The Impact of Financial Sector Reform on Bank Efficiency and Financial Deepening for Savings Mobilization in Ghana

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Abstract

In the 1980s, as part of their structural adjustment programs, many developing countries embarked on financial sector reforms to remove the vestiges of financial market repression in order to promote financial market efficiency and savings mobilization. As part of Ghana's financial sector reform, supported by the World Bank and the IMF, the government launched the Financial Institutions Sector Adjustment Program (FINSAP) to address the endemic problems of Ghana's financial sector.

This study provides a detailed examination of the problems of Ghana's banking sector that led to the implementation of the financial sector reform. Based on problem analysis, this study raises various policy research questions as a basis for analytical framework and hypotheses formulation and testing.

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Abbreviations and Acronyms

ADB	Agricultural Development Bank
AFRC	Armed Forces Revolutionary Council
ATM	Automatic Teller Machine
BBG	Barclays Bank of Ghana
BHC	Bank for Housing Corporation
BOG	Bank of Ghana
BSD	Bank Supervision Department
EBG	Ecobank Ghana Limited
FINSAC	Financial Sector Credit
FINSAP	Financial Sector Adjustment Program
CAL	CAL Merchant Bank
CEPA	Center for Policy Analysis
COT	Commission on turnover
CUR	Currency outside the banking sector
DD	Demand deposit
EBG-IML	Ecobank Investment Managers Limited
ECO	Equal credit opportunity
ERP	Economic recovery program
ESL	Ecobank Stockbrokers Ltd.
GCB	Ghana Commercial Bank
GDP	Gross Domestic Product
GSE	Ghana Stock Exchange
IA	Intermediation approach
ICB	International Commercial Bank
M3	Broad definition of money
MERCHANT	Merchant Bank (Ghana) Ltd.
NBFI	Non-Bank Financial Institutions
NIB	National Investment Bank
NPART	Non-Performing Asset Recovery Trust
PA	Production approach
QM	Quasi money
ROA	Return on assets
ROE	Return on equity
SSA	Sub-Saharan Africa
SCB	Standard Chartered Bank
SSB	SSB Bank
TTD	Total deposit
TARCSIMEL	An acronym for measuring banking performance
TRUST	Trust Bank (Ghana) Ltd.

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Executive Summary

The efficiency of financial markets in promoting financial deepening and savings mobilization of financial resources has been recognized by policy makers and economists such as Ronald McKinnon (1973) and Edward Shaw (1973). McKinnon postulates that an increase in holding financial assets (financial deepening) by the public promotes savings mobilization which leads to higher levels of savings, investment, production, growth, and poverty alleviation. However, financial market intervention by governments in developing countries constrains the potential of financial markets in mobilizing savings for growth and development.

In the 1980s, as part of their structural adjustment programs, many developing countries embarked on financial sector reforms to remove the vestiges of financial market repression in order to promote financial market efficiency and savings mobilization. As part of Ghana’s financial sector reform, supported by the World Bank and the IMF, the government launched the Financial Institutions Sector Adjustment Program, hereafter referred to as FINSAP, to address the endemic problems of Ghana’s financial sector.

This study provides a detailed examination of the problems of Ghana’s banking sector that led to the implementation of the financial sector reform. Based on the problem analysis, this study raises various policy research questions as a basis for analytical framework and hypotheses formulation and testing.

Answers to the policy research questions and hypotheses were assembled through field research in Ghana. These include the administration of survey questionnaires to (a) bank managers, (b) bank staff and employees, (c) bank examiners and regulators, and (d) bank depositors. Other methodologies include parametric statistical analysis of prudential, audited bank data and other macro-financial and macroeconomic data over the study period from 1980 to 1997.

On a micro level, the study presents an index of banking efficiency and bank performance for comparative analysis of the banking sector in Ghana. The study also examines the efficacy of existing and new policy changes regarding prudential regulation and bank supervision in promoting banking efficiency, soundness, and safety.

The study shows that the financial sector reform has had a considerable impact on the capacity of the Ghanaian banking sector to mobilize financial savings. The post-reform era witnessed the establishment of nine new banks, other non-bank financial institutions, and the so-called "magic banks" which were competing with the traditional banking sector for savings mobilization.

An important emerging feature of the post-reform financial market development in Ghana is the introduction of innovative information technology in the delivery of financial services to the public. The introduction of automatic teller machines (ATM) by the foreign banks as well as some of the newer ones have set the financial market on the path of electronic banking in Ghana. The repackaging of savings instruments through the introduction of the “Gold Account” by

Standard Chartered Bank, the “Sika Card” by SSB Bank, Econbank’s “Econet” and the “Barclay card,” have created opportunities for savings mobilization and financial deepening.
The privatization of the banking sector has been on course. Two banks have been privatized and listed on the Ghana Stock Exchange. The remaining government-owned banks are being prepared for privatization or merger with other stronger banks before being divested.

The results of the analysis of the efficiency index (TARCSIMEL) shows that the efficiency indicators of the banking sector have improved since the financial sector reform. The transaction costs of the banking sector have been reduced while the quality of the assets and the capital adequacy position has been greatly enhanced.

However, there are a number of problem areas and unfulfilled expectations associated with the financial sector reform. The study shows that the financial sector reform was not accompanied by a substantial increase in deposit rates by banks to obviate the negative impact of inflationary pressures on deposit rates. As a result, aggregate savings with the banking sector expressed as a ratio to gross domestic product (GDP) declined after the financial sector reform. The disaggregated savings of demand and time deposits also show the same downward trend.

Thus, a decade after the launch of FINSAP, savings rates continue to decline. Total deposits as a ratio of GDP fell from 13.45% (pre-reform) to 10.88% (post-reform). Compared to East Asia's 37% and Latin America's 20%, Ghana's savings rate is very low. Part of the reason for the weak savings response is that an unstable macroeconomic environment has undermined the reforms. From a low of 10.1% in 1992, inflation peaked at 70% in 1995 and only recently moderated to 22% at the end of 1997. The net effect is that real interest rates on deposit rates have been negative for many years after the financial sector reform.

The imbalance in the financial sector has led to market failure in pricing financial assets. The higher pricing of risk free government Treasury bills over risky loans resulted in the mismatch of yields on private sector loans and government Treasury bills. In addition, the comparative high yield on government Treasury bills, as compared with deposit rates, gave rise to savings flight from the banking system to the short-term money market of Treasury bills.

As a result, portfolio allocation by the banking institutions has been in favor of short-term government Treasury bills. This has reduced the incentive for savings mobilization and efficient allocation to the most productive sectors of the economy. Also, government fiscal deficits accommodated by floating billions of cedis in Treasury bills crowds out the small- and medium-sized enterprises from the credit market. Consequently, domestic private lending has not increased to an appreciable level.

FINSAP has not made a significant impact on the term structure of bank lending in Ghana. The assets of Ghanaian banks consist primarily of short-term investments, dominated by Treasury bills. High nominal interest rates, fueled by large government deficits, have provided a relatively safe outlet for bank’s profit maximization, leaving a big gap in the long-term segment of the market.

FINSAP encourages a consolidation of banking activities and downsizing, as a means of increasing bank efficiency. One negative effect of this was the reduction of the national reach of banking services before new structures could be put in place to provide alternative banking services for the rural population. As a reaction to this rapid phase-out of formal banking in rural communities, informal finance has expanded, presenting the challenge of integrating the informal sector with the formal sector and harnessing the resources of the informal sector for micro-finance and rural credit.

Although there has been some progress in the privatization of state owned banks and the formation of many private financial institutions, the dominant position of the four largest commercial banks remains entrenched. As a result, competition in the banking sector is still low. The oligopolistic nature of the industry means that the smaller and more efficient private banks, which have already been established, continue to earn "super-normal" profits by pricing as followers of larger banks.

The macroeconomic imbalance of government budget deficit and its monetization tends to weaken the monetary control powers of the Bank of Ghana. As a result, the indirect monetary control powers of the Bank of Ghana are found to be ineffective in stabilizing the macroeconomic aggregates that provide enabling environments for savings mobilization, growth, and poverty alleviation.

The survey results also confirm the continued lack of confidence in the banking system as a result of the unorthodox policies of the government in the 1980s and 1990s. The majority of the respondents indicated that the lack of banking confidentiality and fear of government probes of individual bank accounts serve as a deterrent to deposits, especially large deposits. Additionally, the continued inflationary pressures and the perennial depreciation of the cedi also affect the public’s confidence in depositing their funds with the banking sector. As a result, depositors have increased their asset holdings in foreign denominated bank accounts as a hedge against inflationary and depreciating value of the cedi.

One positive impact is the disappearance of the long waiting time at some of the larger banks that have introduced ATMs and computers. However, at those other state-owned banks, some depositors still complain about delays at banks, especially those banks that are not yet computerized.

In terms of banking hours, the majority (76.2%) of the respondents in a survey indicated their dissatisfaction with the current banking hours. Sixty-five percent (65%) of the respondents indicated their preference for longer hours from 8.30 am to 4.00 p.m. On the other hand, 35% indicated their preference for bank opening hours on Saturdays.

The study also found that proximity of banks to place of work and/or residence were major determining factors for the choice of banks by depositors. Over 80% indicated that their choice of banks was largely influenced by close proximity to work place or of residence. This finding has major policy implications for branch banking network and mobile banks serving the suburbs of the major metropolitan cities of the country.

We also tested the impact of the government's 1991 decision to start paying government employees and civil servants through direct bank deposits. Our survey shows that the majority (87%) of the beneficiaries found the practice very convenient. Additionally, the majority indicated that the practice helped their savings habits. This was confirmed by the bank managers. However, there is currently insufficient data to test whether the above policy change has resulted in increased savings by the government employees because of the direct deposit through the banking system.

The study shows that the reform of the banking sector had no significant effect on the use of checks as a means of payments. The financial system remains cash-based with large liquidity outside the banking system. This has limited the potency of indirect monetary policy to stabilize macroeconomic aggregates for economic growth. In response to survey questionnaires, the bank management indicated their reluctance to accept checks in payment due to the following factors: (a) the lack of universal acceptability by the public, merchandise houses, and retailers, (b) lack of verification due to lack of universal identification number of depositors and customers, (c) lack of credit bureaus, and (d) the slow clearing system of checks drawn on third parties.

One major objective of FINSAP is to upgrade the skills and educational training of the staff of the Bank of Ghana at the Bank Supervision Department. It is encouraging to note that over 85% of bank examiners are university graduates, and over 14% hold post-graduate degrees. However, the majority indicated that they had not attended any professional courses of training since joining the Bank. In terms of access to computer and information technology, over 85% of the bank examiners (both on-site and off-site) indicated that they had no access to computers on the job. As a result, bank examination results had to be processed manually on typewriters. This practice, as the examiners admitted, leads to low productivity and delay in completing bank examination results. Additionally, the lack of computerization of the commercial banks, especially in the rural areas, retards their progress on the job.

These findings were corroborated by the results of the bank employee survey. The survey result shows that over 62% indicated that they have not participated in any professional training since joining the bank. Also, in terms of job satisfaction, over 51% indicated their displeasure with their current work status due to lack of professional training and the lack of opportunity for promotion and professional advancement. This finding is very troubling and needs further analysis.

The privatization of government owned commercial banks has raised the issue of public confidence and safety of depositor funds in times of banking troubles. Thus, the issue of bank deposits insurance came to the forefront. The majority of bank managers indicated their preference for the introduction of bank deposit insurance to cover depositor funds in the event of bank failures. This response was also corroborated by depositors who expressed their pleasure at seeing their deposits protected by some form of insurance.

The results of our study show that there has been a redirection of credit away from the agricultural and the industry sectors that were favored during the pre-FINSAP era. The beneficiaries of increased credit are those sectors such as construction, service, retailing, and hotels, which are perceived by the banks to be less risky than the agricultural and industry sectors. As a result, the agricultural sector's share of GDP, which rose to 60% of GDP before the pre-reform era, had declined to 40.8% in 1997.

The goals of the country's Medium-Term Coordinated Program of Economic and Social Development, popularly referred to as "Vision 2020," prescribes a savings ratio of 20% by the year 2000. This savings rate was to sustain an average real GDP growth rate of 8 percent so that by the year 2020, Ghana would have advanced to a middle-income country with an increased standard of living comparable to that of Singapore. However, Ghana's current savings rate is very low to support such a growth prospect.

The policy dilemma facing Ghana is the problem of sustaining growth and development in the face of falling savings mobilization. This raises the policy dilemma of how to increase financial savings in order to promote economic growth. The policy dilemma originates from the realization that high inflationary pressures in Ghana after the reform period resulted in negative real interest rates which provides disincentives for savings mobilization. Thus, if no action is taken to reduce the inflation rate to increase savings, this may lead to further widening of the savings/investment gap and deepen Ghana's dependence on foreign sources of funds for domestic projects. Dependence on unpredictable foreign sources of capital may lead to a higher debt service burden and a slowdown in foreign asset accumulation for financing domestic projects. The increased debt burden may also put severe pressures on Ghana's foreign exchange rate, which may cause depreciation of its local currency.

The role of the Bank of Ghana is to control and regulate aggregate money supply in order to stabilize the domestic economy through price and foreign exchange rate stability. However, in practice, the monetary policy objective of the Bank of Ghana conflicts with the continuous budget deficit of the government. Thus, the Central Bank must have a certain degree of autonomous monetary policy in order to stabilize the macroeconomic environment for growth and poverty alleviation. Additionally, the study offers the following recommendations as additional challenges to enhance efficiency of the banking sector for financial deepening and savings mobilization:

- There is the need to institute fiscal discipline and management of government revenue and expenditure in order to avoid excessive fiscal deficit accommodated by increases in the money supply that fuels inflation and leads to negative deposit rates.

- The role of monetary policy in stabilizing macroeconomic variables will be enhanced by an accommodating fiscal policy that does not conflict with BOG's prudential monetary policy. The establishment of an independent central bank to control monetary policy is strongly recommended as a matter of policy expediency. Furthermore, Ghana may learn the virtues of cash budgeting from the Tanzanian government that has helped to reduce the high inflationary pressures and interest rates in that country.

- The closure of many banks in the rural areas after the financial sector reform also reduced savings mobilization. Policy changes that encourage moving banking services closer to the depositors will enhance savings mobilization. This can be accomplished by "banks on wheels" to the rural areas of the country, introduction of ATM machines, branch bank networks to the suburbs of the urban areas, and the promoting of the Post Office banking system that has been in existence since 1888 in Ghana.

