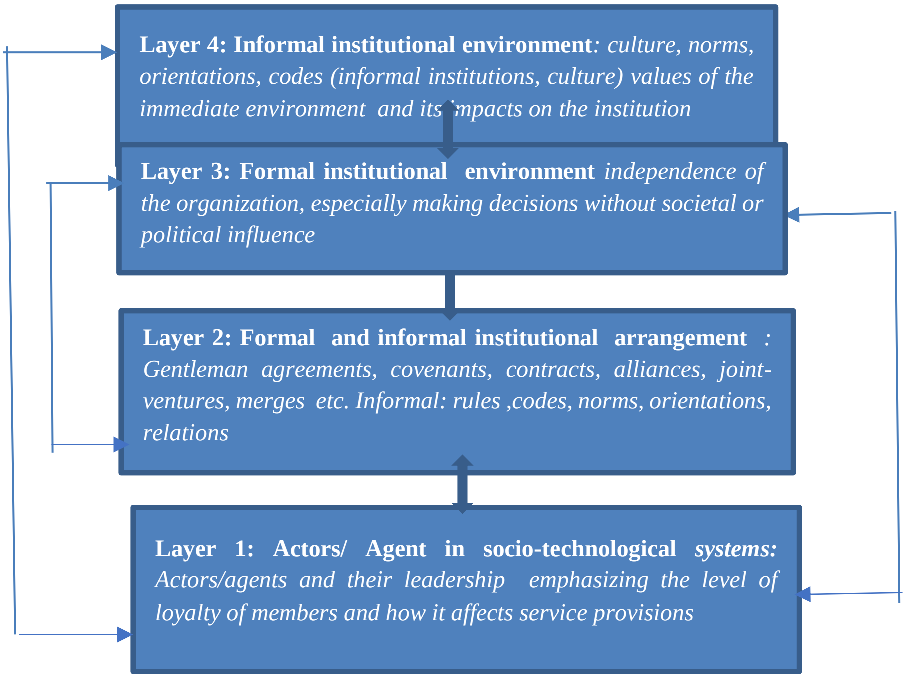


**Figure 1:** Koppenjan and Groenewegen's four-layer diagram of institutionalization.

Source: Koppenjan and Groenewegen (2005)

The key actor agents (sector players of participant), influenced the outcomes of Ghana's financial sector reform. The actor(s) identified the Government of Ghana (GoG), together with mutual assistance from the World Bank and IMF-played an active role with technical-financial support. Therefore, it seems reasonable to conclude that, the effective financial sector reforms are essential to achieving high and sustainable economic growth. However, its usefulness they seek to enhance the efficiency and to strengthen the stability, of the financial system.The policy shift also appears to have been prompted by recognition its usefulness to enhance the efficiency and to strengthen the stability, of the financial system.Particularly, to determine dynamic transition process and output of the reform." Antwi-Asare et al. (2000). The Financial Sector Assessment Program (FSAP) is a joint program of the International Monetary Fund and the World Bank. The interaction between these actors and agents defined the transition process and affected the nature and output of the reforms. The reform and open door policy of Ghana began with the adoption of a new economic development strategy at the aimed to —addressed the endemic problems and to help the country reduce the likelihood and severity of financial sector crises. İn particular, the establishment of this joint program also helps bring financial sector analysis closer to the center of economic policy discussions within a country.However, opinion and viewpoint expressed herein, by all relevant persons interviewed in the financial industry, used as an additional supplementary data to support the analysis, as part of the reform process. The program also represents a collaborative international effort.When asked 'what role and influence did the World Bank together with the IMF and the Bank of Ghana (BoG), noting the crucial role played in steering the financial sector reform agenda on Ghana's financial sector? One interviewee recalls that, the joint IMF/World Bank FSAPs profoundly influenced positively on many fronts, which include resilient and robust banking systems measure makes the banking crisis less disruption.Cohen (2004) argued that citizens lost confidence in their national currency and began to use foreign currencies with stability and prestige. According to Layna (2006), the Government was under considerable pressure from a section of the citizens to address the monetary policy problems that generated the sizeable local currency to the dollar (or another prestigious currency ratio). The above discussion points to a combination of the poor performance of the Ghanaian financial sector—the failure of financial institutions to manage themselves prudently. Also, high inflationary pressure in the economy; are the key endogenous factors that led to Ghanaian banking reforms. "…My view is that reassuringly there was a considerable degree of consistency regarding the quick responses by the regulator (the Central bank of Ghana) has strengthened the industry, in doing so has seen better financial position, and more innovative than previously seen. On the one hand, this interviewee recognized that banks today have improved significantly and restore consumer confidence. He added that, [the] financial performance of the banking industry is generally strong., these strategy was the best direction" (Interviewee).

