AN EXAMINATION OF THE DETERMINANTS OF INTEREST RATE SPREADS IN GHANA

EXECUTIVE SUMMARY

Interest rate spreads in Ghana have been historically high and appear to have increased marginally post April 2009. As the analysis below will show, there seems to be relative stability in the average deposit rate; suggesting that the increase in the interest rate spread may be more as a result of rising average lending rates than falling average deposit rates.

High interest rate spreads constrain the growth and development of small and medium enterprises (SMEs) and this has led to calls from the Association of Ghana Industries for efforts to be made in bringing interest rate spreads down. That SMEs – commonly referred to as the engines of growth with the economy – continue to face difficulties with regards to access to and cost of credit necessitates an understanding of the determinants of interest rate spreads in order that appropriate policies may be formulated and implemented to address the problem.

Several factors explaining the size of interest rate spreads have been discussed in the literature. These can be categorized as being bank-specific – and include the composition of deposit and loan portfolios, ownership, bank size, operating costs, provisioning for bad loans, and profit margin; industry-specific – such as the level of taxes levied on the industry, the level of competition in the market, and the degree of financial sector development; or as being determined by macroeconomic conditions – for example the size of the fiscal deficit, the level of Treasury-bill rates, the level of inflation, and the level of the reserve requirement. Of the above factors, CEPA is of the view that those relating to the macroeconomic environment are the most relevant in explaining the Ghanaian case.

The large size of the fiscal deficit, its financing – by borrowing domestically or from external sources, through loans extended by the Bank of Ghana, or by the accumulation of arrears – and relatedly its implications for liquidity management and inflation can influence lending rates and hence the interest rate spread. Efforts at consolidating the deficit, for example, by the levying of taxes on the financial sector can also have negative consequences for the interest rate spread.

When taxes are levied on the banking sector in an effort to consolidate the deficit, this can create a wedge between deposit and lending rates causing the interest rate spread to widen. In this regard, therefore, the 17.5 percent VAT recently levied on financial transactions could potentially result in an increase in the size of interest rate spreads in the banking sector.

Financing the deficit through the issuance of government bills and bonds, for example, can also cause Treasury-bill rates to rise. As these rates represent an opportunity cost to banks of lending to the private sector, higher Treasury-bill rates can translate into higher lending rates to businesses.

Arrears financing of the deficit can also result in an increase in the size of non-performing loans in the banking system; leading to higher lending rates. This is because a large number of SMEs tend to rely on the government for contracts. Thus, a failure of the government to meet their payment obligations to these SMEs renders them incapable of servicing their loans and as a result NPLs to rise. Bankers, in turn, try to offset their losses on non-performing loans by charging higher rates to their performing borrowers, causing lending rates to rise.

Finally, financing the deficit through central bank loans to the government can have immediate liquidity implications which, if not properly and adequately sterilized can negatively impact on lending rates. Ideally, open market operations (OMO) should be the means by which the Bank of Ghana (BoG) manages liquidity within the system. However, because Treasury-bill rates are often high, conducting OMO can be expensive

for the BoG. As a result, the BoG tends to use other non-market means of liquidity management which can cause the interbank market rate – a borrowing cost to banks – to rise and hence lending rates to rise.

The significance of the macroeconomic environment in determining the size of the interest rate spread, thus, calls for a strong and credible consolidation effort aimed at reducing the size of the budget deficit; as well as efforts aimed at clearing arrears and preventing the accumulation of new ones to help reduce the size of non-performing loans in the banking system. These, together, can help to reduce lending rates and, consequently, improve the cost of credit to SMEs.

Building the capacity of SMEs to strengthen their governance and management structures, as well as to increase transparency in their financial / accounting practices could also go a long way in improving the effectiveness of their demand for credit and, hence, their access to credit. This is because, as cited by the banks, "unstructured governance and management systems", "opacity of financial circumstances", and "high default rates" represent the three most critical factors that contribute to the financial exclusion of SMEs.

Going forward, CEPA plans to undertake a micro-level analysis of interest rate spreads in the Ghanaian banking sector to better understand the cost and revenue structure of the banks, the composition of their deposit portfolios, the nature of competition in the industry, and the decision making processes with regard to the extension of credit to the private sector.

I.   INTRODUCTION

A number of studies have suggested that there is a critical link between the efficiency of financial intermediation and economic growth. A more efficient financial system, for

example, benefits the real economy by allowing higher expected returns for savers and / or lower borrowing costs for lenders such that investments rise and the economy grows.

The process of financial intermediation involves the transfer of funds from economic units with a surplus of funds (i.e. lenders) to those with a deficit (borrowers). Banks, primarily, perform this intermediation role by accepting deposits from lenders – who, in turn, receive a deposit rate – and providing loans to borrowers – who pay a lending rate. The difference between the lending rate paid by borrowers and deposit rate received by lenders is the interest rate spread. It reflects the cost of intermediation – inclusive of profits – and provides a generally accepted measure of the efficiency of the intermediation process.

The existence of market frictions – such as transactions costs and information asymmetries – allows for some level of interest rate spread to be charged by banks as these market imperfections create a wedge between what borrowers pay and lenders / depositors receive. A large spread, however, is an indication of the degree of inefficiency in the intermediation process. As would be explained below, banks dominate the financial sector in Ghana; hence the remainder of the discussion will focus on the banking sector.

Historically, Ghana has been noted as a country having very high interest rate spreads (Garr and Coleman 2013; Mensah and Abor 2013). Over the period from January 2006 to November 2014, these spreads – measured here as the difference between the average lending rate and the average of the demand deposit and saving deposit rates – have averaged about 22.2 percent. Observations from Chart 1 below show, however, that there seems to have been a marginal increase in the spread since April 2009 – with spreads averaging about 20.83 percent between January 2006 and April 2009, and about 23.01 post April 2009.