- It is recommended that the banking hours 8:30 a.m. to 2:00 p.m., from Monday - Fridays should be extended from 8:30 a.m. to 4:00 p.m. In addition, the extension of banking hours to Saturdays will satisfy the banking needs of those workers who find it difficult to take time off from their jobs to go to the bank during the week.

- In order to integrate the informal financial system into the formal banking system, it is necessary for the formal banking sector to embrace the introduction of innovative savings products such as the "Susu savings scheme" initiated by some other banks.

- The imposition of high reserve requirements on the banking sector amounts to forced lending to the government. This leads to high spread between lending and deposit rates. A change in government policy to lower the reserve requirements on deposits would allow for banking sector portfolio diversification and this would narrow the spread between lending and deposit rates. In addition to this change, the government should endeavor to synchronize its sources and uses of funds by exploring opportunities to issue long-term bonds in order to raise needed funds for long-term projects. This may remove a lot of pressure from the short-term securities market.

- Savings mobilization would be enhanced by the provision of high quality bank services. The adoption of high professional standards, prompt attention to depositors' needs, and reduced time involved in withdrawing or depositing funds would reduce the transaction cost of banking. This could be achieved by utilizing bill-counting machines, computerizing banking services, and displaying sensitivity to depositors' complaints. Hiring and training of qualified staff and management team will also be helpful.

- Financial deepening would also be accomplished by the introduction of improved banking products such as credit cards, commercial paper, credit counseling, travelers checks, money orders, bankers acceptance facilities, and other services that facilitate commercial transactions.

- The excess liquidity outside the banking system is also due to the lack of universal check acceptance by the public and the banking system. This leads to a cash-based society. One contributing factor is the high float due to long delays in clearing checks through the banking system. The lack of a national identification number of individuals decreases the chance of recovering bounced checks. The issue of national identification numbers, the establishment of credit bureaus, and national clearing systems of checks would encourage confidence in accepting checks. This would promote financial deepening and savings mobilization.

- The use of checks and the reduction of cash holdings should be encouraged by the establishment of legal framework and the enforcing of “returned check laws” in order to increase the banks’ and the public’s acceptance of checks.

- The introduction of innovative banking products and services, such as the “the Sika card” and other pre-payment devices, may reduce the excessive liquidity outside the banking sector and enhance savings mobilization in the banking system.

- In order to ensure public confidence in the banking sector, the introduction of bank deposit insurance should be considered as a necessary policy change in order to cushion bank depositors from bank failures or insolvency. This may also protect the government from unnecessary private bank bailout during times of bad management decisions, as was the case in the late 1980s.

- The protection of consumer rights from overzealous bank officials should be safeguarded by the introduction of Consumer Bill of Rights that ensures the public’s equal access to credit. A cornerstone of this bill should be the enactment of various consumer protection regulations such as the Equal Credit Opportunity (ECO) and Truth in Lending and Disclosure.

1. Summary of principal themes and anticipated policy implications

1.1 Statement of the problem

Over the past decade, many Sub-Sahara African countries have embarked on structural adjustment programs designed to reverse their poor economic performance. In all, 19 Sub-Sahara African countries have made serious efforts to transform their economies into a market- based economic system, while 15 other countries adopted some limited form of structural adjustment programs.[1] However, many of these countries realized that their structural adjustment programs could not succeed without a well-functioning financial sector mobilizing financial resources for investment and private sector growth.

Ghana is one of those countries that had undergone structural adjustment and financial sector reform aimed at enhancing savings mobilization and credit allocation to the private sector. Ghana's case was unique for several reasons: First, Ghana was the first Sub- Sahara African country to gain political independence from the British colonial rule in March 7, 1957. Secondly, at the time of independence, Ghana was the richest country among the Sub-Sahara African countries outside South Africa; its per capita income compared favorably with that of South Korea. Yet, Ghana experienced the sharpest economic decline, which also destabilized its financial sector. Ghana also became the first Sub-Sahara African country to formulate a comprehensive financial sector reform to deregulate the financial markets from decades of government intervention.

However, a decade after the financial sector reform, critics argue that the reform has had little impact on financial savings mobilization. Instead, the reform led to a macroeconomic imbalance of high inflationary pressures, high nominal interest rates, and continuous devaluation of the local currency.

1.2 Policy Research Questions

Critics of FINSAP argue that the liberalization measures instituted in 1988 as part of the financial sector reform were not far reaching enough to solve the root causes of the Ghanaian financial sector problems. They argue that the reforms were not geared towards full liberalization of interest rate policy that militates against the successful functioning of financial markets. Thus, the relevant questions that were raised about the banking sector reform include: (a) what are the remaining reform issues and constraints to banking efficiency and savings mobilization in Ghana? (b) How did commercial banks react to the financial sector reform? (c) What regulatory changes were instituted? (d) How did the policy reform affect banking efficiency and savings mobilization? (e) How did the public, especially depositors, react to the policy changes after the financial sector reform?

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[1] V.V. Bhatt, On Financial Sector Reform and Development: A Case Study of Ghana, African Review of Money, Finance and Banking, Volume 1 (1993), p. 5.

1.3 The Objective of the Study

The objective of this study is to examine the policy research questions that have been raised in the previous section. Specifically, the study examined, in detail, the institutional and policy changes that were initiated because of the financial sector reform in Ghana in the late 80's and early 90's. Our research also examined the impact of the financial sector reform on the efficiency of savings mobilization and credit allocation to the private sector. Furthermore, the study analyzed some of the problems remaining after the financial sector reform and what further adjustment efforts may be needed.

On a micro level, we have constructed an index of banking efficiency and bank performance for comparative analysis of the banking sector in Ghana. We also examined the efficacy of existing prudential regulations and bank supervision in promoting banking efficiency, soundness, and safety. Based on the results of the above analysis, relevant policy recommendations were offered to promote banking efficiency and financial deepening for savings mobilization and growth with poverty alleviation. In addition, this study draws lessons from Ghana's experience that may be applicable to other African countries facing similar problems.

2. The Characteristics of the Ghanaian Financial Sector before Reforms

2.1 Introduction

The financial system of Ghana has been characterized by excessive governmental regulation, underdevelopment of the financial sector, and encroachment on the authority of the BOG. Unlike the U.S., where the chairman of the Central Bank, known as the Federal Reserve System, is nominated by the President and confirmed by the Senate, the governor of the Bank of Ghana, in principle, is directly appointed by the President, and serves at the discretion of the government. Thus, even though BOG is in principle supposed to be independent of the government, in practice, the operations of the Bank are not insulated from political pressures from the government. This non-independence of the Bank manifests itself in the government's treatment of the Bank as an extension of the Ministry of Finance in carrying out the economic objectives of the government. Thus, the functions of the Bank are carried out in consultation with the government. This practice has compromised the autonomy and neutrality of the Bank of Ghana as a monetary control institution for the stabilization of the nation's economy.

Unlike the U.S. financial system, characterized by private ownership of financial institutions, all financial institutions, with the exception of two foreign majority-owned banks, were owned by the government. This has led to a lack of competitive environment, market inefficiencies, and political patronage in the banking system. In addition, since managers of these institutions do not share any risk of loss, they have a propensity to take on additional risk without paying any price for their actions.

A major consequence of the government's ownership of banking institutions is the control and regulation of interest rates, which distorts the allocation functions of interest rates in any market economy. In order to lower the cost of borrowing to consumers, the business community, government and non-government agencies, the government imposed ceilings on commercial bank lending/borrowing and deposit rates. Consequently, with inflation running at double or triple digits,[2] the real rate of interest was negative in the 1970's and 80's. As a result, many potential savers refrained from saving in the banking system. This led to excess liquidity outside the banking system, which fueled inflation and further weakened the monetary control powers of the Bank of Ghana.

In addition, the low lending rates provide no incentive for commercial banks to lend money to the private sector. This resulted in large excess liquidity in the banking system. In view of this excess liquidity in the baking system, and since banks would have to pay interest on savings accounts, the commercial banks were discouraging potential depositors from opening savings accounts, customers were encouraged to open checking accounts, which did not attract interest payments.[3] The unintended consequence was to decrease private savings and encourage excessive aggregate demand, which fueled inflation.

As a means of controlling aggregate money supply and inflation, the Bank of Ghana imposed credit ceilings on bank lending to the private sector. This instrument has become the predominant monetary control policy instrument of the Bank of Ghana. However, critics argue that this policy has an unintended negative impact on excess reserves in the banking system resulting in a lack of competition among lending institutions, and inhibiting the development of an efficient money market in Ghana.

A major feature of the Ghanaian financial system is excessive borrowing from the banking institutions by the government. In order to induce the banking sector to provide loans to the government to cover its budget deficits, commercial banks were permitted to include short-term government Treasury bills as part of the short-term liquid assets that could satisfy their cash reserve requirements. As a result, many commercial banks preferred to hold large portfolios in government short-term Treasury bills and very little assets in private business loans. This deprived small and medium-size enterprises of financial capital for business expansion.

Unlike the U.S., where commercial and savings and loans banks are required to have coverage from one of many insurance funds, there is no insurance fund to cover commercial banks and savings and loans in Ghana. Consequently, the government, as the owner of commercial banks and savings and loans, has to cover the risk of loss for any insolvent financial institutions.

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[2]Three times in Ghanaian history, inflation reached over 100% in 1987, 1981 and 1983. Other times it stayed in double digits.

[3]The principal investigator, while on a visit to Ghana in 1980, was denied an application to open a savings account at Standard Chartered Bank in Accra. The bank official tried to convince the investigator to open a checking account, which does not attract deposit interest payment by the bank. The official explained that because of interest rate control, the bank could not earn enough interest on loans to pay interest on savings accounts by bank depositors.

One of the cornerstones of a market economy is an efficient capital market that facilitates the accumulation of financial capital for business expansion. Unlike the U.S., which can boast of a well-developed capital market, the Ghanaian financial system lacks a well-developed capital market as a means whereby surplus funds from investors can be pulled into productive investment opportunities.

A World Bank study of the Ghanaian banking sector (1988) concludes that it was characterized by (a) inefficiency and high operating costs, (b) huge non-performing loan portfolios, (c) inadequate provisions for loan losses, (d) insolvency of the banking system, (e) capital inadequacy, and (f) inflated profits.[4] The study also shows that the banking sector had deteriorated because of the general economic decline during the 1970s and early 1980s.

Others argue that the inefficiency of deposit mobilization by the banking system may be attributed to inferior quality of a number of commercial banks' customer services. Additionally, the limited scope of financial instruments and banking services discourages increased savings mobilization. It is also argued that banks in general find it unnecessary to innovate if they do not face any stiff competition from within or from outside. This lack of effective competition may be the result of the continued state ownership of commercial banks[5] in Ghana.

Another factor that may account for the low saving in the Ghanaian financial sector is the lack of confidence in the banking system. The government, in violation of the confidentiality of individual banking accounts, passed the infamous AFRC decree 17 in 1987, which allowed the government access to individual bank accounts without the knowledge of the individual bank account holder. As a result, many individual depositors pulled their savings from the banking sector for fear that the government might question them about the sources of their savings.

The inconvenience of banking hours has also contributed to financial disintermediation from the banking sector. In a survey by Aryeetey and Gockel (1989), they found that regular banking hours are not convenient for market women; many of them prefer to save with informal savings institutions. The same complaint about the inconvenience of the traditional banking office hours is often heard from office workers. Thus, a change in the banking hours or addition of weekend banking hours may be necessary to encourage more people to put money in the banking system. However, official banking hours are regulated by the Bank of Ghana (BOG). The banks therefore are required to obtain permission from the BOG before changing their working hours to suit the convenience of the bank customers. This restriction limits the ability of the banks to respond to the needs of the bank customers in terms of convenient banking hours.

The lack of adequate prudential regulatory enforcement and supervision of commercial banks has been a major cause of problems in Ghana's banking sector during the 1970s and early 1980s. In

[4] The World Bank, Ghana Financial Sector Adjustment Program, May 1988.

[5] Ghana Commercial Bank, the largest commercial bank was privatized and listed on the Ghana Stock Exchange.

the absence of vigorous enforcement of prudential regulations and bank supervision, less attention was paid to the provision of required reserve and capital requirements. The consequence has been the insolvency of many banks in Ghana and other SSA countries.

A World Bank Development Report (1989) indicates that regulation and bank supervision in developing countries should emphasize compliance with monetary policy and foreign exchange guidelines. Additionally, the goal of bank supervision should be to encourage the promotion of banking sector's safety, stability, and efficiency.

The efficiency of the banking system's operation is also constrained by the Ghanaian economy's technological underdevelopment and information asymmetry (limited information). Unlike the U.S., where automation and the use of computers have increased the productivity and efficiency of bank employees, the production of banking services in Ghana is labor intensive; bank ledgers, customer accounts, and other records are processed by hand. This leads to low productivity, under-utilization of human capital, and inefficient operation in the banking sector. In view of these inefficiencies, which result in a considerable amount of waiting time at the banks, a large section of the Ghanaian population prefers to hold liquid cash outside the banking system.

The macroeconomic imbalances caused by high inflation, resulting from continuous government budget deficit, discourage the public from holding financial assets and increased savings in the banking system. This has resulted in large currency holdings and savings outside the banking sector and the creation of a booming informal cash sector. A World Bank study (1994) concludes that Ghana has the potential for faster growth if policies are designed to improve the efficiency of savings mobilization through the banking system, accompanied by efficient allocation of resources to the productive sectors of the economy. It was estimated that by channeling about 16 percent of savings currently held outside the banking sector into the banking system, there is the potential for raising economic growth and poverty reduction by one percentage point (World Bank, 1994).

2.2 The Economic Recovery Program

By 1983, the economy of Ghana was in a state of total collapse. In April of 1983, the government, in collaboration with the World Bank and the International Monetary Fund (IMF), embarked on a comprehensive Economic Recovery Program (ERP) to reverse Ghana's poor economic performance. The various policy initiatives included a massive devaluation of the Ghanaian currency, removal of controls on foreign exchange transactions, decontrol of domestic prices, and other measures to increase the free market system. One significant impact of the macroeconomic policy change in 1983 was the reduction of the inflation rate from over 100 percent in the 1970s and early 80s to 10 percent in 1991. This policy change was also accompanied by growth in GDP.

However, despite these successful policy changes, the financial sector remained weak and could not mobilize significant resources to sustain the economic reform program. By 1987, the cumulative effect of the record devaluation, excessive regulation of commercial banks, market inefficiencies, and heavy losses by the banking sector resulted in financial crisis. The severe losses suffered by the commercial banks pushed many of them to a state of bankruptcy or technical insolvency.[6]

Since the government owned the majority of the troubled banks, and in the absence of a private banking insurance, the government had to absorb all losses suffered by the banking sector in order to prevent runs on the banks.