Broadly put, Ghana's financial problems were deeply rooted in recurrent lapses in financial discipline. Shortly after that, the Government set forth a strategy to privatize some of the state-owned banks, and the liberalization of the sector led to the entry of several banking industry .This indicator however, captures information on issues related to reorganization Of number of banks include foreign, public and domestic banks are enjoying fruitful business in the country because of its rapidly growth trading. Ghana had then transition from military to civilian rule. following years of military rule. The ruling government initiated several new policies to be in harmony with the international donor partners, e.g., World Bank (major financier). The restrictive policies were expected to contribute to the industrialization of the economy and even more critical to the stability of the banking sector (Beck, 2008).

The government saw the need as a sense of urgency to establish a sound and stable economic aimed explicitly at securing sustained economic and broad-based improvement in living standards. The business of banking originated and started working on the Gold Coast (now known as Ghana), during the colonial era—aimed at providing financial services to the British enterprises and the colonial administration. "The Bank of British West Africa established in 1896 and later renamed as Standard Charted Bank in 1985 opened the first branch in Accra. The Bank of British West Africa, as well as the Barclays Banks, was the only Banks operating on the Gold Coast during as far back in 1920 to 1950" (Bobbie Osei 2015). Considerable Pressures from the local community exerted on then colonial government, in the wake of the major concerned regarding the country's monetary system managed by the two expatriates' banks. Government contracted Sir Cecil Trevor with the view of a comprehensive roadmap of Ghana's financial reforms. Particularly, to address the challenges of then distress financial sector. Whiles conditions were improved somewhat relative upon his assumption into office saw several rollouts of reforms to enhance the overall governance standards. In his recommendation, he pointed out that the formation of a bank partly owned by the government to be managed and staffed by locals (citizens). Overall, the financial sector in Ghana is made up of a wide array of institutions and instruments, comprises the Bank of Ghana(BoG), which is the apex financial institution. Following the crisis, the banking sector has undergone a paradigm shift to reflect new priorities, heading towards a more regulated environment, thus becomes an even more important necessity. As of June 2017, Ghana's financial services landscape is comprised of deposit-taking institutions including deposit money banks ("DMB"), rural and community banks and non-bank financial institutions ("NBFIs") such as savings and loans companies, microfinance institutions ("MFIs"), and licensed Susu enterprises. As shown in figure 2, indicates outlook of Ghana's financial services landscape looks today.