Chart 1 also shows that there is relatively more stability in the average deposit rates than in the average lending rates, suggesting that variability in the interest rate spread may be more as a result of changes in lending rates than in deposit rates. In spite of the relative

stability in the average deposit rates, deposit mobilization by banks has increased – with customer deposits rising from 58 percent of total liabilities in 2009 to 67 percent in 2012 (demand deposits rose 10 percentage points to 41 percent and term deposits fell 4 percentage points to 13 percent)[1]. The increased use of lotteries / promotions in the deposit mobilization effort could explain the rise in deposits though average deposit rates have remained fairly unchanged. Additionally, depositors may be faced with few or no alternatives for their savings, or may be lured by the prospects of securing loans in the future and hence be compelled to keep bank accounts despite the low deposit rates offered by the banks.

Chart1: Interest rate spread in Ghana: Jan. 2006 – Nov. 2014 (percentages)
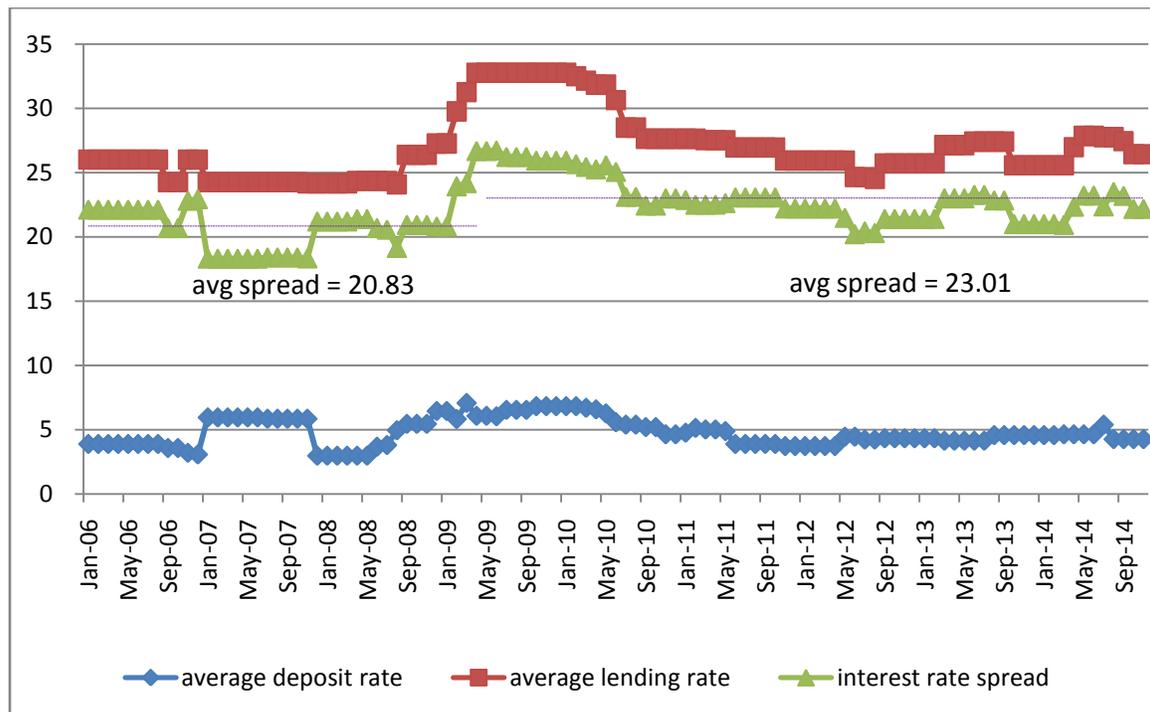
Source: based on data from the Bank of Ghana

The combination of low deposit rates and high lending rates that keeps interest rate spreads high in Ghana can be detrimental to the quest for growth and job creation. Low returns of deposits can discourage potential saving – thus limiting the financing available for potential borrowers and hence lowering the level of investments and growth. On the

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[1] Staff report of the June 2013 Article IV Consultation of the IMF with Ghana

other hand, high lending rates can discourage investors from borrowing – again impacting negatively on the level of investments and growth. Indeed, the Association of Ghana Industries (AGI) has, on many occasions, called for banks to lower their spreads in order to facilitate investments by private sector businesses – consistently citing access to and cost of credit as among the top challenges facing the private sector, and in particular small and medium enterprises (SMEs).

The implications of interest rate spreads – and hence intermediation efficiency – for economic growth, thus, necessitate a clear understanding of the determinants of interest rate spreads in order that appropriate policies can be developed and implemented to reduce them. A widely used approach is to classify these determinants according to whether they are bank-specific, industry/market-specific, or macroeconomic in nature.

Some bank-specific factors that have been suggested to influence the size of interest rate spreads include: the composition of deposit and loan portfolios, ownership, bank size, operating costs, provisioning for bad loans, and profit margin.

Industry level factors that could affect the interest rate spread also include: the level of taxes levied on the industry, the level of competition in the market, and the degree of financial sector development.

Finally, macroeconomic factors such as the pace of economic growth, the size and financing of the fiscal deficit – and relatedly the amount of domestic government borrowing undertaken; the level of Treasury-bill rates, the level of inflation, and the level of the reserve requirement have all been postulated to affect the size of the interest rate spread.

Additionally, at the macroeconomic level, the effectiveness of contractual and informational frameworks can also affect the size of spreads. The certainty of legal rights and the predictability and speed of their fair and impartial enforcement make for a more efficient contractual framework which can have a dampening effect on spreads – by

helping to reduce overhead costs as the cost of creating and enforcing collateral agreements decreases; and by helping to reduce NPLs as better contractual enforcement reduces incentives for borrowers to default and increases the share that creditors can recover in case of default.