In response to the financial crisis in the banking sector, the government of Ghana, in collaboration with the World Bank and the IMF, embarked on a comprehensive financial sector reform known as the Financial Institutions' Sector Adjustment Program, hereafter referred to as (FINSAP) to address the emerging problems of the financial sector

3. The Financial Sector Reform

3.1 The Financial Sector Adjustment Programs I & II

By the late 1980s, the World Bank and the Ghanaian Government had agreed that a reform and restructuring of the financial system was indispensable to a successful economic recovery program. With technical and financial assistance from the IDA through a Financial Sector Credit (FINSAC 1), the government embarked upon a financial sector reform program (FINSAP) in 1988. The objectives of the program were:

a. To undertake restructuring of financially distressed banks
b. To improve savings mobilization and enhance the efficiency of credit allocation
c. To enhance the soundness of the banking system through an improved regulatory and supervisory framework
d. To develop money and capital markets
e. To establish a non-performing assets recovery trust

The IDA-supported study identified seven banks as distressed. The restructuring of these banks involved the following measures: (a) reconstitution and strengthening of affected banks' Board of Directors, (b) closure of unprofitable branches, (c) reduction of operating costs through retrenchment of staff, (d) cleaning of balance sheets by off-loading non-performing loans to state-owned enterprises, loans guaranteed by the government of Ghana, and non-performing loans granted to the private sector. Other changes included upgrading managerial capacity and deficiency of distressed banks, intensified staff training for affected banks, and the provision of sufficient capital and liquidity to enable the distressed banks to operate in a self-sustaining manner after restructuring.

[6] Insolvency means a situation where a financial institution's liabilities exceed its total assets. An auditor's report shows that in 1987 the majority of the government-owned commercial banks were in technical default as their liabilities exceeded their assets.

Part of the restructuring process involves swapping government bond issues with nonperforming loans, and other Government-guaranteed obligations to state-owned enterprises. In addition, the nonperforming assets of the distressed banks were transferred to a newly created and wholly government-owned agency, the Non-Performing Assets Recovery Trust (NPART), whose mandate was to realize proceeds from such assets to the extent possible. In return, the distressed banks were issued interest-bearing FINSAP bonds to be redeemed in annual installments. A sunset provision in the 1989 Law that set up NPART limited the life of NPART to a six-year time frame. The above reforms known as FINSAP 1 were carried out 1988 - 1990.

Table 1 shows the nonperforming loans of the banking sector in 1990. This shows that the nonperforming loans of the two foreign-owned banks (Standard Chartered and Barclays Bank) were the lowest.

The high level of nonperforming assets suggests one or more of a number of problems. First, the local banks were established as a response to a dearth of credit to customers or sectors considered by the expatriate banks as risky. Apparently, the expatriate banks customarily lend to creditworthy people, while the local banks deal with the marginal customers - the more risky borrowers that would not be accommodated by Barclays Bank and Standard Chartered Bank. Secondly, the local banks appeared to be characterized by poor credit decisions, especially due to government encouragement to lend to the agricultural sector.

In 1990, FINSAP 2 was launched with the following objectives: (a) to reduce state shareholding in Ghanaian banks, (b) to continue the bank restructuring program which was launched under FINSAP 1, (c) to intensify the recovery of non-performing loans by NPART, and (d) to enhance the effectiveness of a broad range of non-bank financial institutions.

Table 1: Non-Performing Assets Transferred to NPART by Banks (cedi millions)

Bank	Amount of NPAs Transferred to NPART (cedi millions)	% of total NPAs Transferred to NPART
GCB	14,321	28.4
SSB	12,585	25.0
NSCB	725	1.4
ADB	1,293	2.6
NIB	6,623	13.1
BHC	12,853	25.5
Barclays	689	1.4
SCB	462	0.9
MBG-	881	1.7
Total	50,433	100

In line with the policy of liberalizing the financial sector by reducing the state's direct involvement in the banking system, the government embarked on a policy of privatizing state-owned banks. Prior to implementing the divestiture program, the government had initiated a bank-restructuring program in order to make banks attractive to investors. Under FINSAP 2, steps were taken to strengthen respective bank management and implement new procedures relating to credit risk management, financial management, and human resource management. New and computerized operating procedures were to be introduced in order to generate public confidence and customer satisfaction.

3.2 The Banking Law of 1989

The Banking Act of 1970 did not provide clear guidelines for minimum capital requirements, risk exposure, prudential lending limits for banks, provisions for possible loan losses, and methods for interest accrual on non-performing loans. Thus, a singular importance to the reform measures was the new Banking Law of 1989. The law explicitly defines the minimum capital requirements for various types of banks and for bank ownership. These are as follows:

a. The minimum paid-up capital for commercial banks with at least 60% Ghanaian ownership was fixed at 200 million cedis.
b. For foreign banks with Ghanaian ownership less than 60%, the minimum paid-up capital required is 500 million cedis.

c. Development banks are required to maintain a minimum paid-up capital of one billion cedis.
d. Each bank is required to maintain a minimum capital adequacy ratio of 6 percent, although the BOG has the discretion to increase it.

The 1989 Banking Law also dictates explicit safeguards as well as penalties for excessive risk taking. These include:

a. Maintenance of a reserve fund from annual profits. Funding depends on the ratio of reserve fund balances to paid-up capital, and this can be as high as 12.5% of net profits.
b. Banks cannot lend more than 25% of their net-worth by way of secured loans and not more than 10% of net-worth by way of unsecured credit.
c. Banks may not undertake non-bank activities directly. They can do so only through subsidiaries. In any case, the Law regulates equity and loan exposure of a bank in such subsidiaries, thereby preventing insider lending.

Bank of Ghana's examination and supervisory functions have been upgraded, and a comprehensive system of reporting was introduced to enable Bank of Ghana to carry out systematic on-site and off-site analysis of any bank's performance and financial condition. If necessary, Bank of Ghana can issue cease-and-desist orders, and even take control of banks that are financially weak or have fallen short of the provisions of the Banking Law. Penalties in respect to non-compliance with provisions of the 1989 Banking Law have been increased in order to make them effective law.

Another important reform measure introduced was Non-Bank Financial Law of 1993 which contains the following main features:

a. Coverage of the NBFI Law is for discount houses, finance companies, acceptance houses, building societies, leasing and hire-purchase companies, venture capital funding companies, mortgage financing companies, savings and loans associations, and credit unions.
b. The minimum capital requirement for the establishment of an NBFI was set at 100 million cedis.
c. The minimum capital adequacy ratio is set at 10% of risk assets, and the Bank of Ghana has the authority to prescribe the minimum level of liquid assets. Exposure limits are put at 15% of net worth for secured advances and 10% of unsecured advances.
d. Unlike the pre-reform era, when money lenders had to be licensed by the police and other nonbank institutions had to obtain their licenses from the Registrar General's Department, the BOG is now the designated authority for licensing and regulating NBFIs.
e. NBFIs can accept deposits from the public, but only for a fixed period of not less than three months, unless prior exemption from the BOG has been granted.

The liberalization of the banking sector and the subsequent enactment of the new Banking Law and the NBFI Law appeared to have streamlined the emergence of financial institutions which added depth and diversity to the financial system. In this regard, various types of NBFIs have been established by private entrepreneurs, targeting categories of savers and investors not accommodated by the banking system with such services as equity finance and long-term credit for industry and real estate. By and large, the establishment of these non-bank financial institutions has meant that financial services can be extended beyond the range typically provided by the banks. This has the potential to increase competition and enhance the efficiency in financial intermediation. In the case of bank development, the period of reforms since 1990 has witnessed the establishment of nine new banks.

4. Analytical Framework

4.1 Introduction

There is a large body of literature on the role of financial markets in promoting financial asset holdings (financial deepening), savings, and growth. Early examples of such studies include Gurly and Shaw (1955), Goldsmith (1969), McKinnon (1973), and Shaw (1973).

The financial repressionist theory developed by McKinnon (1973) and Shaw (1973) considers the role of government intervention in the financial markets a major constraint to savings mobilization, investment, and growth. The government's role in controlling interest rates and directing credit to priority sectors of the economy in developing countries inhibits savings mobilization and therefore impedes the holdings of financial assets, capital formation, and economic growth (McKinnon 1973, Shaw 1973). Indirectly, ceilings on deposit and loan rates tend to raise the demand for lendable funds and discourage financial savings. In a situation where the controlled interest or loan rates are less than the equilibrium interest rate, financial intermediaries resort to credit rationing by non-price means. As a result, an informal financial market develops to satisfy credit needs of those individuals who could not get credit in the formal financial markets. It is also argued that repressive policies of controlled borrowing and savings interest rates have led to the creation of a fragmented financial market where favored borrowers obtain credit at subsidized, and sometimes negative, real rates of interest.

Both McKinnon and Shaw indicate that low interest rates lead to capital flight, thereby reducing the availability of lendable funds for investment and growth in the domestic economy. On the other hand, an increase of real interest rates will increase the inflow of foreign capital for investment and growth in the domestic economy. McKinnon and Shaw also argue that in repressive economies, where savings is suppressed, self-investment will occur, which will replace efficient investment opportunities. Therefore, financial liberalization, which frees interest rates, will shift savings from low and unproductive projects to higher productive investment.

The effect of financial reform is to free the financial markets from excessive government regulation in order to foster a free market-based system mobilizing savings and the allocation of credit to the private sector. It is expected to enhance the development of an efficient financial sector with an effective banking sector at its core. Successful financial sector reform should promote competition in the banking sector. Competition, if accompanied by easy entry and exit, will lead to the development of new banking products, an increase in the scope of banking services, reduction in transaction costs, and the development of an enabling environment for greater savings mobilization.

Furthermore, the removal of controls on interest rate and credit ceilings can be expected to greatly enhance the efficiency of financial intermediation by channeling credit to high yielding investment opportunities. It is also expected that by restructuring the banking sector and training banking officials and staff, the capacity of the banking sector will be improved, with increased banking services available to the public. Prudential regulation and supervision are also expected to improve efficiency and soundness of the banking system in order to increase the confidence in the banking system.

However, others argue that there is no guarantee that financial reform based on a market-based system will ensure a significant level of competition and efficiency within the domestic economy's banking system. It is also argued that competition will not be possible if the banking sector is dominated by government-owned banking institutions, as is common in many Sub-Sahara African countries, including Ghana. Likewise, it is argued that the risk of inefficiency associated with direct credit controls with pre-reform government intervention in the banking sector may be replaced by the inefficiency of a monopolistic banking structure (Johnson and Break, 1991).

Collier and Mayer (1990) argue that in many African countries where there are a small number of commercial banks controlling a large proportion of financial deposits in the banking sector, the pricing by one bank may have a significant impact on other smaller banks in the sector. In this instance, banks may prefer to hold proportionately large assets in liquid form rather than holding a diversified portfolio.

Collier (1990) also argues that the opening of the domestic financial markets to foreign competition will provide an incentive for the domestic banking institutions to adopt efficient means of delivering banking services. On the other hand, Holst (1989) argues that in many Sub-Saharan African countries, development banking financial institutions that are considered competitors to commercial banks are dependent on foreign donor funds. As a result, they pose very little competition to the traditional banking sector, which is very slow to improve services or introduce new financial instruments. In this study, we test for the above inferences based on the Ghanaian economy.

4.2 Measurement of Banking Efficiency

One major issue facing researchers and policy makers in developing countries is how to measure changes in bank efficiency associated with financial sector reform. It is recognized that efficiency may be proxied by increased productivity of bank staff and employees after financial reform. As a result, it is recommended that banking efficiency be measured by developing an index of bank output, which can be computed before and after the financial sector reform.

Various approaches to defining banking output and input in measuring bank efficiency have been adopted. The production approach (PA), which was developed by Sherman and Gold (1985) and

Ferrier and Lovell (1990), considers banks to be producers of bank deposits and loans. The actual output is specified as the number of bank deposits and loan transactions that are processed. Total cost includes cost of capital, labor (employees), cost of supplies, expenditure on materials, occupancy costs, and expenditure on furniture and equipment. It is postulated that an efficient banking system may lead to lower transaction cost and a reduction in the cost of providing banking services to the public.

The variant of the intermediation approach (IA) credited to Humphrey (1985) considers banks to be mobilizers of surplus funds which are then packaged and "intermediated" into loans and other assets. In this case, the dollar value of deposits and loans constitute the measure of banking output.

Others recommend that banking efficiency can be measured by collecting data on bank interest rate spreads before and after financial sector reform. It is argued that competition following financial sector reform will lead to an enhanced efficiency of the banking sector that may result in the reduction of interest rate spreads between lending and deposit rates. A decrease in bank spreads is likely to encourage a greater mobilization of financial savings and demand for credit or loans for investment and growth.

In addition to these measures, there are other traditional measures of bank efficiency, such as: (a) bank margins, (b) transaction costs, and (c) profits as measured by accounting data.

In order to enhance the outcome of this study's practical application to policy makers, bank officials, regulators, and stakeholders, we relate the analytical framework of bank efficiency and performance to existing performance measures that are being used in Ghana to evaluate the performance of commercial banks.

The Bank Supervision Department (BSD) of the Bank of Ghana has adopted uniform performance measures of commercial banks based on seven performance dimensions. These are called "CAMRRAL" analysis, which is designed to measure the safety, soundness, and solvency of commercial banks. The word "CAMRRAL" is an acronym with C = capital adequacy measures; A = asset quality; M = management competence; R = risk concentration; R = regulatory compliance; A = accounting and internal control, L = liquidity. However, the "CAMRRAL" index does not emphasize the efficiency of the banking institutions.

We have developed a comprehensive index of banking efficiency and performance that is expressed as the word "TARCSIMEL," and integrates measures of efficiency and general performance of banking institutions in Ghana. The word "TARCSIMEL" is an acronym whose letters are defined as follows:

T = transaction cost
A = asset quality
R = risk exposure
C = capital adequacy

S = spread between deposit and borrowing rates
I = Intermediation proxies of savings mobilization and credit allocation
M = management competence
E = earnings or profitability
L = liquidity

Our intention is to analyze the above index over time in order to assess the impact of the financial sector reform on the post-reform operations of the banking sector at the industry and the firm levels. In order to compute and test each of the above measures of efficiency performance for the sample of commercial banks, various proxies have been developed for each of the above instruments.

4.3 Methodology

This study is an integration of theoretical framework, financial ratio analysis, and parametric statistical analysis for the examination of policy research questions. This study also involves fieldwork and the administration of survey questionnaires to a sample of target groups comprising (a) bank managers, (b) bank staff and employees, (c) regulators and bank examiners, and (d) bank depositors. We surveyed 45 bank branches, including selected rural banks in four regions of Ghana. Additionally, we also interviewed bank managers about their assessment of FINSAP's impact on bank operations and their own reaction to the reform measures enacted since 1988.