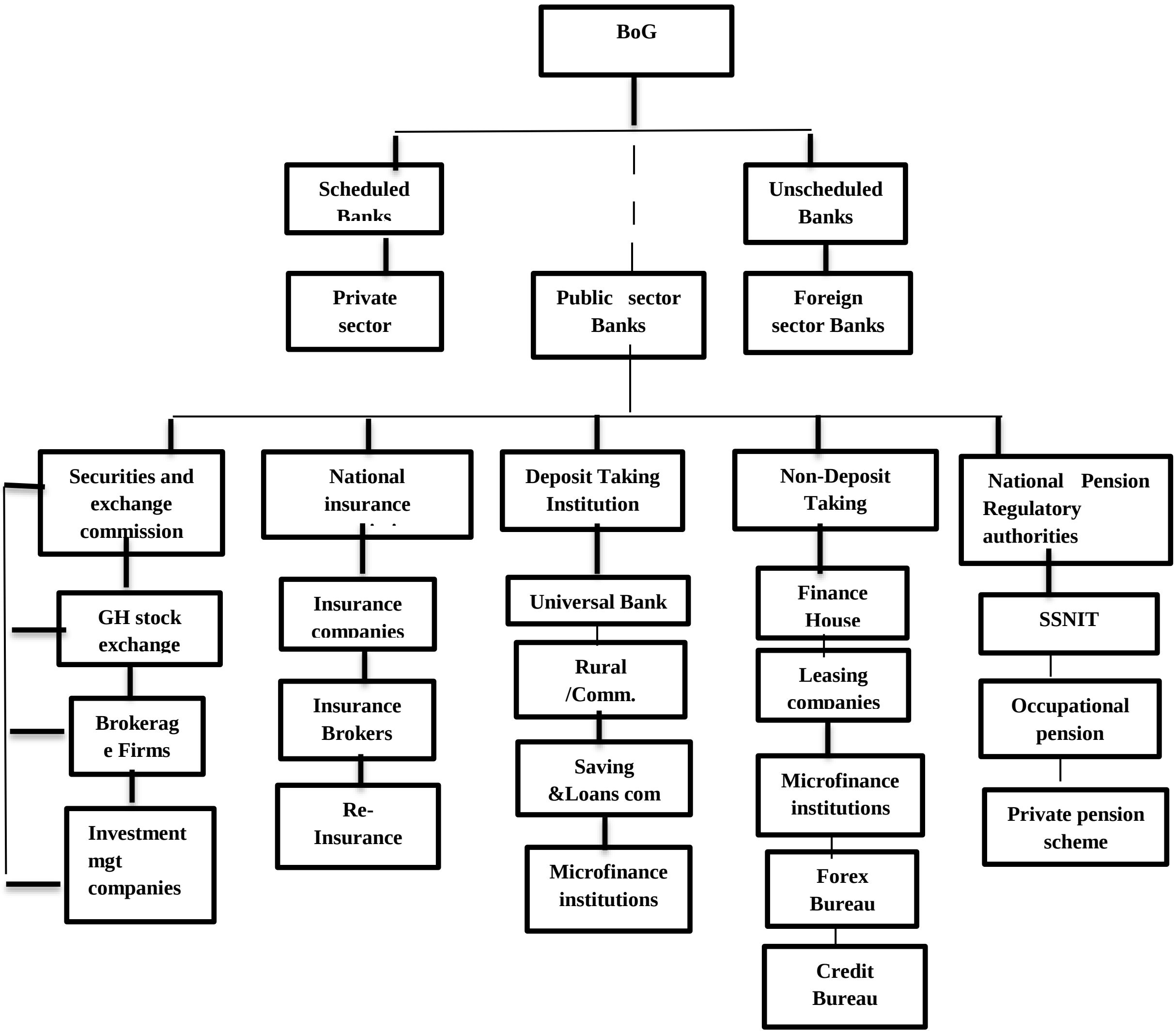


**Figure 2:** The Current Structure of Ghana's Financial Industry

Source: Authors' construction

## Overview of Periods Specific Structural Adjustment Reforms and initiatives

This section briefly discusses the financial liberalization and institutional reforms of Ghana's financial system. Ghana has undertaken several World Bank and IMF reform packages that have been deeper and broader in scope. According to the Finance Minister, Ken Ofori Atta, revealed "Rescuing the situation regarding these banks has so far cost some 9.9 billion Ghana Cedis. That could have been put to good use to fix the numerous infrastructural needs" (Welsing 2018). The first phase of the Economic Recovery Program (ERP), under the guidance of the World Bank and the IMF, was instituted beginning in 1983, with actual implementations span the 1983 to 1986 period. The overriding purpose of ERP was to reduce Ghana's debts and to regain macroeconomic stability, which sought to restructure the economy to improve its trading position in the global economy. In particular, the measures taken were necessarily led to reverse the trends of distortions inherited from the colonial era that had damaged the financial system. Many state-owned banks and Development Financial Institutions (DFI) set up purposely to enhance the financial sector. The DFIs raised finance through deposit mobilization, as well as the government support, and foreign loans were involved in providing commercial and development of the industry. An appropriate regulatory framework was too developed to integrate the activities potentially improved deepening of the sector.