Improved informational frameworks can also reduce information costs – more transparent financial statements and credit information-sharing lower the cost of screening and monitoring borrowers, reduce adverse selection and hence future loan losses. Credit information-sharing can also positively impact on competition as borrowers are able to offer their positive credit history to other creditors.

II.   CHARACTERISTICS OF THE GHANAIAN BANKING SECTOR

The Ghanaian financial sector is dominated by banks; with commercial banks accounting for about 85 percent of total financial sector assets in 2013 and non-bank financial institutions accounting for about 11 percent. Rural and Community Banks make up about 4 percent of financial sector assets and are fast becoming the main channel for financial inclusion in Ghana. Additionally, while only about 30 percent of adults have an account at a formal institution, a sizeable part of the population relies instead on the services of about 600 microfinance companies as well as 3,000 – 5,000 individual susu collectors that serve over half a million customers (IMF 2013 staff report).

Size and ownership
The banking sector has more than doubled since 2010, with total commercial bank assets rising from GHC 17 billion to about GHC 36 billion in 2013. Domestic private banks have grown particularly fast, though foreign banks continue to have the largest market share. As of 2012, domestic private banks owned about 22 percent of total assets – compared with 12 percent in 2005 – while foreign banks accounted for 55 percent of commercial bank assets compared to 49 percent in 2005. The role of public banks,

however, is gradually decreasing – reaching 23 percent of assets in 2012 compared with 40 percent in 2005 (2013 IMF staff report).

The declining role of public banks can have important consequences for the size of the interest rate spread. This is because, for a number of reasons, state-owned banks have tended to be less "efficient" than privately-owned banks (Jiang and Yao 2010/11; Andrews 2005; Cornett et. al 2009) – they are poorly managed and decision making is often politically motivated. As a result of their inefficiency, state-owned banks tend to charge higher spreads. Additionally, a large share of state-owned banks in the banking sector not only drives up the average spread faced by depositors and borrowers, but through their dominant role, can provide rents to privately owned more efficient banks that charge the same spread while enjoying higher profits. Alternatively, these privately-owned banks could choose to protect their niches in the sector by charging marginally lower spreads. In either case, growth is hampered.

Concentration and Competition

According to the June 2013 IMF staff report the Ghanaian banking system is thought to be competitive by standard metrics – barriers to entry and concentration of assets. The five largest banks control 45 percent of assets and the largest has a 12 percent share of the market. There is also no sign of broad market consolidation, with few mergers, limited exits, and new domestic and foreign banks still applying for licenses.

In spite of the above assessment by the IMF, there is enough structural evidence – i.e. the oligopolistic nature of the banking system – to suggest that the Ghanaian banking industry is not a competitive one. The lack of competition can keep interest rate spreads high, thus preserving high profit levels in the industry. Indeed, the Ghanaian banking sector is highly profitable with returns on assets at 6.2% and returns on equity at 30.9% in 2013.

Access to credit

Access to credit remains constrained and below the potential needs of the country. While deposit mobilization has improved – increasing from 20 percent of GDP in 2007 to about 33 percent in 2014 – private credit in recent years has been stable at about 15 percent of GDP – only rising to 18.6 percent in 2014 – (with public sector credit at about 2 percent of GDP). In spite of the reasonably competitive environment, private credit has remained relatively low as a share of GDP and access to affordable credit remains a major constraint to growth.

Banks' business is significantly concentrated, with loans being primarily extended to a few large companies – particularly those in the telecoms, petroleum, and construction industries. At the end of September 2012, 55 percent of all loans went to the fifty largest borrowers (2013 IMF staff report). This large figure, moreover, underestimates credit concentration as many institutions implement a "value chain banking" approach, offering credit to the employees and suppliers of these large companies. By extending banking services and products to the smaller enterprises that provide services to their larger customers, the banks ensure a more enhanced banking and service experience for their larger clients. This value chain approach to banking is, therefore, not a deliberate attempt by the banks to focus on the SME segment of the economy but rather a 'tactical' one aimed at enhancing banking services to the larger corporations. As the banks noted in the 2013 Ghana Banking Survey, SMEs are important players in the supplier and consumer distribution chains of the larger enterprises and many of these larger companies rely on the SMEs for their own success.

The 2013 Ghana Banking Survey also acknowledged the importance of including SMEs in the financial intermediation process. However, many of the banks also stated that their top two priority areas of strategic interest, with regards to the SME banking initiatives, are transaction banking and deposit mobilization. This is because banks expect the SME economy to remain predominantly trade focused – with very little possibility of them making a transition to into larger business which will have need for sizeable, medium-to-long term credit at reasonable prices. Targeting SMEs for credit expansion, therefore, has

not been a strategic focus of many banks and some are only now preparing to deal with that market.

According to the banks, the three most critical factors that contribute to the financial exclusion of SMEs include: "unstructured governance and management systems", "opacity of financial circumstances", and "high default rates."

As Gockel and Akoena have also noted, applications for credit by SMEs reflect more of a "desire for credit" than an effective demand for credit and, hence, are often rejected by the banks. SMEs reveal their demand for credit in their application for financial support from a bank at a given interest rate. Yet, merely applying to a bank for credit does not, by itself, constitute an 'effective' demand for credit. Demand for credit is effective only if it is backed by, at the least, a preparedness to meet all the requirements of the lending institution. Thus, the shortage of creditworthy projects presented by SMEs, may suggest that access to finance is not the binding constraint. It becomes a binding constraint only when all other ingredients for successful investment are available, and the finance needed to activate those ingredients to generate a positive stream of returns on the investment is not available.