The sample selection of bank depositors was based on a random selection of bank depositors at the bank premises during the normal business hours of the bank. The survey was conducted by four field research officers under the supervision of the principal and co-principal investigators in Ghana during the months of June through August 1997. The sampling of bank employees and staff was done at the discretion of the branch managers. However, in order to maintain the confidentiality of the responses, we provided employees with envelopes in which to enclose the responses after completion. Prior to the distribution of the questionnaires, the principal investigator and the co-investigator went to see each Managing Director to explain the process and ask permission for the interview. Many mangers expressed their interest and cooperation with researchers.

In addition to the primary data, we also collected secondary data from individual banks and the BOG. The secondary and time series data are based on (a) the consolidated balance sheet and income statement of commercial banks in Ghana, (b) prudential and audited returns from the BOG, (c) macro-financial data from BOG, and (d) macroeconomic data from the Ministry of Finance and other national account statistics.

The analysis of the impact of the reform on the efficiency of the banking sector and its impact on financial deepening and savings mobilization relied on secondary data supplemented by primary data from the survey questionnaires. The secondary data was analyzed from the macro and micro level. The scope of aggregate macro data ranges from 1960 to 1997. However, firm level data for the analysis is from 1989 to 1997.

4.4 Hypotheses

This study tested a number of hypotheses and research questions that have been raised in the previous sections. Of interest to policy makers is the analysis of bank transaction costs and its impact on savings mobilization and growth. Earlier studies show that transaction costs in the developing countries are very high due to inefficiency of operations. However, the McKinnon-Shaw hypotheses indicate that the financial sector reform has the potential for efficiency gains that would lead to the decline of transaction costs.

A common hypothesis in the academic literature is the notion of high interest rate spreads between deposit and lending rates. As a result, interest rates on deposits are much lower than the rates on lending to the private sector. The lower deposit rates provide disincentives for savings mobilization. Similarly, the high lending rates may reduce the propensity to borrow from the banking sector. Thus, a related hypothesis is that the financial reforms associated with the entry of new banks will induce competition, and this will significantly induce narrowing the interest rate spreads between borrowing and lending rates.

Another hypothesis relates to the impact of reform on the restructuring of commercial banks and the removing of non-performing loans from the balance sheets of commercial banks. This null hypothesis states that the restructuring and management reform of the commercial banks will improve bank operations and performance.

Intermediation proxies such as credit allocation to the private sector versus the government sector have been tested. The deposit structure and maturities have been analyzed to find whether there has been any shift in the structure of commercial banks' deposits and assets after the financial sector reform. In addition, the structure of loan portfolios, maturities, and sectoral allocations were examined for any evidence of allocative efficiency after the reform.

Profitability may be considered a sign of management efficiency in generating higher returns on capital. However, it is argued that higher profit rates in the banking sector, especially in developing countries, may be a reflection of the lack of competition and entry in the banking industry, which results in an oligopolistic banking structure where a few banks may control the banking market share and reap supernormal profits. At the same time, others argue that, based on the current term structure of interest rates in Ghana, any bank manager in Ghana can make high profits by taking deposits at 20% (or less, for demand deposits) and lending them to the government at over 35%. Thus, it is hypothesized that profits in the banking sector may accrue from economic rent rather than from efficient banking operations.

Another hypothesis postulates that the efficiency caused by increasing the scope of customer services through automatic teller machines (ATM), changing banking hours, and the introduction of weekend operations will enhance savings mobilization.

Effective prudential banking regulation and supervision will enhance the safety and solvency of the banking system, and therefore increase the public's confidence in holding financial assets in the banking system.

5. Findings of the Study

5.1 Introduction

The liberalization of the banking sector and the subsequent enactment of the new Banking Law appeared to have streamlined the emergence of financial institutions and added some depth and diversity to the financial system. The following section is a discussion of the characteristics of the new and emerging private banks in the post-reform era.

5.2 The Emergence of New Banks

It is important to emphasize that until the 1990, no private banks were licensed. However, after 1990, nine banks were licensed to operate in Ghana. Of the nine banks, five were licensed as commercial banks. The others were licensed as merchant banks. Also, with the divestiture of about 40% government shares in Social Security Bank and Ghana Commercial Banks in the 1990s, there has been more private involvement in the banking industry in Ghana than there was before the reforms.

In terms of the management of the new banks, available evidence shows that many of the top management teams have held top posts in some of the older banks, including two former Governors of the Bank of Ghana. Also, most of the staff of the new banks consists of experienced bank officials from the older banks who have been enticed to join the new banks.

An analysis of the financial services provided by the new banks shows that despite the fact that they have been licensed as merchant banks, they do, in practice, perform commercial as well as development and merchant banking services. These new banks are "one-stop-shopping" banks, or financial supermarkets, offering virtually all types of financial services under one roof. These services are characterized by a combination of deposit taking and credit allocation to the private sector. Unlike the older banks, the newer banks operate subsidiaries for providing diversified services to their clients.

Ecobank Ghana Limited has as subsidiaries, ECOBANK Stockbrokers Limited (ESL) and EBG-Investment Managers Limited (EBG-IML) to perform specialized services. ESL is one of the three pioneer licensed dealing members of the Ghana Stock Exchange. Its services include portfolio management, equity research, initial public offering, debt/equity swap, and retail and institutional brokerage services to both domestic and international clients.

Trust Bank describes itself as a "universal bank" that provides a variety of services including: (a) corporate financial advisory services, and (b) provision of trade finance facilities such as preshipment advances, loans against trust receipt, accessing funds in the international market for short, medium and long term foreign loans. Other services include the development and promotion of exports, the appraisal and financing of projects and other related financial services.

Theoretically, the new breed of banks has certain advantages since the BOG has accepted them as a nucleus of universal banks. The formation of the new banks represents an important milestone in the post-reform era. The study shows that the new banks[7] established after the promulgation of the 1989 Banking Law tend to have, on average larger nominal interest rate spreads than the established commercial banks and development banks. This does not support the earlier findings of the World Bank (1994) that the new banks have lower interest margins than the older banks. Apart from Standard Chartered Bank, whose spread was about 22%, none of the older commercial banks had a spread as high as the lowest spread of the new banks.

Our findings support the earlier findings that, on the average, the new banks appear to have mobilized more long-term funds from the public than have the older established banks. However, this increased mobilization of long-term funds did not translate into increased credit to the private sector. Instead, the newer banks have increased their investment in relatively safe short-term government Treasury bills. The study shows that the share of credit to the private sector extended by the new banks was lower than that extended by the other two groups of older banks. Also, the newer banks contributed the largest share of their funds to investment in government securities.

5.3 Innovative Financial Practices

An emerging feature of post-FINSAP development in the financial sector has been the introduction of innovative and competitive banking system in Ghana. This competitive element has led to a re-packaging of banking services and the introduction of high technology customer services. The players have made time and savings products more competitive in terms of product differentiation. For example, Standard Chartered, Barclays, and Trust Bank have introduced savings accounts that attract multi-tiered interest rates and are linked to free personal accident insurance. Standard Bank's saving and insurance package entitles savers to a lump sum benefit, which is twice the current balance in an account not exceeding ¢1 million. Similarly, The Trust Bank offers a "Gold Account" that is a hybrid of normal current and savings accounts. The "Gold Account" offers the depositor an opportunity to issue checks drawn on the account while the account continues to earn a higher premium. In addition, interest is compounded daily on the account unlike other savings accounts that attract interest compounding on a quarterly or yearly basis. In addition, there are no bank charges on the "gold account."

In most cases, however, these new saving products do not yield positive real rates of interest because of the exceptionally high rates of inflation in Ghana. As a result, the yields on these new products could not compete with high-yielding Government securities that provide profitable investment avenues for the banks.

[7]Some of the new banks for which data was available include CAL Merchant Bank, Trust Bank, and Metropolitan Allied Bank.

The other innovations that have emerged after 1988 may be termed process innovation, which refers to the way banks deliver bank services and products to the public. These innovations have been made possible by the introduction of micro-electronic technology that has the potential of broadening the payment system, which was predominantly cash based. The introduction of computers at bank branches and the installation of ATMs seemed to set in motion a revolution in Ghana's banking system.

The frontline fight using automation for market shares was pioneered by the Trust Bank, which has installed ATMs that allow customers 24-hour access to their funds. The Trust Bank has linked all its branches to an automated clearinghouse so that a customer can withdraw funds at any of the branches.

Following closely are the big foreign-owned banks, Standard Chartered Bank and Barclays Bank. These banks have centralized operations at their respective head offices, with networking, to all their branches to enable customers to check their balance, make withdrawals, or deposit funds into their accounts.

Ecobank (ECONET), Standard Chartered Bank, and Barclays Bank have created opportunities, especially for their corporate customers, to initiate a range of automated transactions from their own offices or homes. Using a personal computer, telephone, modem, and bank-installed software, a customer is able to access his/her account and other information about exchange rates and interest rates.

In terms of international fund transfers, the Agricultural Development Bank has linked up with Western Union Money Transfer to allow its customers to receive funds from the rest of the world at any of the Bank's branches. The Social Security Bank has similarly introduced an electronic funds transfer scheme, the MONEY-GRAM, receivable at any other SSB branches.

The application of microelectronics has the potential to increase the efficiency of banking activities in Ghana. Automation tends to reduce operating costs associated with manual operations, especially delays and manpower costs. Invariably, the main costs involved in banking derive from the need to store large amounts of information, the need to access the stored information quickly, and to update such information continually. The introduction of microelectronics in banking has reduced these costs considerably through both scale and scope economies. As is expected, those banks in the vanguard of information technology are also the leading profit earners. Standard Chartered Bank, which invested heavily in information technology, recorded a pre-tax profit of ⊄122.9 billion in 1999. This represented a 20% increase over the profit earned in 1998. Similarly, Barclays Bank's pre-tax profit increased by 75%, from ⊄70.75 billion in 1999 to ⊄40.42 billion in 1998. Ecobank's pre-tax profit increased by 11.9% in 1999 to ⊄29.32 billion in 1999, while the Agricultural Development Bank recorded an increase of 59% over the 1999 figure, settling at ⊄38.82 billion.

The current innovation in Ghana marks a major departure from its predominantly cash-based payments system. Currency is the predominant means of payment, encompassing over 95% of transactions that involve transfer of value between economic agents. Check transactions account for about 2% of non-cash transactions. Our survey indicates that the low level of check usage is due to a general lack of confidence in checks as a payment medium. Of 15 large companies and government departments, including the Internal Revenue Service, Customs, Excise and Preventive Service, all indicated that they would not accept business checks as payments. The two basic reasons given are delays in clearing checks and the likelihood that the checks will be dishonored. As a remedy for the latter, all respondents noted that they would rather request a bank draft, which was as good as cash.

Interviews with bank managers show that apart from special clearing, which is done expeditiously, depending on the traffic situation in Accra, and at cost to the payee, intra-Accra check transactions take 3 days. On the other hand, checks drawn on banks outside Accra take from a week to four weeks.

Although over 75% of business executives interviewed indicated that they would welcome the introduction of check guarantee cards such as Standard Bank's service card and Barclays Bank's “Barclay card,” it was observed that these executives would still be hesitant if the clearing system is not improved. In a similar survey, respondents welcomed the guarantee cards but they preferred the electronic means of payment such as SSB's “Sika card,” Trust Bank's “auto cash card,” SCB's “money link card,” and Barclays Bank’s “Barclay cash card.” Although these cards are yet to be processed into an automated clearinghouse, they offer the opportunity to electronically make a deposit or a withdrawal from a bank account. The emerging payment system of the electronic cards suggests that Ghana is poised to bypass the check stage. This innovative process in Ghana has the potential to increase financial deepening and increase mobilization of savings for investment and growth. In the following section, we examine the extent to which the innovative changes have contributed to financial deepening, savings mobilization, and efficiency gains.

6. Efficiency Gains of the Banking Sector

6.1 Introduction

It has been postulated that the liberalization of the financial markets through the adoption of new technology and the training of bank staff would improve bank operations and lead to efficiency gains. In order to examine the impact of the reform on the efficiency gains of commercial banks, this study relies on TARCSIMEL indicators, which have been developed for the assessment of Ghana’s banking sector.

6.2 Transaction Cost

A major objective of the financial reform is to streamline banking operations by upgrading staff and hiring new qualified staff. Transaction costs can be reduced by training staff to be more productive in the delivery of bank services and the efficient management of company operations. This may lead to lower cost for bank customers and depositors and an increase in savings mobilization. It will also increase the spread between operating costs and revenue, which may lead to higher profit. The question we intend to answer in this section is: to what extent has the financial reform induced efficiency in the banks' cost management.

The answer to this question was based on the examination of various indicators of bank transaction costs, such as: (a) operating costs as a percentage of total income, (b) staff cost per unit of total income, (c) staff cost per unit of employees, and (d) staff cost per unit of operating expenses. The above analysis was conducted from 1989 – 1997.

This study shows that the banking sector has benefited from efficiency gains, as illustrated by the indicators of transaction costs. The data shows that in 1989, it required ¢1.07 in costs to generate revenue of ¢1.00 in 1997. However, due to efficiency gains, it takes only ¢0.38 to generate ¢1.00 in total revenue for the banking sector. At the sectoral level, the degree of efficiency gains varies from sector to sector. For example, the newer and merchant banks display greater efficiency gains in terms of a reduction in transaction costs than do the other types of banks.

The second indicator of transaction costs corroborates the findings above. The study shows that staff costs as a percentage of revenue, compares favorably with the above measures of operating costs. The data shows that, due to the improvement in bank operations between 1989 and 1997, the staff costs per revenue generated was reduced by half, from 32.03% in 1989 to 16.41% in 1997.

Another interesting finding shows that the staff costs as a percentage of operating costs has increased across the banking industry, from 29.81% in 1989 to 48.55% in 1997. At the firm level, there was evidence of increases in cost efficiency as measured by the various indicators of cost management. For example, operating costs as a percentage of income for GCB declined from 119.25% in 1989 to 31.42% in 1997, while that of SCB declined from 56.03% in 1989 to 21.15% in 1997. Similar declines have been observed for the other banks. On the other hand, staff cost per employee was on the rise after the financial sector reform. The study shows that GCB staff costs per employee increased from 31.43% in 1989 to 60.25% in 1997. Similarly, that of SCB increased from 43.74% to 53.58%. Other banks also experience similar trends. However, it is interesting to note that the newer banks experienced the greatest increase in staff costs.