The financial sector reforms between 2001 and 2008 under the FINSSIP, was built on these reforms with the goals of addressing many constraints in the financial sector to re-positioning Ghana's financial sector outlook. The pre-liberalization era saw two foreign and five state-owned banks with virtually no non-bank financial institutions (NBFIs), the industry had widened substantially. The primary focus of the financial reforms was, therefore, the restructuring of the financially distressed banks, enhanced focus of regulatory and supervisory framework, and the promotion of non-bank financial institutions. The banking institution sector also includes several non-banking financial institutions (NBFIs) and Microfinance institutions all regulated by the central bank (BoG). The collapse of large-scale indigenous banks has become a setback to government relentless effort to promote viable long-term sustainable development. The practical implications associated with banks and entire financial institutions would have far-reaching effects for the economy. In particular, borne out of the fact that economic development directly tied to the banking industry. The Central Bank, acting under Act 930, revoked the operating licenses of five (5) more privately-owned domestic banks, and their assets and liabilities were taken over by the newly created bank. The banks in question are uniBank (Ghana) Limited, the Royal Bank Limited, Beige Bank Limited, Sovereign Bank limited, and Construction Banks. The Bank of Ghana has the power to revoke licenses of Banks in such circumstances on the grounds specified by the said Act pursuant to sections 16 and 123 of (ACT 930). For example, the banking crisis in 2017 spurred similar discussions, regarding the similarities and differences in the event of the past episodes—thus, provides a good part of the explanation. Some commentators, especially in the media, have reacted to the current crisis by arguing that the real effects on the economy have somewhat different implications of the last episode.

Although the outbreak of the past crisis took a heavy toll on the real economy, as evidenced by depreciation of the Cedi against the foreign currencies, business closures, high unemployment rate, and increased inflation levels, however, both cases share a set of commonalities. In both cases, neither the regulator nor financial institutions failed to manage themselves prudently as a whole. While there are many commonalities between the recent and past crises, perhaps most important of all, both cases were about regulation in the field of finance. The (BoG) created newly bank called Consolidated Bank Ghana (CBG) Limited licensed by the Bank of Ghana to take over the struggling banks. There are significant implications about the changes in the industry, following a wide-ranging of reforms. Speaking at the 60th-anniversary celebration event of the Bank of Ghana on Wednesday, 1 August 2017 in Accra, the President of Ghana, Nana Akufo-Addo said: "The current weaknesses in our banking sector need to address forcefully to minimize any adverse financial consequences to unsuspecting savers and spill-over effects on the economy." (George Nyavor, 2018). The best signals appear promising due to the financial institution's outlook—and possibly no better time than now for banks to re-imagine transformation and pursue a strategic change in 2019 and beyond. Through measures by regulators to strengthen the capital and liquidity of sector, the financial health of banks improved significantly and restores consumer confidence. Going forward, the quick responses by the regulator to strengthen the industry has seen the financial health of banks improved significantly and restores consumer confidence. The BoG closely worked with the Ministries of Finance, and relevant financial actor, embarked on an ambitious agenda for regulatory reforms, in the wake of the 2017 banking crisis. The Central Bank plays a critical role in the rapid shift to clean the financial sector in earnest, towards some hard decisions, with greater reliance upon a more effective internal control system and enforcement. In doing so, the reforms go beyond enhancing the soundness of individual banks. …"Both the banking industry and the financial authorities must learn from that crisis in the 80s to be able to minimize the suffering in future…"(interviewee).