Non-performing loans (NPLs)

The banking sector has experienced periods of heavy loan losses resulting from poor governance and weak credit standards and banks have been ill-equipped to address the pronounced economic cycles in the country.

While NPLs as a share of total loans have declined marginally – from 12 percent in 2013 to 11.3 percent in 2014 – they remain high. NPLs can be a source of upward pressure on spreads and real lending rates as bankers try to offset their losses on non-performing loans by charging higher rates to their performing borrowers. In cases of general financial distress, however, banks face the risk of rather increasing the share of NPLs if they try to charge their remaining borrowers high real interest rates.

Indeed, high real interest rates are constraining private sector access to credit and creating risks of a renewed increase in nonperforming loans (NPLs). Government's habit of relying on arrears as a means of financing the deficit also introduces uncertainty into financial transactions – causing lending rates to rise – as banks become concerned that NPLs may increase. This is because, a significant number of SMEs reportedly depend on government contracts; thus arrears accumulation by government raises the risk of nonpayment and causes banks to scrutinize these firms more.

III.   THE MACROECONOMIC ENVIRONMENT

The Ghanaian economic environment is characterized by excessive government expenditures that often result in large fiscal and current account deficits that must be financed – either by borrowing domestically or from external sources, through loans extended by the Bank of Ghana, by the accumulation of arrears, by the levying of taxes, etc. These large deficits can have adverse liquidity and inflationary consequences which can contribute to higher lending rates and ultimately higher interest rate spreads.

Financing the large fiscal deficits, through the sale of government bills and bonds, causes Treasury bill rates to rise; and to the extent that these rates remain a key determinant in the setting of customer rates, high Treasury bill rates also lead to high lending rates – the link from Treasury-bill rates to lending rates is further discussed on page 9. Government's increased borrowing from the domestic financial system to finance the budget deficit also reduces the availability of credit to the private sector – crowding them out – through reduced access and / or higher lending rates.

As previously mentioned, arrears financing of the deficit has adverse implications for the size of non-performing loans in the banking system, and hence for the high interest rate spreads charged by the banks.

As part of its fiscal consolidation efforts, the government has imposed a 17.5 percent VAT on financial transactions to be collected starting in 2015. Such taxes on financial

transactions can drive a wedge between what borrowers pay – raising the lending rate if the demand for credit is inelastic – and what lenders receive – lowering the deposit rate if the supply of deposit is inelastic – thereby increasing the size of the interest rate spread. The levying of a 17.5 percent VAT on financial transactions, going forward, could therefore result in an increase in spreads in the banking sector.

The large fiscal deficit can have negative liquidity implications which, if inadequately or improperly managed by the BoG, can have inflationary consequences and can also lead to higher lending rates and a widening of the interest rate spread. The direct financing of the fiscal deficit by the BoG, particularly, can have immediate liquidity consequences which call for active management.

Under the inflation targeting framework of the BoG, the monetary policy rate (MPR) is the tool of monetary policy and the BoG sets this rate as a guide for the direction of monetary policy. Once the monetary policy rate is set, the BoG has at its disposal a variety of instruments for managing liquidity and steering market interest rates in line with its policy rate.

The intermediate interest rate target of the BoG is the interbank interest rate which the BoG attempts to steer within a band – at its last MPC meeting in November 2014 the MPC widened the band from 200 basis points above and 100 basis points below the MPR to 300 basis points above and below the MPR. The BoG's ability to keep the interbank market interest rate within the interest rate band / corridor is an indication of how well the BoG is managing liquidity and of the credibility of the MPR as a signal of the monetary policy stance – reason for concern over the wider corridor.

Often times, high Treasury bill rates make the cost of liquidity management using open market operations (OMO) expensive and the BoG resorts to other – non-market – means of managing liquidity. In May 2012, for example, the BoG required that the mandatory reserve requirement on both cedi and foreign currency deposits be held in cedis only, and that all banks provide 100 percent cedi cover for their off-shore accounts. In April 2014,

the BoG decided to raise the cash reserve requirement from 9 percent to 11 percent. The use of such administrative measures in the liquidity management effort tends to cause the interbank market interest rate to overshoot the upper bound of the interest rate corridor – an indication that the true monetary policy stance is much tighter than can be judged from the MPR. To the extent that the interbank interest rate represents the cost of funds to banks, overshoots in the interbank interest rate translate into higher lending rates and, thus, higher interest rate spreads.

At its last MPC meeting in November 2014, the MPC reduced the cash reserve requirement 100 basis points from 11 percent to 10 percent, in addition to raising the MPR from 19 percent to 21 percent and widening the interest rate corridor, in an arguably cautious attempt to re-align the interbank interest rate. Subsequently, the interbank market interest rate has declined and is now within its wider corridor.

Reserve requirements are an implicit tax on financial intermediation and they can drive a wedge between borrowing rates and lending rates, hence, raising the interest rate spread. This is because the reserve requirement allows only a fraction of the deposits to be loaned; thus, the lending rate must exceed the deposit rate in order that the total interest due on the deposits will be covered.

Table 1 below provides a correlation matrix of the between the 91-day Treasury bill rate and the lending rate, as well as between the interbank interest rate and lending rate. The table shows a positive correlation between both the 91-dat Treasury bill rate and the interbank lending rate with the average bank lending rate, though the correlation with the T-bill rate is stronger.

The Treasury-bill rates represent an opportunity cost to the banks of lending to the private sector while the interbank market interest rate represents the cost of borrowing to the banks. As such, the higher the opportunity cost and / or the cost of borrowing, the higher would be the lending rate charged by the banks to the private sector.