Factors that may account for the rising staff costs include: (a) post-reform competition for staff from the private sector which encourages recruitment and training of bank staff, and (b) staff demand for higher wages due to inflationary pressures and constant devaluation of the local currency.

6.3 Asset Quality

Our study shows that before the financial sector reform, many banks were saddled with huge non-performing assets. However, the enforcement of new prudential regulations and the removal of large bad loans after the financial reform resulted in a significant balance sheet restructuring of the banks and improvement in asset quality. In order to examine the asset quality of the banking sector, we considered various proxies of banks' asset quality. This included both provisions for loan losses and the write-offs of bad loans. These two indicators have the potential to negatively affect the banking sector's earnings and the asset base.

Data limitations on loan write-offs limited our computation of the asset quality to provision for loan loss as a percentage of advances or loans. The study shows that the provision for loans as a percentage of total loans declined sharply from 57.32% in 1989 to 17.63% in 1997 for the banking sector.

Comparatively, merchant banks exhibit a greater reduction of the provisions for bad loans from 45.89% in 1989 to 10.64% in 1997. Also, loan losses for the banking sector were drastically reduced from 29% of assets in 1989 to 8% in 1997.

At the firm level, there has been much progress in terms of asset quality management. As an example, GCB, the largest bank in Ghana, experienced a decline from 64.44% in its provision for loan loss to 17.74% in 1997. In comparison with the two foreign banks that experienced declines in the provision for loan losses from 17.72% and 10.35% in 1989 to 2.12% and 3.55% in 1997, the loan loss provision for GCB may be considered quite high.

6.4 Risk Measurement

The extent to which banks manage the resources of depositors in order to generate income that pays interest to depositors and shareholders is associated with various uncertainties. These uncertainties or risks can manifest in various forms, such as: (a) the inability of the borrower to pay loans (default risk), (b) the inadequacy of owner contributed capital to cover losses on business transactions (capital risk), (c) the inadequacy of funds availability to meet unexpected withdrawals by depositors (liquidity risk), and (d) the potential of unexpected changes in interest rates to have adverse impacts on the revenue and expenses of banks.

However, in view of data non-availability on the above indicators, this study analyzed the interest rate and capital risks. Interest rate risk shows the extent to which changes in interest rates affect the valuation of bank assets and liability costs. In a competitive banking environment where interest rates are determined by market forces, small changes in interest rates will affect revenue and the cost of funds. Thus, diversification of bank operations is necessary to minimize the extent of risk associated with interest rate changes.

The study shows that before the financial reform, the greatest source of revenue for the banking sector was interest revenue. As a result, commercial banks' sensitivity to changes in interest rates would have a greater impact on their income. However, after the financial reform, the interest rate risk has been reduced greatly. This study shows a fall in the banking industry interest risk from 63.42% in 1989 to 47.85% in 1997. However, on a sectoral level, commercial banks show greater reduction in interest rate risk than the rest of the banks.

The capital risk is an indication of how far shareholders funds can absorb asset declines before depositors and creditor funds are put at risk. The financial reform with prudential regulation of adequate capital ratios is designed to ensure that depositors and creditors funds are not put at risk. There is an inverse relationship between capital risk and the exposure of depositor funds to risk. Thus, the higher the ratio of capital to advances, the less the capital risk, the greater the protection for depositor funds, and the less the risk of exposure of depositor and creditor funds.

Results of the study show the capital risk at the industry and the firm level. At the industry level, the study shows that the capital risk was quite high in 1989 as exhibited by a negative ratio of capital to advances. However, in the years following the reform, there has been significant improvement in capital management by commercial banks. The capital risk indicator declined from a negative 13.80% in 1989 to 36.52% in 1997.

The improvement in the capital risk level is also observed at the firm level as well. The study shows that individual banks also experienced significant improvement in the management of capital risk.

6.5 Capital adequacy measurements

The capital adequacy ratio, measured by shareholder contribution as a percent of total assets, shows a major improvement after the financial sector reform. The study shows that in 1989, only three commercial banks satisfied the minimum capital adequacy requirement of over six percent. The rest of the banking sector reported less than 6% or, in some cases, negative capital. However, after the financial sector reform, there has been a major turnaround and improvement of capital adequacy ratios. By 1997, almost all banks surveyed reported significantly higher capital adequacy ratios. The only exception is the Coop Bank, which reported significantly larger negative capital adequacy ratios, from 1989 to 1997.

The significant improvement in the capital adequacy position of the banking sector may be due to the restructuring of the banks, the removal of nonperforming assets, prudential regulation of the banking sector, and the overall healthy position of the banking sector.

6.6 Interest Rate Spreads

The study results show that, contrary to expectations, the spread between lending and deposit rates widened for the commercial bank industry, the merchant, and the development banks. The bank industry spread increased from 12.19% in 1989 to 17.69% in 1997. In contrast, the interest rate for development banks' spread dropped from 23.62% in 1989 to 4.27% in 1997.

Possible reasons for the above development are: (a) lack of active competition in the commercial banking sector for savings, (b) large reserve requirements by the BOG that do not earn any interest rates, (c) higher spreads may be used as a hedge against inflationary pressures in the Ghanaian economy, and (d) hedged attempts to cover interest foregone on higher reserve requirements.

However, we should point out that the spread is only one indication of banking competition in the Ghanaian banking sector. Other factors would have to be considered before a conclusion can be reached as to whether there has been less or more competition in the banking sector.

6.7 Intermediation Proxies

A major hypothesis of the study is the expected positive impact of financial sector reform, financial savings mobilization, and credit allocation to the private sector. The extent to which financial institutions intermediate between the business community and depositors, in terms of raising financial resources for credit allocation, has been measured in terms of demand deposit/total deposits and long-term deposits (quasi money)/total deposits. The intermediation proxies, in terms of credit allocation, are measured by the following: (a) private loan/total loan or advances, (b) public loans/total loans, (c) government loans/total loans or advances, and (d) total credit/total deposits or the loan deposit ratio.

At the industry level, private loans measured as a ratio of total advances increased from over 46% in 1990 to 74.95% in 1997. At the bank sector level, merchant banks emerged as the greatest source of credit to the private sector, followed by development banks. Commercial banks credit to the private sector increased much more slowly than that of merchant and development banks and was a relatively small portion of the total amount of credit.

At the same time, public loans measured as a ratio of advances remains quite stable, ranging from 7.49% in 1990 to 6.52% in 1997. The relative decrease is due to the efforts of the government to privatize public institutions that have become their source of financial loss.

In terms of the structure of savings intermediation, the study shows that there has been a structural shift from excessive demand for short-term demand deposits to long-term savings deposits. At the industry level, the ratio of demand deposit to total deposits (DD/TTD) declined from 68.13% in 1989 to 46.65% in 1997. At the same time, quasi money measured as a percentage of total deposit (QM/TTD) increase from 31.87% in 1989 to 52.61% in 1997.

However, a major development in the allocation of credit to the government sector is the shift from the government's reliance on the banking sector for credit to its reliance on the financial markets for credit. At the industry level, credit to the government sector barely increased from 0.93% in 1990 to 4.36% in 1997. However, this may be misleading, because credit to the government sector from the banking sector has been replaced by the sale of government Treasury bills to the public.

Even though credit to the private sector increased after the financial sector reform, the maturity of credit to the private sector is predominantly short-term. As a result, long-term credit for productive business operations is on the decline.

6.8 Management Competence

Another measure of efficiency is the extent to which management uses resources at its disposal to generate income through the delivery of financial services to the public. Management efficiency (competence) in resource utilization was measured by both income/assets and income/fixed assets. Efficient bank operations manifest in greater income per unit of assets than does less efficient bank operations. Similarly, the extent of fixed assets generation of income is also indicative of greater efficiency.

At the industry level, income per unit of assets has more than doubled, from 11.66% in 1989 to 24.74% in 1997. However, at the sector level, the income generation per unit of assets differed greatly from bank to bank and from sector to sector. In terms of sectoral analysis, merchant banks enjoyed a greater advantage in terms of generating income per unit of assets, followed by commercial banks, with development banks lagging behind.

The above results have been corroborated by the second measure of management competence: income/fixed assets. The rate of income generation by fixed assets increased tremendously from 1990 to 1997. However, this figure can be misleading in terms of comparison between firms and sectors. This is because during the post-reform period, many institutions invested heavily in computer information in order to increase the quality of delivery of financial services to the public. An increase in investment in computers and other fixed assets without significant increase in income may lead to a lower ratio in compares with other institutions that were hesitant to modernize their capital base. As a result, the low ratio depicted by some commercial banks should not be interpreted as a negative and unfavorable indicator.

6.9 Earnings and Profitability

Various measures of earning and profitability adopted for this study included: (a) net margin, (b) interest margin, (c) return on assets, and (d) return on equity. At the industry level, profitability, as measured by all the indicators, has increased greatly since the financial sector reform. In terms of the gross margin, the industry ratio increased from a negative ratio of 26.93% in 1989 to 31.44% in 1997. Similarly, the return on assets and on equity increased from -3.49% (ROA) and -6.80% (ROE) to 5.02% (ROA) and 38.57% (ROE) in 1997, respectively.

In 1989, the banking sector recorded a negative profit, as exhibited by all the profit indicators. However, the restructuring of the banking sector and prudential investment has resulted in a rapid turnaround. The banking sector has turned its negative performance to a positive performance.

At the firm level, many commercial banks reversed their performance from a negative trend in the 1980s to substantial positive trends in the profit rates, as measured by the profitability indicators.

6.10 Liquidity Management

One major constraint on development in Ghana is the high liquidity of the banking sector. Liquidity management serves various purposes: (a) to ensure the availability of funds to meet withdrawals on demand, (b) to meet reserve requirement needs of banks, and (c) to meet short-term expenses of the bank. However, since cash holdings have zero interest yields, it prevents the banks from increasing their earnings potential. As a result, liquidity management is essential to strike a balance between maintaining enough cash on hand to meet those needs cited above and the reallocation of idle cash to earning assets.

In order to measure the banking sector's liquidity management, we examined the following proxies: (a) cash as a ratio of demand deposits, (b) liquid funds/total deposits, and (c) liquid funds as a ratio of total assets.

At the industry level, there has been a slight decrease in the banking sector cash holdings as measured by a ratio of demand deposits. However, cross section comparisons show that development banks' cash holdings remain higher than commercial and merchant banks.

6.11 Market Share analysis

Table 2 shows the total market share (in terms of asset size) of the banking sector from1990 - 1997. This data shows the dominant share of commercial banks in total assets of the banking sector. However, over the years, merchant and development banks began to make some inroads in the share of total assets. Table 2 shows that even though merchant and development banks have been making gains in market share of the banking industry, the commercial banks' dominance has been entrenched. Commercial banks' share in total assets fell from 82.38% in 1990 to 70.84% in 1997. At the same time, merchant and development banks increased their share from 6.94% and 10.68% to 13.29% and 15.87 percent respectively (see Table 2).

The decrease in commercial bank sector's share is explained by the greater decline in the share of total assets of Ghana Commercial Bank from 52.30% in 1990 to 22.30% in 1997. At the same time, Barclays and Standard Chartered Bank, the two foreign banks have increased their market share from 8.92% and 6.34% in 1990 to 12.96% and 22.30%, respectively. Furthermore, SSB has also increased its market share from 11.38% in 1990 to 13.28% in 1997. However, these increases could not compensate for the drastic decline in asset share of Ghana Commercial Bank, the largest commercial bank in Ghana.

Among the merchant banks, all but one showed slight increase in the share of total assets. The only merchant bank that actually declined is CAL merchant bank, which saw its asset share fell from 1.87% in 1990 to 1.40% in 1997. Out of three development banks, only ADB showed greater propensity to increase its share of assets from 2.58% in 1990 to 9.08% in 1997. NIB saw its assets share increased slightly from 2.33% in 1990 to 3.90% in 1997.

Table 2: Market Share of the Banking Sector by Asset Size

	1990	1991	1992	1993	1994	1995	1996	1997
GCB	52.30	51.81	43.66	49.87	43.79	29.22	25.46	22.30
SCB	6.34	8.80	9.80	8.04	8.93	12.21	12.93	18.30
BBG	8.92	8.07	8.02	7.55	9.38	11.91	12.44	12.96
NSCB	1.81	1.86	1.99	1.34	0.00	0.00	0.00	0.00
SSB	11.38	8.49	10.34	8.26	10.28	13.33	13.91	13.28
CO-OP	0.02	(0.04)	(0.06)	0.00	0.00	0.00	0.00	0.19
BCC	1.59	0.34	0.23	0.00	0.00	0.00	0.00	0.00
TTB	0.00	0.00	1.12	2.24	2.28	2.05	1.81	1.95
MAB	0.00	0.00	0.00	0.00	0.00	0.17	0.38	0.63
PBL	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.65
ICB	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.57
COMMERCIAL	82.38	79.33	75.10	77.31	74.65	68.89	67.31	70.84
MBG	2.57	3.26	4.31	4.95	5.99	6.99	5.92	5.47
EBG	2.50	3.73	4.06	3.95	3.77	4.82	5.48	5.40
CAL	1.87	2.40	2.66	2.61	2.38	2.42	1.66	1.40
FAMB	0.00	0.00	0.00	0.00	0.00	0.00	0.68	1.02
MERCHANT	6.94	9.39	11.04	11.51	12.13	14.23	13.74	13.29
ADB	2.58	3.12	3.66	4.77	5.95	7.75	9.58	9.08
NIB	2.33	2.80	3.09	2.90	3.54	4.34	4.56	3.90
BHC	5.77	5.36	7.11	3.51	3.72	4.79	4.81	2.89
DEVELOPMENT	10.68	11.28	13.87	11.18	13.21	16.88	18.95	15.87

It is generally believed that a financial sector reform accompanied by the entry of new banks into the industry will provide competition, and that will lead to a reduction in the dominance of the few banks that have dominated the Ghanaian banking sector. However, this study shows that the entry of new banks into the industry has had little impact on the dominance of four commercial banks in the Ghanaian banking industry. In 1990, Ghana Commercial Bank, Standard Chartered, Barclays Bank, and Social Security Bank held 78.95 percent share of total assets of the banking sector. This share had declined slightly to 66.84 percent in 1997.

7. Financial Deepening and Savings Mobilization

7.1 Introduction

The academic literature postulates that financial sector reform accompanied by an increase in real interest rates, has a tendency to encourage economic units to hold more financial assets. It is also postulated that a greater volume of financial assets in the hands of the public is associated with high levels of savings, investment, and growth.