Following the expiration of the deadline issued on December 31, 2018, given banks to the recapitalization exercise to meet one straight jacket for a new minimum requirement of GHC400 million, or risk having their license revoked. The decision was part of the massive clean in the sector. However, banks were allowed to strengthen their capital, positioned ahead of the stress test exercise. It turns out that a relatively small proportion of banks seemed to be well-capitalized, judged by the stress test excessive undertaken. Some private funds in Ghana have injected fresh equity capitals in five (5) domestic banks through a particular purpose holding company named the Ghana Amalgamated Trust Limited (GAT). This facility was part of the Government of Ghana's (GoG) action plan to address liquidity problems to the financial institution. The results lend some support to the claim that new equity capitals were better indicators of bank resilience than risk-weighted measures. As the final phase of recapitalization exercise came into an end, the Central Bank (BoG)

—grouped all the sixteen (16) Banks that met new minimum capital without a merger arranged in category 1. The Banks that fall into the first category were—Zenith Bank; Ecobank; GCB Bank; Stanbic Bank; Standard Chartered Bank; Barclays Bank; Access Bank; Consolidated Bank; Republic Bank; Fidelity Bank; UBA; Société Generale; GT Bank; FBN Bank; Cal Bank and; Bank of Africa. Currently, these banks have the required capital reserves to meet the target. In category two (2), the Bank of Ghana approved a deal which saw three (3) application for mergers. Consequently, First Atlantic Bank Merchant Bank limited merged with Energy Commercial Bank, whiles, Omni Bank Ghana Limited merged with Bank of Sahara, First National Bank, and GHL Bank Limited have merged.

However, the three resulting banks out of these mergers have all met the minimum capital requirement. For the Category three (3), saw five (5) indigenous Banks benefiting from Ghana Amalgamated Trust Limited (GAT) initiative. These banks include ADB, NIB, Omni Bank/BSIC, Universal Merchant Bank, and Prudential Bank. However, in the category (four) 4, saw the voluntary winding-up of Bank of Baroda (Ghana) Limited, an (India's state-owned international bank), voluntarily exiting Ghana—on account of strategic reasons. The bank exit comes soon after the final phase of the recapitalization exercise by December 31, 2018. The restructuration exercise saw the operational licenses of Premium and Heritage Bank revoked. And their assets transferred to Consolidated Bank Ghana (CBG), a banking institution created following the merger of five ailing banks. The Central Bank, (BoG) action was as a result of the duo failing to meet the minimum capital requirement. The evidence suggests that their operating license obtained was questionable. Meanwhile, one domestic bank, GN Bank was unable to meet the minimum capital requirement of GHS400 million as of December 31, 2018 deadline. Consequently, applied for savings and loan license, and was granted by the BoG. Furthermore, approved a transition plan for winding down aspects of the business which are not compatible with savings and loan company license (BoG, 2019).The just-ended recapitalization exercise has repositioned the banking sector as better capitalized, liquid, stronger, and more resilient. These essential steps will ensure that risk in their respective industries is appropriately regulated supervised. Again, the sector is well-governed, well-managed to restore and maintain much-needed confidence in the industry on the whole. To this end, Banks numbers in Ghana have shrunk from 33 to 23 under a banking sector cleaning exercise that led to the collapse of nine banks and three mergers. Notwithstanding the financial crisis, the Ghanaian economy continues to grow at an impressive rate. The Ghanaian banking industry, arguably, transformed into one with stronger banks that could compete at the regional level, beyond Ghana. Conversely, the just-ended cleanup exercise enhanced the resilience of the financial system to withstand-wide stress and shocked better. In particular, the central bank has implemented macro-prudential regulation to address the systemic risk it identifies in the financial sector. Risk management integrated into the strategic focus of the governance and management of financial institutions. Therefore, Shareholders of banks will exercise control over these institutions not for the benefit of shareholders and related and connected parties, but primarily in the interest of depositors, creditors, employees, and other stakeholders.