Table 1: Correlation matrix (Jan. 2013 – Nov. 2014)

	MPR	91-Day T-Bill Rate	Inter-Bank Interest Rate	Average Lending Rate	Average Deposit Rate
MPR	1.00				
91-Day T-Bill Rate	0.60	1.00			
Inter-Bank Interest Rate	0.75	0.81	1.00		
Average Lending Rate	0.24	0.63	0.49	1.00	
Average Deposit Rate	0.27	-0.15	0.11	-0.02	1.00

An estimated equation of the lending rate, as a function of both the interbank interest rate and 91-day Treasury bill rate shows a greater and more significant impact of the 91-day Treasury bill interest rate on lending rates. On average, about 30 percent of changes in the 91-day Treasury bill rate are passed through to the average bank lending rate; while the pass-through rate for the interbank interest rate is found to be not significantly different from zero. Previous work, however, has shown that these results – i.e. the strength and significance of the pass-through to lending rates – can be period-specific. Bank surveys have also suggested that the extent or number of banks borrowing from the interbank market can also influence the degree of impact of the interbank interest rate on lending rates. Where few banks are borrowing from the interbank market, the 91-day Treasury bill rate can tend to have a larger influence on the lending rate.

IV.   CONCLUSION: POLICY RECOMMENDATIONS FOR REDUCING HIGH INTEREST RATE SPREADS AND IMPROVING ACCESS TO AND COST OF CREDIT TO SMES

With an estimated 300,000 people entering into the job market each year, and government poised to implement a hiring freeze in the public sector (except in health and

education) under the current three-year Extended Credit Facility, the private sector is faced with the challenge of generating more and better jobs to absorb the large number of new entrants into the job market.

Generally, SMEs have been recognized as the engine for growth and job creation within the economy. Yet, they continue to be excluded from the financial / bank intermediation process due to their difficulty in accessing credit as well as the high cost of credit that they face – these two constraints are among the topmost challenges consistently identified by the Association of Ghana Industries (AGI) as confronting their members. These constraints limit the expansion of SME businesses and with it their potential of driving economic growth and job creation.

Addressing the high interest rate spreads in the banking system can help to improve the efficiency of banking intermediation and, hence, access to and cost of credit to SMEs. Efforts on this front would include lowering the high lending rates and raising the low deposit rates; while increasing the level of competitiveness in the industry.

The most critical factors that contribute to the high lending rates and interest rate spreads are those that relate to the macroeconomic environment. In this regard, the agreed IMF Program that aims to achieve a strong and credible consolidation of the budget deficit would ensure a decline in lending rates decline and improve the cost of credit to SMEs. The Program also aims at clearing the outstanding stock of arrears and preventing the accumulation of new ones which would help to reduce the size of non-performing loans in the banking system and hence the rate of interest charged on loans to businesses – particularly SMEs.

The high interest rate spreads in the industry have also been sustained by very low deposit rates – on demand and savings deposits – offered by the banks to their clients. Ironically, deposit mobilization by the banks in recent times has increased in spite of negative real deposit rates offered to savers. This may be explained by the increased use of lotteries / promotions in the deposit mobilization effort. Additionally, depositors may

be faced with few or no alternatives for their savings, or may be lured by the prospects of securing loans in the future and hence be compelled to keep bank accounts despite the low deposit rates offered by banks.

Such low real deposit rates are exploitative, particularly to those who are also servicing loans as they do not earn any returns on their savings to facilitate the servicing of those loans. As banks, left to themselves, will not raise deposit rates to narrow the interest rate spread, such a move must be imposed on them. This can be done by the Central Bank requiring that banks, at a minimum, compensate depositors for the effect of inflation by offering them non-negative real rates. In the event that the lack of competitiveness in the industry may cause the banks to shift the higher cost of operations to lenders by charging them higher lending rates, the banks can be compensated by the Central Bank either lowering the reserve requirement on deposits or making interest payments on these reserve requirements. In the long-run, however, efforts must be made at improving competitiveness in the market so as to keep the interest rate spread low.

The 2013 Ghana Banking Survey highlighted a number of factors that contribute to the perceived riskiness of SMEs and hence to their exclusion from the bank intermediation process. The three most critical factors included: "unstructured governance and management systems", "opacity of financial circumstances", and "high default rates."

The above characteristics of the SMEs make them unattractive to the banks, particularly as many of the banks lack the capacity to deal with the operating risk inherent in SME business. Faced with the difficulty in accessing credit from the banking sector, many SMEs are likely to turn towards the non-bank financial sector as an alternative source of credit. These non-bank financial institutions – Rural and Community Banks, Savings and Loans, Microfinance companies, susus, and money lenders – may be better suited to deal with the SMEs, though they provide credit at very high interest rates. Indeed, Rural and Community Banks are fast becoming a key channel for financial inclusion while microfinance and susus are increasingly being used by the commercial banks as outlets for the extension of credit.

While macroeconomic factors remain critical in explaining the high interest rate spreads in the Ghanaian banking sector, a micro-level analysis of the problem would help to provide a deeper understanding of the cost and revenue structures of the banks, the composition of their deposit portfolios, the nature of competition in the industry, and the decision making processes with regard to the extension of credit to the private sector – particularly to SMEs. This would involve a survey of the banking sector, as well as detailed analysis of the financial statements of the banks – efforts which will constitute future research by CEPA in this area.

TECHNICAL ANNEX:

An Assessment of Empirical Studies on the Determinants of Interest Rate Spread in Ghana

Following a banking crisis in the 1980s, when most public sector banks were declared insolvent with about 41 percent non-performing loans attributable to the private sector (Kapur et al., 1991, pp. 60–61), Ghana undertook a substantial banking sector reforms in the late 1980s and early 2000s, supported by the World Bank[2]. Some of the expected benefits from the process, besides banking and financial sector stability, include improvement in interest rate policies. However, the interest rate spread (IRS) in Ghana's banking sector has remained too wide despite the continuing efforts at financial liberalization.