In developed financial markets with developed financial instruments, individuals hold more of their wealth in financial assets. However, in underdeveloped financial systems, there is the tendency for individuals to hold more of their assets in physical form rather than in financial assets. The prediction of the McKinnon-Shaw hypothesis is that in a liberalized financial market with market-determined interest rates and developed financial products, rational economic entities will substitute financial assets for physical assets.

Financial deepening enhances financial intermediation, which is the process of pulling idle financial resources from surplus economic entities into productive investment opportunities. This promotes economic growth and increases the welfare of individual citizens. Financial reform is expected to improve the efficiency of the financial system in inducing individuals to hold more assets in financial form.

The traditional measure of financial deepening is broad money, which includes currency outside the banking sector, demand deposits held in local currencies, and savings accounts held in local currency (M2). However, in post-reform time, many residents began to hold more of their financial assets in foreign denominated bank accounts. As a result, many countries have begun to include deposits held in foreign currencies as part of the broad measure of financial deepening or M2. However, it is argued that this measure also omits financial assets held in government securities such as Treasury bills, Treasury notes, government stocks, BOG bills, and private corporate stocks and bonds in individual portfolios. However, lack of data regarding the above financial assets renders the development of a comprehensive index of financial deepening impossible.

This study relies on three indexes of financial deepening, which are used to examine the impact of the financial sector reform on the portfolio choices of individual economic entities. These are: (a) currency outside the banking sector as a proportion of gross domestic product (CUR/GDP), (b) the traditional broad money expressed as a percentage of gross domestic product (M2/GDP), and (c) the new definition of broad money which includes the traditional M2 plus private foreign denominated deposits, government Treasury bills, and government stocks (M3). The last monetary aggregate is expressed as a proportion of gross domestic product (M3/GDP).

This study shows that with the introduction of high yielding government Treasury bills in 1987, private sector holdings of Treasury bills increased considerably. This has contributed to the increase in financial deepening, which has in turn increased the annual financial asset holdings from 21.30% to 23.11% during the reform period as compared to the pre-reform period.

We found that the traditional broad money (M2/GDP), 21.01% during the pre-reform era, declined to 19.35% during the post-reform period. The decrease in the traditional definition of financial deepening is accounted for by the substitution of government Treasury bills and currency in the portfolio of individual entities after the financial sector reform. On the other hand, the increase in the broader definition of financial deepening (M3) is accounted for by the faster increase in foreign denominated bank deposits, 92.16%, as compared with an annual growth rate of 61.53% in government Treasury bills and stocks.

7.2 Financial reform and aggregate financial savings

It may be argued that the emergence of the new banks, the establishment of new innovative technology for savings mobilization, and the relaxation of interest rates on deposits and lending would present greater opportunities for greater savings mobilization and credit allocation to the most productive sectors of the economy. In order to examine the above issues, we analyzed the banking sector mobilization of deposits (demand and savings deposits) over a longer period from, 1960 - 1997. This period is divided into pre- and post-reform. We examined the nominal and real growth of deposits as a percentage of gross domestic products (GDP) from 1960 - 1997. In addition, we also examined the term structure of interest rates, both as nominal and real rates over the above period.

The study indicates that the anticipated post-reform increase in savings mobilization by the banking sector was realized with mixed results. The annual nominal growth rate of total deposits barely increased from the pre-reform period 31.68% to a post-reform's 33.05%. However, the good news is that the practice of commercial bank savings mobilization through demand deposits has gradually diminished since the financial reform period. The growth rate in the savings deposit, which is a reflection of time deposits, certificate of deposits, and other long-term deposits increased from 37.72% during the pre-reform period to 40.74% during the post- reform period. On the other hand, the annual growth rate of demand deposits decreased slightly from a pre-reform period of 31.34% to 28.39%.

However, because of high inflationary pressures in Ghana over the study period, real annual growth rate of total deposits registered only 2.60% during the pre-reform period, as compared with 3.43% during the post-reform period. On the other hand, real annual rate of change in savings and demand deposits went from 7.70% and 2.75% to 5.68% and 2.34%, respectively. This shows that there has been a decline in real savings and demand deposit growth rate during the post-reform era. The findings in terms of savings as a ratio of gross domestic product (GDP) confirm the downward trend in savings mobilization. Total deposits measured as a ratio of GDP declined from 13.45% (pre-reform period) to 10.88 % (post-reform period). The disaggregated savings of demand and time deposits show similar post-reform declining trends.

Before the financial sector reform, the low deposit rate was attributed to the repressive tendencies of the government to control deposit and lending rates. As a result, the inflationary pressures led to negative deposit rates. However, it was expected that financial sector reform and the liberalization of interest rates would lead to higher real interest rates that would induce savings mobilization. Thus, the question raised by policy makers and stakeholders is why Ghana's experience with financial sector reform has not yet yielded the anticipated results in the form of increased domestic financial resource mobilization through the banking sector. Answers to the above questions and others have been investigated through survey questionnaires as addressed below.

7.3 The survey results: Factors affecting savings and deposits behavior

At the micro level, we analyzed the results of the survey questionnaires administered in Ghana during the summer of 1997. The study shows that the financial sector reform did not result in a higher real rate of interest as expected by depositors. Sixty-seven percent of the respondents indicated that they found the interest rates on their deposits too low. Only 33% found the rates to be just about right. However, contrary to popular belief, 57.6% of the respondents indicated that if interest rates were to increase appreciably, they would increase their savings rates. This finding was particularly relevant in relation to over 90% of the respondents' indication that they saved with the magic banks because of the attractive deposit rates they offered.

This finding supports the large following that the magic banks received through the middle of the 1990s. The magic banks were a new breed of financial institutions that offered deposit rates between 30 and 50 percent per month. Two savings schemes that operated at that time were Pyram and R-5. Forty-six percent of the respondents saved with Pyram, while 47% saved with R-5, and 7% saved with both Pyram and R-5. Unlike earlier findings, which showed that saving with informal financial institutions primarily afforded depositors access to credit and the friendliness of the organizers, over 90% of the respondents that saved with the magic banks indicated that they did so purely for the interest income. While the response to the instruments offered by the magic banks showed that the public could respond to higher interest rates, the activities of the banks nevertheless tended to undermine the very core of the financial system as a whole. First, available evidence shows that many businessmen abandoned their main line of business and deposited their funds with the magic banks in order to earn at least 30% interest per month - a rate of return that would not normally be achieved in the line of business.

Secondly, 34% of the depositors indicated that they withdrew their savings from the formal banking system and deposited into the magic banks[8]. The researchers noted that even high-ranking army officers who earned foreign exchange from peace missions abroad deposited with the magic banks. Traders on the Ghana Stock Exchange (GSE) complained that the activities of the magic banks were affecting patronage in the stock market, as most of the investors went to the magic banks. Also, discussions with BOG officials revealed examples of people borrowing money from the formal banking system at about 39% per annum and depositing such funds with the magic banks for at least 360% rate of interest.

[8] These Magic Banks include PYRAM and Resource 5. Their operations are now under review by Bank of Ghana.

7.3.1 The proximity factor

We tested the proximity hypothesis to determine how proximity to a financial institution or a bank affects the depositor's choice of a financial institution. Our survey shows that over 80% of the respondents indicated that their choice of bank was largely influenced by proximity to work place or to the place of residence. Another 15% indicated that the over-riding factor was the quality of service. The mode of transportation to the bank also showed why most respondents indicated proximity a major consideration in choosing their banks. The majority of respondents indicated that they usually walk to their banks, while 23.6% and 20.3% go to the bank in their own private cars or by taxis respectively.

7.3.2 The lack of confidence issue

Our survey reveals the lack of public confidence in the financial sector. This confidence factor can be traced to macroeconomic instability and the lingering effects of the unorthodox policy measures of the late 1970s and early 1980s. Macroeconomic instability resulting from high inflation and persistent depreciation of the cedi against the major world currencies has had a negative impact on savings mobilization. Although inflation has been brought down from the record high of 123% in 1983 to as low as 10% in 1991, it went up since 1992.

In order to relate the issue of confidence to the unorthodox government policies in the 1970s and 1980s, respondents were asked if they had lost money in the past. Over 45% indicated that they lost money during that time, because they could not find their receipts to claim the money two years after it was taken from them. The extent of loss was hard to determine. However, the claims of losses ranged from 500 cedis to 10 million cedis.

The respondents were also asked if they knew a friend or a relative who does not save in a bank account. In answer to the above question, 33% indicated that they knew a relative or a friend who does not save in the banking system because of the following reasons: (a) low confidence in the banking system, (b) fear of government probe of individual bank accounts, (c) low interest rates, (d) high inflation, and/or (e) low income.

In a follow-up question, 35.4% of the respondents believe that the government may probe bank deposits of large depositors. About 45% also believe that banks provide information to the government about depositors' accounts.

7.3.3 The Level of satisfaction with the quality of banking services

A series of questions were designed to examine the satisfaction of bank customers with bank services. Over 76% of the respondents indicated that they were treated very courteously at the bank. Only 3.2% indicated they were treated rudely by bank tellers, while 5.1% felt that bank tellers intentionally delayed attending to them as they waited in line.

In terms of banking hours, the majority indicated that they found the banking hours very inconvenient. Of those who expressed dissatisfaction with the banking hours, over 65% indicated their preferences for longer hours from 8:30 a.m. - 4:00 p.m. Furthermore, 35% indicated their preference for bank opening hours on Saturdays, as in other developed countries.

One other concern is the narrow scope of banking services provided. In order to ascertain customer needs and expectations, we asked the respondents to identify what kinds of services they would like the bank to offer them in addition to other services already being offered.   The majority of the respondents (31.7%) indicated that they would want to secure investment counseling, while others indicated preferences for the following services in the following order: credit cards, safe deposit boxes, travelers' checks, venture capital, insurance, and money orders. In a follow-up question, over 68% of the respondents indicated that they would apply for a credit card if the bank decides to introduce it.

Even though the introduction of computers and ATMs has improved waiting time at the banks, many customers complain about the long waiting time. The survey shows that the waiting time ranges from 15 minutes to 2 hours. The majority indicated that they had to wait about 30 minutes, while about 8.5% indicated a waiting time of one hour. Over 45% indicated that not enough seats in which to wait were provided. Most of the respondents indicated that there were no proper queuing systems at many of the banks. The majority of the respondents (49%) indicated that the absence of queuing system has at times led to confusion about the order of customers to serve.

7.3.4 Innovation and savings mobilization

One major contribution of FINSAP to banking innovation is the introduction of ATMs by the large commercial banks. As can be expected, the majority of the respondents indicated that they had been withdrawing money from the ATM. Over 72% indicated they prefer to withdraw funds from the ATM than make deposits to it. We observed long lines outside the ATM machines to withdraw funds by the bank customers.

However, one concern expressed by the customers is the question of security at the bank ATM after banking hours when the security guards are not on duty. This concern regards those ATMs situated outside bank lobbies and on the street corners. However, Trust Bank's ATMs situated inside the bank premises provide better security for deposits and withdrawals.

7.3.5 Impact of direct deposit payment to government employees

In 1991, the government mandated that all civil servants, teachers, nurses, and other government workers' should be paid their salaries directly to their bank account. At the end of the month, each employee has the choice of withdrawing all balances from the account or leaving some balance in the account. Policy makers intended to encourage the habit of savings and to inculcate banking culture in the majority of government employees. The survey shows that 38.1% of the respondents receive their salaries through the bank. Of those who receive their salaries through the bank, 87% indicated that they found the practice very convenient, while only 13% found the practice inconvenient, especially those who have to take time off from their jobs in order to go to the bank to make withdrawals. A further study is warranted to assess the impact of the direct deposit practice on savings mobilization and bank transaction costs in Ghana.

It was also hypothesized that most of the government workers would withdraw their entire salary from their bank accounts as soon as it was credited. However, our survey result shows that only 18% indicated that they withdrew all funds from the account after it was credited. Eighty two percent (82%) indicated that they do not withdraw all funds from the account at the time of its payment.

7.3.6 Impact of reform on bank employee's professional development

A total of 415 bank employees were surveyed in a random selection procedure. The gender breakdown of the respondents is as follows: males = 261, females = 149, with five not declaring gender. Eighty percent of the respondents were married, 14% were single, and 5.1% divorced. Twenty eight percent of the banking staff owned cars while 71.3% did not own cars. The majority of the banking staff - 56.1% have a secondary school certificate, 17.6% have university degrees and diplomas, and 3.9% possess postgraduate training and diplomas. Eleven percent have professional training qualifications.

It is very interesting to know that over 65% of bank employees started work as clerks while a very small number (8.4%) started at the officers rank. However, the majority of the respondents indicated that their current position is that of the officers' rank, while 15.6% and 10.4% indicated sub-officer and senior officer ranks, respectively. Branch managers constitute 6.5% of bank employees while deputy chief managers constitute only 0.5%.

One of the major objectives of the financial sector reform is employee recruitment, professional development, and training. Over 62% indicated that they have not participated in any technical training since they started working with their banks. Only 29% confirmed some level of technical training. Of those who participated in some form of training, 57.1 benefited from computer training organized either on the job (23.7%) or by a training session organized by an outside training organization (27%). The majority of the training focused on spreadsheets and word-processing.

In terms of job satisfaction, an overwhelming majority indicated their dissatisfaction on the job. Over 51% indicated their displeasure with their current work and 48% confirmed their satisfaction on the job. This finding is very troubling and needs further examination and analysis to ascertain the source of the dissatisfaction.

7.3.7 The impact of reform on bank management and efficiency of operations

The results of our survey of bank headquarters in Accra and other rural banks reveal interesting findings. In terms of constraining factors on efficiency, the majority of the respondents indicated that the lack of computerization and training of bank officers remain two major impediments. In a follow-up question about whether the situation has improved after the financial sector reform, over 50% indicated that even after the reform, the above two constraints have not been removed. This is the case with many of the rural banks and the older government owned banks that are in the process of either being restructured or repackaged for divestiture.

In terms of policy changes that have had significant major impact on operations, the liberalization of interest rates and removal of sectoral ceilings on loans and advances emerged as the most important changes. However, over 70% of the respondents indicated that the introduction of high yielding government Treasury bills has dampened savings in the banking system, as many depositors prefer to hold Government Treasury bills rather than savings deposits.

Additionally, the majority indicated that one of the major constraints to savings mobilization in Ghana is the fact that many depositors, especially large depositors, are not inclined to save money in the banking system because they fear the government probes of banking deposits. Other reasons include constant devaluation of the cedi and low subsistence income of the public. The majority indicated that the financial reform has done nothing to remove these two major constraints on deposit mobilization.