There were also many reforms beyond these core areas, innovative payment solutions that compete with traditional means of payment that are driving this shift away from cash. The central bank of Ghana has a leading role in shaping the response in redesigning digital payment systems offer consumers and businesses convenient, tailored, and cheaper and enhanced security. The development attributed to conscious efforts by the Governments and central bank to promote digital payments as an alternative to paper money. The payment systems are made feasible by the use of ICTs, help the sector improves the efficiency and effectiveness of financial services offered to customers. With the overall objectives of making Ghana a gateway to West Africa in the Sub-region and transform her into an important financial hub to reinforce existing mechanisms within the global financial system. Bank of Ghana (2003) report indicates that the payment systems Act (2003) empowered the bank to play a vital role in the establishment, operating and oversee all payment systems in Ghana. In line with its mandate to modernize and reform payments and settlement system infrastructure to reflect on today's emerging global evolution trends in digital technologies. Over the past decades, Ghana has seen significant improvement trends in payment system development driven by an emerging information communication and technology (ICT) industry. The Bank of Ghana (BoG) puts together a roadmap to reform payments and settlement system. Banking, like other economic activities, is in the midst of rapid transformation, as many would argue important structural changes seen today, is driven by the development and application of new (ICT). In particular, the importance of innovation and developing new solutions take advantage of data, digital technologies, and new delivery platforms. A great deal of emphasis is being placed on digitizing and reassessing organizational structures to be better prepared for the future of banking. Fundamentally, these lie at the heart of financial intermediation because the development and use of IT are bound to continue to revolutionize Ghana's financial services arena. Significantly, the industry has grown from a manually driven to a digitally dependent industry with ICT-enabled services and product innovation tremendously improved the lives of bank consumers in the country. More pointedly, the growth of ICT across all spectrums in Ghana's financial services environment has-improves operational efficiency and cost-effectiveness of services, offered a guarantee cutting-edge services to customers. A significant point in this paper, then transitioned of liberalizing Ghana's financial sector, with a chain of policy reform regime over the past, seen amongst other development, as evidence, within the context of the growing contribution of ICTs. The inclusion of ICTs and digital platforms resulted in the Ghana financial sector linked to additional features in the value of the payment-streams. The Bank of Ghana (BoG) reform helps Ghana migrate towards the broader use of electronic payments and digital currencies to reflect its image on a global scale. Currently, the country’s payment and settlement landscape are made up of the following channels: The Real-Time Gross Settlement (Ghana Interbank Settlement) for wholesale payment and settlementsm, CCC and ACH (medium-tier) – gaining significant use by both individuals and corporate businesses , National switch – gh-link (2012) , Small value transactions systems such as the credit cards, ATM/POS cards, debit cards, e-zwich smartcards, stored valued facilities, Internet banking and mobile phone banking have also begun to experience stronger growth. Ghana has become the latest country to commit to rolling out a universal QR code payment solution, as the country’s government seeks to accelerate the take-up of e-payments. This reduces the need for merchants to buy dedicated hardware and eases financial management, supporting small business growth. This shift has also made Ghana a regional leader in new digital banking.A cording to Raihan (2001) posits that the majority of banks are planning to introduce ICT into the banking realm, which plays a vital role in bringing efficiency in the financial sector. The inclusion of ICTs and digital platforms resulted in the Ghana financial sector linked to additional features in the value of the payment-streams. Significantly, the use of ICT concepts in the financial services has given rise to a more scientific approach, given rising from a manually driven to digitally dependent sector. The sector has migrated towards the broader use of electronic banking system due to the levels of diversified innovations, inherently increases the banks' interface and seen an improved payments landscape. The Bank of Ghana (BoG) reform helps Ghana migrate towards the broader use of electronic payments and digital currencies to reflect its image on a global scale. In Figure 3, depicts how Ghana's Payment Landscape Systems and oversight responsibilities of the GhIPSS, services including electronic payments and settlement from which it derives its name-Ghana Interbank Payment and Settlements Systems in 2007 (GhIPSS). More pointedly, GhIPSS operate e-payments schemes and infrastructure baseline within the country.