The IRS (like the fiscal balance) is an important indicator because it is embedded with information on the efficiency of financial intermediation, bank profitability, the impact of monetary policy, and the general macroeconomic policy environment in which banks operate. Wide IRS is generally regarded as a considerable impediment to the expansion and development of financial intermediation in the country as its lower boundary could discourage potential savers with low returns on deposits, while its upper boundary could place limits for financing potential borrowers, thereby reducing feasible investment opportunities and the prospects for growth of the economy.

It is thus not surprising that the magnitude of the IRS has become a debatable issue in banking and financial circles and the topic for much research (see bibliography). While on the one hand, investors as well as researchers are claiming that the IRS is wide and not acceptable (Sarpong, et al, 2013); on the other hand, some bankers are claiming that the

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[2] Specifically, reforms included the passing of the Banking Law, 1989 (P.N.D.C.L. 225), Bank of Ghana Act, 2002,Act 612, the Banking Act, 2004a,b (Act 673), and the Banking Amendment Act 2007 (Act 783). The Banking Law (P.N.D.C.L225) was revised in 1989 under the Financial Sector Adjustment Programme (FINSAP) in 1988. The supervisory powers of the Bank of Ghana were enhanced with the revision of the Bank of Ghana Law (P.N.D.C.L 291) in 1992.

current level of IRS is reasonable considering the high variance in the profit margin of the banks[3]. They note that lending rates reflect other factors, such as the growth of non-performing loans, estimated to be more than 15 percent in recent years. The bankers suggest that interest rate spread will contract as risk assessment improves and better analysis of the credit market become available.

I. Outline of the Problem: Why the concern with IRS?

There are two main reasons why wide interest rate spreads are of concern: **First**, a wide interest rate spread is generally viewed as indicative of banking sector inefficiency or a reflection of the level of financial development (Folawewol and Tennant 2008). From the perspective of a financial institution (such as banks), the net interest rate spread is a key determinant of its profitability (or lack thereof). It is generally defined as the difference between the average yield a financial institution receives from loans and other interest-accruing activities and the average rate it pays on deposits and borrowings[4]. As a key determinant of the profit margin of the financial institution, the greater the spread, the more profitable the financial institution is likely to be; the lower the spread, the less profitable the institution is likely to be. While the Central Bank policy directives play a large role in determining the rate at which an institution lends its funds, open market activities ultimately shape the rate spread. The differences reflected in an interest rate spread can be based on fluctuations in currencies, perceptions of risk and inflation expectations, among other factors.

Second, beyond efficiency, the spread between lending and deposit rates serves as key indicator of financial performance and competition within the sector. Higher spreads and

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[3] Mettle (2013) notes that banks had justified the wide interest rate spread on the basis of some economic variables that affect them. See also Mensah, et al (2011).

[4] There is no single interest rate spread. Rather, many different spreads are calculated for a variety of purposes. The International Monetary Fund, International Financial Statistics and data files, defines IRS as: the interest rate charged by banks on loans to private sector customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits. The terms and conditions attached to these rates differ by country, thereby limiting their comparability.

margins are often interpreted to signal the lack of competition in the banking sector[5]. If this spread is large, it works as an impediment to the expansion and development of financial intermediation. This is because it discourages potential savers due to low returns on deposits and thus limits financing for potential borrowers. This has the economy-wide effect of reducing feasible investment opportunities and thus limiting future growth potential. In particular, an expected benefit of recent liberalization and deepening of the financial sector in Ghana is the narrowing of the interest rate spreads, predicated on the understanding that liberalization enhances competition and efficiency. As such, an analysis of bank interest rate spreads is therefore central to the understanding of the financial intermediation process and the macroeconomic environment in which banks operate. It is consequently suggested that differences in interest margins reflect differences in bank characteristics, macroeconomic conditions, existing financial structure and taxation, regulation, and other institutional factors (Demirguc-Kunt and Huizinga, 1999).

Given this backdrop, it is of interest to know: First, is the IRS really too high in Ghana compared to other comparator and neighboring countries? Second, if the IRS is considered too high, what are the reasons for it being problematic? The rest of this paper is devoted to exploring these two queries.

II. Comparator Analysis of Interest Rate Spreads

Like the rest of the countries in Sub-Saharan Africa (SSA), the financial sector in Ghana was liberalized in the early 1990s to allow for market determination of interest rates. Table 1 indicates that whereas the interest rate spread for Ghana is closely comparable to those of comparator countries in SSA, it remains well above those of high income countries, which is around 3-4 percent[6]. The level of IRS in Ghana places the financial

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[5] As noted by Buchs and Mathiesen (2005), a competitive banking system is required to ensure that banks are effective forces for financial intermediation to channel savings into investment, fostering higher economic growth.

[6] It is also above comparator middle income countries, such as Zambia.

sector in the country with those of low income countries and raises concerns about the state of development of the banking sector. It has been suggested that institutional factors such as the efficiency of the legal system, contract enforcement, and perceived levels of corruption, which are all critical elements of the basic infrastructure needed to support efficient banking, could play a role in sustaining Ghana's high IRS. Since 2010, however, it may be noted that there has been a general decline in the spread, thus making it important to know how the high level of IRS is impacting on financial intermediation within the economy as well as for the banking sector.

Figure 1 shows that following a general upward movements during 2008-2011, there was a gradual decline in all the different types of interest rates during the period under review. However, from mid 2010, the movement in the demand deposit rate (and to some extent, the savings deposit rate) has been sticky in comparison to other interest rates. This is the case even for the period that witnessed monetary easing, with the prime rate having been reduced from 18.0 percent in January 2010 to 12.5 percent in January 2012, although the prime rate begun to rise subsequently under monetary policy tightening. Arguably, the deposit rates are relatively more flexible downwards but sticky upwards in response to changes in policy conditions. In particular, the demand deposit rate has remained almost flat with an average of 3.5 percent from 2009 to 2014. The overall deposit rate has more or less remained stable except for temporary declines and upward movements following monetary policy changes. In general, the rigidity in the deposit rates remains a subject for further analysis.