In terms of sources of income, there seems to be no major shift in sources of revenue for the banks. The majority indicated that interest rates on loans were the major source of revenue. However, after the financial sector reform, the interest rate on Government Treasury bills ranked very high. This seems to have discouraged bank lending to other lucrative areas that would have increased Ghana's economic growth.

In terms of the coverage of bank deposits with insurance schemes, the majority of the respondents indicated their acceptance of bank deposit insurance as a means of protecting depositor funds in the event of bank failures.

The issue of direct deposit to government employees was also covered in the survey. Over 60% indicated that they provided direct deposit services to government employees. In a follow-up question, 55% indicated that such practices increased savings mobilization while 40% indicated otherwise. In addition, 25% indicated that such direct deposits have increased transaction costs of the banking sector due to additional manpower necessary to handle such accounts.

In terms of improvement of the payment system resulting from use of checks, the majority of the respondents indicated the following major constraint to using checks: (a) the lack of universal acceptability by the public, (b) lack of verification, and (c) lack of universal identification numbers to verify the identity of the issuer of checks. The respondents indicated that no action has been taken after FINSAP to remove those constraints to check payment. Their suggestions range from education of the public to stiff penalties for fraudulent check writing activities.

7.3.8 Impact of reform on bank examiners' capacity building at BOG, BSD

One of the major objectives of FINSAP is to strengthen the regulatory powers of the BOG and to provide the BOG staff with professional development and training. In order to assess the impact of FINSAP on the capability and efficiency of the Bank of Ghana staff, we surveyed 17 Bank of Ghana bank examiners. The selection of the examiners was at the discretion of the Deputy Chief.

It is very encouraging to note that all the bank examiners are university graduates with 85.6% in possession of first degrees. Over 14% obtained postgraduate degrees. In terms of undergoing further professional training after joining the Bank, the majority, (57.1%) indicated that they had not attended any professional training since they joined the Bank.

In terms of access to a computer at their place of work, a disturbingly high number indicated that they had no access, only 14.3% reported having access to computers, while over 85% indicated that they had no access. As a result, processing of bank examination results has to be done manually or on typewriters. In a follow-up question, over 85% confirmed that the lack of computers hampers their progress on the job.

In terms of bank examination, over 50.00% are off-site bank examiners, while 21.4% are on-site bank examiners and 28.6% are both on-site and off-site bank examiners.

For those who are on-site examiners, the major constraint cited on the job is the lack of bank automation, especially in the rural areas. As a result, on-site examination becomes a tedious process. Other problems mentioned are in order of importance, (a) lack of automation or computerization by the banks in the field, (b) lack of computerization at BSD, (c) lack of cooperation by bank managers in the field, (d) problems with transportation to the rural areas, (e) lack of uniform accounting systems in the banks examined, (f) lack of communication with the headquarters in Accra due to telephone problems, and (g) understaffing of bank managers.

For those who conduct off-site examinations, the major problems encountered on the job are listed in order of importance as follows: (a) submission of inaccurate bank reports by the reporting banks, (b) missing figures in reports, and (d) delays in banks' submission of returns.

In a follow-up question, about 35.7% of the respondents indicated that there have been mechanisms set up to deal with the above problems. Some of these mechanisms include weekly meetings with bank mangers and periodic seminars.

8. Credit Allocation during FINSAP

8.1 Introduction

Researchers define allocative efficiency in terms of the availability and the allocation of credit to the productive sectors of the economy for growth. The view is that allocative efficiency of commercial banks' lending should relate to socially optimum allocation of scarce financial resources for growth. This implies that financial resources should be allocated to the most productive investment projects. There is the assumption that credit increases resulting from improved savings for financing private sector business activities will enhance growth and alleviate poverty.

Table 3 shows total domestic credit to the government, public institutions, and the private sector. The first general picture is the drastic fall in total credit/GDP ratio from about 28% in 1987 and the subsequent consistent decline to 1.13% by 1991. It rose dramatically to about 15 percent in 1992, and the fell to 6.45% in 1993. It never recovered appreciably to anywhere near the pre-FINSAP ratios. The 1992 outlier could be explained in terms of the government's liberal approach to extending credit to all sectors of the economy during an election year. The study also shows that annual credit allocation to the private sector declined from 24.45% during the pre-reform period to a post-reform low of 6.99%. Thus, even though in absolute terms, it may look as if credit to the private sector has increased during the post-reform period, credit as a percentage of GDP declined during the post-reform period.

With regard to the distribution of domestic credit in the public sector in general and the private sector at large, the 1982-1987 period tends to suggest that the former was the main beneficiary of domestic credit. Since FINSAP in 1988, credit to the private sector appears to be greater than that to the public sector as a whole. However, this may be misleading, as the government now relies heavily on borrowing from the financial markets instead of through the banking sector. Thus, the proper way of comparing the allocation of credit to the government sector is to combine bank credit with securities issued by the government.

In addition, in an attempt to restrain monetary growth, the Bank of Ghana imposed high reserve requirements on banks' total deposits. The banks were encouraged to invest in government securities by allowing them to meet their reserve requirements with the Bank of Ghana. The result of this policy is increased bank investment in relatively risk-free government Treasury bills.

Table 3: Allocation of domestic credit (in percentages)

Year	Credit to Government Sector	Credit to Public Institutions Sector	Credit to Private Sector	Total Credit/ GDP
1982	59.13	32.53	8.33	21.69
1983	52.46	45.38	2.16	33.89
1984	78.49	8.98	12.53	17.88
1985	64.04	21.75	14.21	22.25
1986	66.38	17.24	16.38	23.26
1987	78.11	9.95	11.94	27.71
1988	13.83	13.09	73.08	7.77
1989	-14.86	27.96	86.90	4.97
1990	-78.97	32.02	146.95	2.12
1991	-253.59	68.09	285.50	1.13
1992	6.39	71.01	22.59	14.91
1993	2.58	23.52	73.91	6.45
1994	-9.30	41.97	67.33	8.20
1995	-21.39	40.95	80.44	6.59
1996	12.26	19.00	68.73	10.81
1997	13.54	18.87	67.59	10.21

Source: *Calculated from Bank of Ghana data, Quarterly Economic Bulletin, Various Issues.*

8.2 Credit Allocation Index

In order to examine the linkage between the efficiency of credit allocation and growth, we analyzed the pattern of growth during the post-reform period. If growth occurred, we examined the share of different sectors in total GDP. Next, we looked at the sources of growth as a second order efficiency condition. Indications are that the services sector is the largest single sector and, indeed, the leading source of economic growth during the post-reform period. It is our basic hypothesis that the growth-leading role of the services sector has been facilitated by the flow of credit to the sector. That is, any shifts in the pattern of credit allocation among sectors would partially explain changes in the relative shares of GDP.

Barring the early years of ERP, between 1984-1986, when the agricultural sector's share rose from about 55 percent to about 60% in GDP, the sector's share in subsequent years has steadily declined to about 40.8% in 1996. Considering the fact that the agricultural sector used to contribute the largest share in terms of production and labor force, its decline has policy implications for food prices, employment, and increases in the poverty level.

The industry sector, especially growth in manufacturing, has also remained weak during the post-reform period. The share of the industry sector in GDP declined from 14.4% to 14.1%. The only bright spots are the construction and the service sectors. The service sectors' share in GDP increased from 41.0% in 1988 to 48.3 % in 1996, while the construction sector's share increased from 2.6% in 1988 to 3.0% in 1996. Thus, the service sector has become the largest contributor to GDP growth during the post-adjustment period.

As a measure of efficiency, we looked at the sectoral allocation of bank credit by broad categories of economic sectors. We examined the impact of the redirection of credit to the various sectors during the post-reform period. The share of the service's sectors rose steadily since 1984 from about 37% to over 48% in 1996. In the case of industry, the change is not significant. Apart from a modest gain from 11.6% in 1984 to 13.3% in 1986, the sector's share hovered around 14% between 1987 and 1996.

Thus, any structural transformation that occurred in GDP was between agriculture and the services sector. Data indicated a 3% GDP growth rate for 1990 while the percentage change in the agricultural sector's share in GDP for the same year declined by 2.4%. In light of the declining trends in the agricultural and manufacturing activities, any growth that occurs in the GDP must therefore originate in the construction activities and services sector. The services sector grew at an increasing rate to offset the poor performance of the other sectors.

In order to assess the basic trend in the credit allocation, we constructed a credit allocation index that defines the pattern of changes in bank credit to the various economic sectors. An important feature is the drastic reduction in the proportion of total credit to the agricultural sector. The percentage of total credit allocated to the agricultural sector dropped from over 30 % in 1984 to about 12 % in 1996. The drop is particularly important for the crops and livestock sub-sector, where the proportion of credit that went to it fell from about 20% in 1987 to about 15% in 1988, the year of total financial liberalization, and then to the low level of 8.3% in 1993 and 1994. This trend poses a major policy constraint on poverty alleviation in Ghana, since the majority of the citizens live in the agricultural sector.

The proportion of total credit allocated to the industry sector did not show any consistent pattern. There was a declining trend in the three-year period between 1984 and 1986. The next three years experienced increasing trends, while the following two years saw reductions in credit to the industry sector. The rest of the period, from 1992 to 1996, did not show any discernable pattern. A closer look at the sub-sectors of the industry sector, however, reveals an intriguing pattern. From 1987 to 1992, loans to the construction sub-sector significantly increased, from 11.5% to 17.9%. Though it subsequently declined, it nevertheless had reached higher than the pre-FINSAP era. The manufacturing sector showed trends that suggest that apart from the years 1987-1989 and 1994-1996, credit proportions did not change significantly from the pre-FINSAP era.

The story is, however, markedly different for the services sector. With the exception of 1986, the proportion of total credit that went to the service sector was consistently higher than what prevailed in the pre-FINSAP era. The results of the study show a redirection of credit away from the pre-FINSAP-designated priority sectors, such as agriculture and manufacturing, to the services sector. Beneficiaries of this shift include wholesale and retail trade, hotels, government services, and construction sub-sector of industry. By implication, any shifts in the pattern of credit allocation between sectors would be explained in part by changes in the relative shares of GDP and the credit guidelines of the pre-FINSAP period. The increasing trend in the ratios for the construction sector, wholesale, retail, hotels, and government services confirm the profound shift of institutional credit towards those sectors perceived by the banks as less risky.

However, underpinning the removal of the "visible hand" from credit allocation is the argument that the financial system would accelerate economic development as long as banks facilitate the allocation of funds to the best users. The assumption is that the “invisible hand” through market forces would allocate funds to those projects that have the highest social return. However, the policy dilemma resulting from that assumption is that the social returns on projects may not coincide with private returns, which is the ultimate goal of private enterprises.

9. The Development of the Regression Model

9.1 Introduction

The preceding discussion reveals the apparent dilemma for policy makers regarding the effectiveness of the financial sector reform on savings mobilization. The objective of this section is to ascertain whether the savings function can be explained by variables that have been associated with savings mobilization in Asia, Latin American, and other developing countries. A number of studies that use cross-section and time series data on national saving rates include Collins (1989, 1980, and 1988), Giovannini (1983, 1985) and Gupta (1987). However, a few studies have used private sector savings to proxy for aggregate savings.

Other studies include the level of per capita income as an explanatory variable for private savings. It is hypothesized that per capita income will have a positive impact on the saving rate. Others argue that the distribution of income will also affect the savings function. In addition to real rate of interest as proposed by McKinnon (1973) and Shaw (1973), some consider foreign savings as a relevant determinant of private savings.

In view of the exchange volatility in Ghana, this study proposed to include foreign exchange rate as an explanatory variable. In addition, it also hypothesized that high Treasury bill rates will attract greater savings to the government Treasury bills. The inflation rate is also considered to have a greater influence on individual household's demand for money and, therefore, exerts a significant negative impact on household savings.

Thus, the functional relationship between the private savings rate and the above exogenous variables has been expressed as follows:

$$\mathbf{y} = \mathbf{X}\boldsymbol{\beta} + \mathbf{u} \tag{1}$$

where, $\mathbf{y}$ is the (N x 1) column vector of observations on the dependent variable. $\mathbf{X}$ is (N x k-1) vector of pre-determined variables, $\boldsymbol{\beta}$ is k x 1 column vector of the regression parameters. **u** is (N x 1) column vector of N stochastic disturbances. The regression model is based on the assumption that the error term is normally distributed with zero mean and constant variance or homoscedastic distribution, (**U ~N(0, δI**). It is also assumed that there is no serial autocorrelation between the independent variables.

9.2 Data sources and scope

Data for this study is from 1980 to 1997. This period has been divided into two periods, pre- (1980 – 1989) and post-reform (1990-1997). Both microeconomic and macroeconomic data have been collected over the 18-year period. Data sources include: (a) Bank of Ghana, Quarterly Economic Bulletin (various issues), (b) Ministry of Finance, Statistical Service, Quarterly Digest of Statistics (various issues), (c) Central Bureau of Economic and Statistics, Economic Survey (various issues), and (d) IMF, International Financial Statistics (various issues).

9.3 Hypotheses

We assume that saving is determined by the rate of interest on deposit. Higher rates of interest on deposits induce higher saving rates. Generally, increases in the levels of income lead to higher propensities to save. Therefore, given a price level, higher income should lead to higher savings.

It is assumed that high levels of inflation induce economic agents to increase the demand for money in order to maintain their standard of living. Such an inflationary environment discourages savings. A negative relationship exists between the level of saving and the level of inflation. The exchange rate is another determinant of the level of national savings. Theories on open economies suggest that favorable exchange rates lead to capital outflows, and, thus, a reduction in national savings in a country. In other words, the higher the price of the local currency in relation to the foreign currency, the more economic agents save and invest locally.

Finally, we introduce the yield on alternative financial instruments available to the public as substitute-instruments to savings instruments with the banking sector. The higher the rate of interest on the alternative financial assets compared to the deposit rate, the less economic agents will save with the banking sector.

9.4 Measurement of Variables

We measure savings for deposit money banks as time and savings deposits. We use per capita GNP to measure the level of national income. We measure inflation rates as the rate of change in the level of Consumer Price Index over the study period. The deposit rate is the rate offered to resident customers for demand, time, or saving deposit, as collected by the Bank of Ghana for the prudential returns of banks. The exchange rate is the unit of national currency per dollar. Finally, we represent the yield on alternative financial assets with the Treasury bill rate.

9.5 Analysis of the regression results

The first step of the regression estimation and analysis is testing the unit root in order to detect nonstationarity in the time series (data). Using the Box-Jenkins approach, we found that the variables were stationary. The savings function is then estimated using SPSS computers statistical package for (a) the entire period of the study (1980-97), (b) the period preceding the structural adjustment (1980-88), and (c) the period after the adjustment (1989-97).