Bank of Ghana (BoG) saw the need for banking reforms and the urgent need for policy intervention to transform the economy, thus promoted relativistic and more efficient payment methods. The implementation of the Real-Time Gross Settlement System (RTGS) in 2002, which uses SWIFT messaging standards connecting all participants to the payment system platform. The Ghanaian payments industry is gradually witnessing a rapid transition of moving away from the traditional trading processed towards the real-time electronic payment system. Until recently, Ghana's economy was the predominantly cash-based economy. In particular, physical cash was the mode of payments in any transaction hence lead to more cash holdings in every purchase. In line with accelerating the shift from a cash dominant to a cash-light economy asd harmonize transactions in the banking system, The Bank of Ghana (BoG) introduced a brand name for the national biometric switch and smartcard payments system enables access to the bank and retail transactions at the outlets of other e-zwich financial institutions as well as e-zwich Point of Sale (POS) and ATM terminals. This common platform links all banking institutions at significantly reduced costs. Subsequently, in 2009, the smart card (e-zwich smartcard) was also introduced. This includes all segments of the population to help solve a problem that only a small percentage of the Ghanaian populace acquired and use debit cards. The e-zwich system offers deposit-taking financial institutions (i.e., universal banks, rural banks, and savings and loans) importantly, a platform that enables them to interoperate. The e-zwich Point of Sale (POS) supports both online and offline transactions, with uniquely designed dual capability, which means that services can be accessed from all parts of the country regardless of the communications network.In 2018, the Bank of

Ghana (BoG) launched the country's first-ever interoperability system through the Ghana Interbank Payment, Settlement System limited (GhIPSS) Delali Adogla-Bessa (2018). Interoperability has captured the attention of digital financial experts and support from the different market actors. The full-scale deployment of interoperability platform is to support the growth of the cash-lite system and advance the cause of financial inclusion by bridging the gap between the banked and the unbanked persons into the core financial ecosystem. Interoperability is an open application-programming interface (API) which enables money transfer operations between all mobile network operators and banks in the country. In practice, the user can transfer funds between wallets and from their wallets to bank accounts. Economic experts are of the view that Ghana's interoperability measures will drive new boost to financial inclusion in a country where the bank rate is close to 40%. This milestone in the Ghanaian financial system modernization forecasts new and varied uses, which include fee payments, where it is particularly relevant in rural communities. The big push for the step towards creating interoperability in Ghana aimed at providing an excellent platform for a seamless flow of digital transactions among the various payment platforms. Furthermore, creating balanced incentives for low-cost technology in a level playing field for interoperable payment schemes. The interoperability project executed in two (2) Phases. The first phase is the designed phase, began in 2017. In the build-up of the project identified relevant stakeholders in defining the project from early stages-such as infrastructure operators (GhIPSS-limited) financial institution (typically a bank), network operator (MNO), and different government actors. The important standards development and security requirement also specified as the platforms innovative feature. The project saw the interconnection of the mobile money platform, and Ghana National Switch (gh-link system) and the testing exercise carried out in this phase. Shortly after that; it was commercially launched and made it possible for customers to send Mobile pay across networks and from Mobile wallet to bank account and vice versa. The Second Phase of the implementation stage started in mid-2017 and continued until November-2018. The final phase saw the interconnection between Mobil Money and e-zwich (Ghana's biometric smart card system). Significant progress in the rollout of the final phase, thus, makes Ghana one of the few countries to achieve this Universal interoperability. Together with the three mobile money operators (Telco's): MTN, Vodafone and Airtel-Tigo, and financial institutions. Ghana's Universal Interoperability under the concept, financial inclusion triangle (FIT), has been successfully implemented. Achieving this level of interoperability contributes to digitizing cash in the Ghanaian economy.