Table 1: Interest Rate Spread in Selected Countries (in Percentage) a/

Country	2010	2011	2012	2013
GHANA b/	17.0	18.1	15.5	14.2
South Saharan African Countries				
Angola	9.8	12.4	13.1	12.7
DRC	39.7	30.4	20.7	14.7
Kenya	9.8	9.4	8.2	8.7
Malawi	21.0	19.6	21.3	27.6
Nigeria	11.1	10.3	8.4	8.8
Middle Income Countries				
Argentina	1.4	3.4	2.0	2.3

|				
Botswana	5.9	5.9	7.4	7.1
Barbados	6.0	6.0	6.1	6.2
Malaysia	6.3	6.0	6.8	7.3
South Africa	3.4	3.3	3.3	2.3
Zambia	13.5	11.8	5.1	3.0
High Income Countries				
Australia	3.1	3.4	3.1	2.9
Canada	2.4	2.5	2.5	2.5
China	3.1	3.1	3.0	3.0
Japan	1.1	1.0	0.9	0.8
Russia	4.8	4.0	3.6	3.9
Switzerland	2.7	2.7	2.7	2.7

a/ lending rate minus deposit rate, b/ Calculated as the difference between the average lending rate and the 3-months time deposit rate, from BOG sources.

Source: World Bank [http://data.worldbank.org/indicator/FR.INR.LNDP]

An examination of profitability of banks by size shows that profitability is higher for larger banks (referred to as tier 1 banks) than for medium and small banks (EcoBank, 2014)[7]. The study noted that sustained level of profitability was driven by several factors including a high interest rate environment that resulted in high interest rate spread, improved operating efficiency, especially in the last four years, improved asset quality in the midst of loan book expansion, and a favorable funding structure that relied heavily on deposits and equity to fund balance sheet growth. On average, small banks have lower spread possibly due to the fact that small and low-capitalized banks find it relatively difficult to raise funds and have to increase their deposit rates to attract funds and compensate for the perception that they are more risky relative to large, more liquid, well capitalized banks that are perceived to be 'too-big-to-fail'.

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[7] The Ecobank study categorized Ghanaian banks into 4 tiers to determine if the size of a bank influences its level of profitability. It discovered that tier 1 banks are the most profitable in Ghana as they are positioned to exploit attractive banking services and participate in loan syndications in key sectors of the Ghanaian economy where small banks lack competitive advantage.

Figure 1: Nominal Interest Rates, 2006-2014
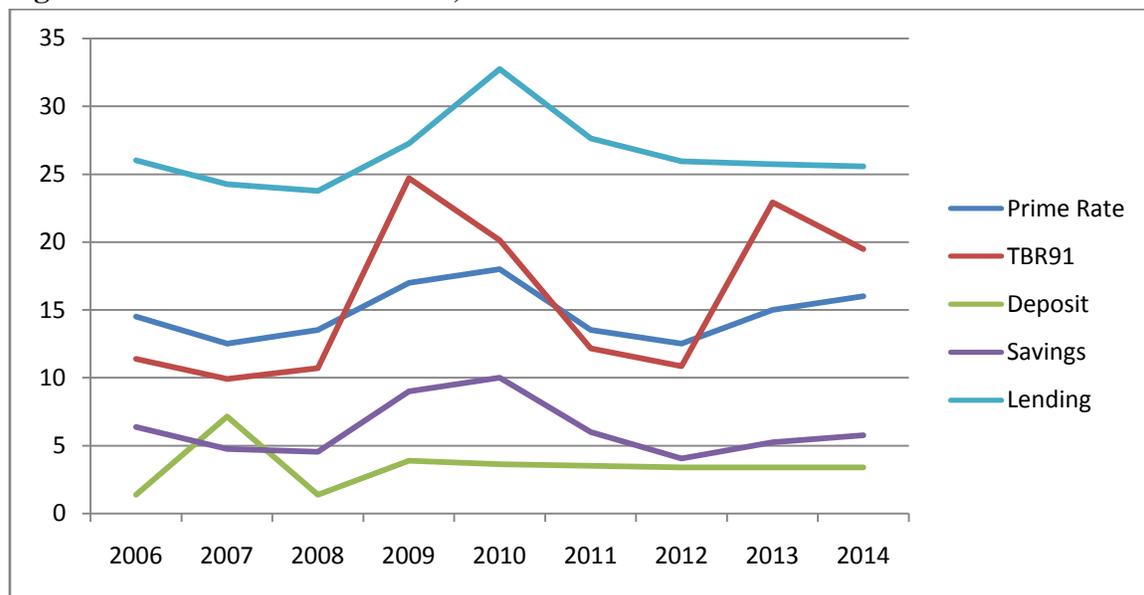
Source: BOG

III. Factors Accounting for High IRS in Ghana

Excursion into History: Political independence in 1957 and the establishment of the central bank (Bank of Ghana) ushered in a financial sector characterized by regulation rather than competition. The early history of post-independent financial sector development in the country involved the government (and the BOG) defining the structure and range of financial products and services a bank can offer, the types of assets and liabilities it can hold and issue, and the type of banking institutions licensed to serve a diverse clientele base[8]. Thus, until the Economic Recovery Credit (ERC) program, beginning 1983, policy in the banking (and financial) sector was rigid, while the sector was dominated by government and not market forces. Financial sector reforms began with the partial liberalization of interest rates in 1987 and removal of sector credit ceilings in the following year as well as the liberalization of access to foreign exchange and the licensing of foreign exchange bureaux. In 1989, with World Bank support, a formal financial sector adjustment credit (FSAC) accompanied the financial reforms.