Table 4 (in Appendix 1) shows the regression results of the savings function. Overall, the F-statistics reveal the model's good fit at the 5 percent level of significance. High values of R^2 are an indication that the model explains a high percentage of variations in savings in Ghana. Because of the high values of the coefficients of determination, we further introduced a time dummy variable in the equations to remove any spurious correlation among the variables. However, the results did not change significantly. As a result, we dropped the dummy variable from the regression results. The values of the Durbin-Watson statistics largely differed, forcing us to accept the null hypothesis of no autocorrelation for the pre-adjustment period and reject it for the entire period and post adjustment period.

However, the regression results based on the coefficients show poor estimates for the pre- and entire period of the study. The regression results for the entire period (1980 – 1997) show that the deposit rate, inflation rate, the exchange rate, and the Treasury bill rate have the wrong signs. This may be due to the quality of data during that period.

Results of the post-adjustment era show a greater improvement. With the exception of the exchange rate, all the exogenous variables have the right sign. However, contrary to economy theory prediction, the deposit rate, the Treasury bill yield, the inflationary rate, and the per capita income have been found statistically insignificant. At this point, we realized that the exchange rate might be correlated with other exogenous variables. As a result, we excluded the exchange rate in the second regression estimation summarized in Table 5, Appendix 2.

The table shows that the second regression results (Table 5, Appendix 2), exhibit a greater improvement when we used the post-adjustment period (1989-1997). For this period, all the exogenous variables exhibit the correct signs as predicted by theory. The deposit rates and the per capita income variables are found to be significant explanatory variables of savings at the 5% level of significance for the post-adjustment period. Additionally, the substitution effect of Treasury bill yields and the negative impact of inflationary impact has been confirmed by the signs of the two exogenous variables that are also found to be statistically significant at the 5 percent level of significance.

The policy implications of these results show that the inflation pressures in Ghana have become a major constraining factor on the savings mobilization in Ghana. Also, increases in deposit rates may have a significant impact on savings mobilization. Thus, a competitive banking environment that raises deposit rates may increase savings rate, while an increase in economic growth may lead to higher deposit by the public. On the other hand, the high Treasury bill yields serves as a disincentive for deposit mobilization in the banking sector, especially for the large depositors who prefer to hedge their position in the Treasury bill market where yields are far ahead of the inflationary rate.

10. Summary, Conclusions, and Policy recommendations

10.1 Summary and conclusions

This study finds that the financial sector reforms have had a considerable impact on the capacity of the Ghanaian banking sector to mobilize financial savings. The restructuring of the banking sector and the liberal entry and exit policies resulted the in dynamic growth of banking and non-banking financial institutions. Furthermore, there has been introduced innovative information technology that has increased the efficiency of banking services of those banks that have invested in technology and computers.

These efficiency gains resulted in the provision of intermediation services, reduction in waiting time to transact banking business, and reduction in the transaction costs of banks and customers. Other benefits include profit enhancement, improvement in the quality of assets, and the reduction of non-performing loans. There has also been a significant improvement in the banks' capital adequacy positions.

The establishment of Ghana Stock Exchange (GSE) also has enhanced the privatization of government owned commercial banks. The government's privatization efforts resulted in the selling of majority shares in Ghana Commercial Bank and SSB Bank, which are now listed on the GSE.

Depositors' reactions were mixed. The liberalization of interest rates and the establishment of government Treasury bills market provided alternative forms of portfolio adjustment to private households. As a result, private households who desire low risk and moderately high returns could choose to invest in liquid government Treasury bills.

The liberalization of the foreign exchange market and the authorization of individual holdings of foreign accounts resulted in individuals hedging their inflation and foreign exchange risk by substituting foreign exchange holdings for cedi denominated assets. Consequently, cedi-denominated savings declined. This has a negative impact on cedi-denominated savings in the domestic market.

In terms of financial deepening, the study shows that individual real assets holdings have declined as a response to the policy changes. However, despite the significant progress in the banking sector's financial intermediation, financial savings through the banking sector have not increased significantly. Instead, there has been a significant increase in financial assets mobilization outside the banking sector. The study also shows that despite the emergence of new banks, the macroeconomic environment and government fiscal and monetary imbalances tend to constrain savings mobilization.

One important observation is the high spread between lending and borrowing which is an indication of imperfection and inefficiency in the banking sector. Interviews with bank managers revealed that those spreads are the result of the forced lending of excess reserves to the government at subsidized interest rates. The study also found that there has been an allocative inefficiency of bank's portfolio allocation in favor of short-term government securities, at the expense of providing long-term credit to the productive sectors of the economy.

The study found that the reform was characterized by slow pace and the absence of needed reforms, such as the independence of the Bank of Ghana and the full liberalization of interest rates. The Ghanaian experience with financial reform has supported the general notion that financial reform carried out in countries with the unstable macroeconomic environment of high inflationary pressures has less chance of success than it does in those countries where macroeconomic stability prevails at the time of financial sector reform. In the case of Ghana, the partial liberalization of interest rates has not been accompanied by increases in real deposit rates. The high inflationary pressures have resulted in negative real rates of interest. This has produced a disincentive for financial savings. Additionally, liberalization of the exchange rate in an inflationary environment has led to constant depreciation of the cedi and has created a volatile foreign exchange market. This is evident in the increasing process of dollarization in Ghana. Based on these findings, the following recommendations are offered.

10.2 Policy recommendations

1. A precondition for the efficiency of a deregulated financial sector is a stable macroeconomic environment during the time of the financial sector reform. Thus, in order to ensure effective financial development and savings mobilization, the government should stabilize the macroeconomic environment. This will create an environment conducive to financial deepening and savings mobilization.

2. The role of monetary policy in stabilizing macroeconomic variables has been hampered by the government fiscal policy of deficit financing. It is therefore essential to ensure that government fiscal policies are designed to complement monetary policies, not to work against monetary policies. This will ensure harmony of monetary and fiscal policy and restore domestic and international confidence in the banking system.

3. The Central Bank must have a reasonable degree of independence in the conduct of monetary policy. In this regard, the Central Bank must be free to use its instruments to attain broad targets consistent with stable economic growth and poverty alleviation. In particular, interest rate policy must be freed from governmental influence so that it can be effectively employed in response to actual or anticipated developments in the monetary situation and the rate of inflation.

4. There is the need to adopt policies to lower inflation rates to single digits in order to raise real interest rates and provide a conducive environment for savings mobilization. Such practices should include efficient government revenue and expenditure management through programmed budgeting. In addition, Ghana may learn the virtues of cash budgeting from the Tanzania government. Even though others argue

about the constraining impact on long-term capital spending, cash budgeting ensures against fiscal imbalances that undermine economic stability.

5. One major unintended consequence of reform is the closure of banks in the rural areas and subsequent concentration of banks in the urban centers. There is a need to adopt various policy measures to restore banking services to the rural population. This may include the introduction of "banks on wheels" to the rural areas of the country in order to mobilize savings from the informal sector.

6. Based on the survey report, location plays a major role in the choice of banking services among Ghanaians. The concentration of banks in the urban centers has denied the suburbs of banking services. We recommend moving banking services closer to the people in the suburbs. The extension of bank branches and ATMs to the suburbs will enhance mobilization of savings. It will also ensure access to depositor funds, especially during weekends, when most people's demand for cash increases.

7. The survey results indicate that the current banking hours from 8.30 a.m. to 2.00 p.m. are inconvenient for the public, especially the market women and white-collar workers. There is the need for longer banking hours and Saturday banking services. In addition, the location of ATMs at market centers in urban cities, university campuses, and major government institutions will enhance the public's patronage of banks.

8. Further savings mobilization may be enhanced by the revival of the Post Office Savings Bank, which dates back to 1888 in Ghana. This may be possible, since there is a post office in every town in Ghana and many Ghanaians, especially the elderly people, used that service in the past.

9. One ingredient of savings mobilization is the enhancement of public confidence in the banking system. Policy changes, such as the introduction of privacy laws to govern individual bank deposits, will go a long way in encouraging the public to keep its money in the banking system. Additionally, prudential regulations to monitor the activities of banking institutions and the enforcement of banking laws would enhance confidence in the banking system.

10. Bank deposit insurance as has been practiced in many developed countries ensures the protection of depositors' savings during times of insolvency or bank failures. The existence of deposit insurance would have averted the loss suffered by many "magic bank" depositors during the early part of the financial sector reform. Thus, the government should encourage the introduction of bank deposit insurance to ensure public confidence in the banking system. This may also protect the government from unnecessary bailout of private banks during times of bad management decisions.

11. The encouragement of check usage and the reduction of cash holdings should be encouraged. The establishment of legal frameworks and the enforcing of "returned

check laws" would increase the acceptability of checks by both the banking institutions and the public.

12. The use of innovative banking products and services, such as the "Sika card" and other pre-payment devices, may reduce the excessive liquidity outside the banking sector.

13. The fragmentation of the banking system into commercial, merchant, and development banks seems to be gradually eroding. As an indication for directions for change, many developed countries are following in the footsteps of the German and the United States system of "universal banking," one-stop banking where banks engage in providing various financial services, including traditional deposit mobilization and credit allocation, purchase of stocks on behalf of clients, and investment and consumer credit counseling.

14. The absence of judicial laws to enforce bankruptcy against debtors makes it difficult for banks and other financial institutions to reduce credit risk, by preventing their going after defaulters through the court system. The enforcement of bankruptcy laws will encourage banks to minimize their losses from defaulters on loans.

15. As many depositors reveal that they are at the mercy of commercial banks for loans and other banking services, it is essential for the government to enact laws ensuring the public's equal access to credit from the banking sector. It is recommended that Parliament enact Consumer Bill of Rights for equal access to credit regardless of individual social status, sex, marital status, connection, and class. A cornerstone of this bill should be the enactment of various consumer protection regulations such as the Equal Credit Opportunity (ECO) and the Truth in Lending and Disclosure. It is recommended that the enforcement of this regulation should be entrusted into the hands of the BOG.

16. The computerization of the BOG, especially the BSD, should be given top priority in order to link the BSD with the commercial banks. This would enable bank examiners to carry out their on- and off-site examinations of commercial banks.

17. Integration of informal banking system into the formal system would enhance the prospects of mobilizing savings from the informal sector in the urban and rural areas. It is recommended that other commercial banks and non-banking financial institutions should embrace the introduction of innovative products such as the "Susu savings scheme" initiated by some commercial banks. This Susu scheme would increase savings mobilization from the informal sector.

18. The government's imposition of high reserve requirements on the banking sector leads to its inefficient portfolio management. This also leads to higher spreads between lending and deposit rates. It is therefore recommended that the government should consider lowering the high reserve requirements on deposits in order to allow for the

banking sector's portfolio diversification. Furthermore, the government should endeavor to synchronize its sources and uses of funds by exploring opportunities to issue long-term bonds in order to raise needed funds for long-term projects. This may remove a lot of pressure from the short-term securities market.

19. There is the need to provide high quality bank services. Adoption of high professional standards, prompt attention to depositors' needs, and shortening the time it takes to withdraw or deposit funds would reduce the public's banking transaction costs. This could be achieved by (a) hiring and training of qualified staff and management team, (b) utilizing bill-counting machines in order to shorten long-waiting lines at banks, (c) computerizing of banking services, and (d) displaying sensitivity to depositors' complaints.

20. Financial deepening can also be accomplished by the introduction of improved banking products such as credit cards, commercial paper, credit counseling, travelers checks, money orders, bankers acceptance facilities, and other services that facilitate commercial transactions.

21. There is the need to rationalize the cost structure of banking services. The multiplicity of service charges, such as commission on turnover (COT), charges on checks purchased (C/P), commitment and processing fee, and interest on drafts and monitoring fees have the tendency to increase the effective cost of borrowing from the banking system. This practice also discourages the public from saving through the banking system.

22. One major hindrance to banking and to using of checks is the structural rigidity of clearing checks through the banking system. The computerization and the establishment of a national clearing system or regional clearing system would expedite the clearing of checks and encourage both the banking sector and the public to embrace the use of checks.

23. Recent developments and insolvency of some of the rural banks have undermined the public's confidence. This development has threatened the unit banking system as a viable means of providing banking services to the rural residents. There is the need to integrate rural banks with the strong and well-managed urban commercial banks in order to infuse management talents and skills into the rural areas. Additionally, there is the need to train the staff and management of rural bank managers. Frequent monitoring and bank examination will also improve the rural bank sector efficiency and solvency.

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12. Appendices

Table 4: Estimates of the Savings Equation

Variables	Entire Period 1980-95	Pre-adjustment 1980-88	Post-adjustment 1989-95
Constant	-2.48	-1.88	-6.19
	(3.25)*	(2.8)*	(2.95)*
Deposit rate	-1.06	-0.29	30.44
	(0.69)	(1.81)	(1.80)
Treasury bill rate	2.10	1.69	-25.19
	(1.73)	(1.09)	(1.91)
Inflation rate	0.35	0.08	-2.39
	(2.87)*	(1.84)	(1.86)
Exchange rate	0.07	-0.19	0.49
	(0.62)	(0.47)	(0.49)
Per capita GNP	1.05	0.97	2.62
	(18.31)*	(1.83)	(1.83)
R-square	0.98	0.99	0.99
Adjusted R-square	0.97	0.99	0.95
F-statistics	137.5	294.9	23.84
Durbin-Watson	1.75	2.1	3.13

Note: The numbers shown without parentheses are regression coefficients, while the numbers in parentheses are t-statistics. Asterisks suggest the coefficients are statistically significant at the 5 percent level of significance.

Table 5: Estimates of the Savings Equation (with significant variables only)

Variables	Entire Period 1980 - 95	Pre-adjustment 1980 - 88	Post - adjustment 1989 - 95
Constant	-2.78	-0.62	-6.99
	(4.41)*	(4.11)*	(4.59)*
Deposit rate	1.65		33.44
	(4.25)*		(2.87)*
Treasury bill rate			-27.32
			(2.85)*
Inflation rate	0.33	0.20	-2.44
	(2.73)*	(2.55)*	(2.14)*
Per capita GNP	1.05	0.20	3.18
	(21.72)**	(41.06)**	(5.36)*
R-square	0.98	0.99	0.98
Adjusted R-square	0.98	0.97	0.96
F-Statistics	21.76	65.58	35.78
Durbin-Watson	2.45	1.96	2.56

** Significant at 1% level of significance
*   Significance at 5% level of significance

Note: The numbers shown without parentheses are regression coefficients, while the numbers in parentheses are t-statistics. Asterisks suggest the coefficients are statistically significant at the 5 percent level of significance.

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