## Discussions and conclusion

The success of reforms significantly contributes to the fiscal and financial stability Feldman and Wagner (2002). But while the reforms have brought about improvements in the banking system industry and continue to perform exceptionally well—several fundamental problems remain and need to be addressed. Major reforms were undertaken in the banking industry of Ghana and to evaluate their impact on the financial development and individual performances of the banks. Development of a financial system is measured by financial deepening, competitiveness and profitability within the banking industry raw measured by "Capital Adequacy, Asset Quality, Management Soundness, Earning performance and Liquidity" of the banks. However, the reform program overall has achieved mixed results-changing the tide of the industry, and, notably, banks, has improved considerably in the last couple of decades. But while the majority of the local banks failed to achieve satisfactory improvement, generally most of the indigenous and the foreign banks were able to improve their performance considerably, perhaps for having efficient and robust management, and compliance with the policy and guidelines.

This paper provides a comprehensive review on systemic banking crises in Ghana; thus, highlighted various reforms that have been undertaken for periods from 1980 to current issues in 2017 and beyond. With the deadline for complying with the new minimum capital requirement now behind, the uncertainty that plagued the banking sector during the implementation period seems to have waned significantly. The paper applies Koppenjan and Groenewegen (2005)'s four-layer model for institutional analysis, and how institutional factor values interplayed shaped the concept of the financial sector reforms. Significant impact on the economic growth of Ghana. Having initiated most of the reforms seen in the sector over the last two years, it is expected that BoG will take the necessary steps to enhance supervision and compliance across the industry in order to consolidate and sustain the gains made so far. Going forward, banks will have to properly streamline the various aspects of their businesses, if they are to effectively manage the potentially complex web of operational efficiency, liquidity and risk management issues, whilst maintaining a desired level of profitability.Based on the model of Koppenjan and Groenewegen (2005)'s, the paper points out that formal institutional factors (the World Bank/IMF), played an active role which remarkably influenced the dimension to the understanding of the banking reform sector. The government of Ghana and the central bank also played a leading role examined the institutional factors and actors that interacted in the Ghanaian banking reform process. The interaction between these actors and agents defined the transition process and affected the nature and output of the reforms. The impacts of the institutional environment on the technical feasibility and economic viability were analyzed, by combining the institutional evaluation with the analyses mainly concentrated on the action at level 1 and 3. The import is adopting the historical, institutional approach, the success of the reform of Ghana traced to its policy development process. The institutional framework identified that the banking regulation was inherently weak, an indication of the consequences of low levels of confidence in the domestic economy. Based on the institutional theory, the paper pointed out institutional elements which allowed analyzing reforms to operate with the influence on the system and the industry. The approach of the institutional theory provided government tailored several significant steps towards policy-making processes, to achieve much-needed reforms and laid a better financial system foundation.

The impact of ICT has contributed mainly to deepening banking services in Ghana with the more significant product and services, and enhanced ability to deal with efficient banking. The success of e-finance rides heavily on a comprehensive banking sector reform and implementation programs led to technological innovations with the introduction of e-banking, SMS banking, telephone banking, etc. Today, the banking industry faces rising competition with digitally driven retail banking franchises. The inclusion of ICTs and digital platforms resulted in the Ghana financial sector linked to additional features in the value of the payment-streams. Significantly, the use of ICT concepts in the financial services has given rise to a more scientific approach, given rising from a manually driven to digitally dependent sector. The sector has migrated towards the broader use of electronic banking system due to the levels of diversified innovations, inherently increases the banks' interface and seen an improved payments landscape identified as the expansion of IT-based services. The Ghana, payment systems, landscape today is being driven by economic, financial, public policy factors, in addition to a thriving in payment systems development. Relating to the question, the paper concluded that the research had provided a better picture of how the Ghanaian Banking industry looks today.

Overall, the financial sector in Ghana is made up of a wide array of institutions and instruments, comprises the central bank (Bank of Ghana), which is the apex financial institution. More research is needed to better understand comprehensive nature of Ghana’s banking sector, including the detailed information on policy responses associated with banking crises. And give clerare understanding of the causes and consequences of crises, and how best way to resolve them. In conclusion, latest technological innovations have been key to the opening up of the financial services market – one which has traditionally been manually performed – to new providers, creating a new competitive environment that is in full swing.

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