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[8] See Chapter 11 of Baah-Nuakoh (1997, pp 294-301) for a detailed survey of monetary events and policies during 1957 and 1981.

The program addressed the institutional deficiencies of the financial system by restructuring distressed banks, reforming prudential legislation and the supervisory systems, permitting new entry into financial markets by public and private sector financial institutions, and initiated the development of money and capital markets.

Specific to the issue of IRS, minimum savings deposit rates were removed, as were all the sector credit guidelines with the exception of the stipulation that at least 20 percent of each banks' loan portfolio be allocated to agriculture, which was also removed in 1990. Controls on bank charges and fees were also abolished in 1990. The bank specific credit ceilings, which had been the main instrument of monetary control employed during the ERP, were removed in 1992, and replaced with an indirect market based system of monetary control involving the weekly auctioning of Treasury bills and other government and BOG securities, backed up with statutory cash reserve and liquid asset requirements. Hence since the early 1990s banks have been free to price deposits and loans and to allocate loans according to market criteria, although the very high reserve ratios imposed by the BOG were a major constraint on the volume of credit they were able to extend until July 2005 where the secondary reserve was reduced from 35 to 15 percent.

Nonetheless, interest rate liberalization has not had a marked impact on the level of real deposit rates. There have been substantial variations in the level of real interest rates since the late 1980s, reflecting fluctuations in inflation rates and the considerable contemporaneous differences between the nominal rates offered on different classes of bank deposits since interest rates were liberalized. High rates of inflation have impeded the attainment of positive real deposit rates (see Figure 2). But when inflation has been higher, as in 1987-91 and 1993-95 and 1999 and 2000, the nominal interest rates paid on savings deposits and the lowest rates paid on fixed deposits have generally been well below the prevailing inflation rates. Consequently bank deposits have not offered very attractive returns to most savers. On the other hand, while credit allocation most likely has improved (less likely to unviable activities), its efficiency remains low. The main constraint to an increase in the efficiency of credit allocation by the banks has been macroeconomic instability particularly in the 1999-2000, and lately 2013-2014. Large

fiscal deficits, financed partly through domestic borrowing have led to relatively high and variable rates of inflation and high nominal interest rates.

Although real lending rates have not always been very high (and sometimes been negative), the combination of nominal lending rates in excess of 30 percent and high but unpredictable inflation entails considerable risk for borrowers. Consequently loan demand has been depressed while the banks have been reluctant to expand their lending, instead investing in government and BOG securities. Government securities have offered the banks returns which have often been comparable to prevailing lending rates, without the risk involved in lending to the private sector. Bank lending has also been constrained by the high reserve ratios imposed by the BOG in an attempt to restrain monetary growth. Bank lending to the private sector has thus remained at very low levels, amounting to only 5.3 percent of GDP in 2013 (BOG, 2013). The private sector has to a large extent been crowded out of credit markets by the public sector's borrowing requirement. This is the phenomenon commonly referred to as fiscal dominance and has rendered monetary policy ineffective (CEPA, 2014 forthcoming).

Box 1, taken from Bawumia, et al (2005), provides a summary explanation from the generalized literature why the IRS has stayed constant in Ghana despite efforts at financial sector liberalization.

Box 1: Why the spread has remained high? [Bawumia, et al 2005]

- Lack of changes in the structure and institutional behavior of the banking system shown by concentration, the conditions of free entry and competitive pricing.
- High reserve requirements, which act as implicit financial tax. While reserve requirements may be designed with the aim of protecting depositors, the availability of a pool of resources allows for financing high fiscal deficits through the implicit financial tax, creating an environment that can promote high inflation and persistent high intermediation margins.
- Adverse selection and adverse incentive (moral hazard) effects, which could result in mounting non-performing loans and provision for doubtful debts.
- High operational costs have also been found to be a source of persistent and wide intermediation spreads in developing countries. Operational costs reflect

> variations in cost of capital, employment, and wage levels. Inefficiency in bank operations may also be shifted to bank customers through wide margins.
> - The cost of capital that banks hold to cushion themselves against risks is relatively more expensive than debt because of taxation and may lead to high spreads.
> - Macroeconomic instability and the policy environment may also affect the pricing behavior of commercial banks.

Stylized Explanation: The historical evolution of banking (financial) sector environment in Ghana could be stylized into three segments of determinants of IRS, namely bank specific factors, industry factors and macroeconomic factors[9]. Bank Specific factors are those that affect an individual bank such as bank size, liquidity ratio of a bank, operating costs, non-performing loans, return on asset, structure of the balance sheet and non-interest income. The market structure of banking industry factors concern the nature of competition, internal organization, management, regulatory framework and their contributions in terms of creating an incentive for resource mobilization by rewarding investors and encouraging competition for deposit. The macroeconomic factors are the overall policy environment, the role of monetary and nature of fiscal policy.

The banking sector in Ghana is made up of 27 deposit money banks (as at the close of 2013), consisting of commercial, development and merchant banks[10]. The industry is highly concentrated, with the top five largest banks controlling more than fifty percent of the total market share in terms of total assets. Foreign-owned banks (15) account for more than fifty percent of the market share in terms of total assets, which is relatively moderate compared to other countries in the region. Over the recent past, the branch networks of the banks have expanded across board from 374 branches in 2005 to 892 branches at the end of 2013; over the same period banking sector assets more than quadrupled from GHS3.8 billion to GHS 18.6 billion.

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[9] The segmentation derives from the framework adopted by Aboagye et al (2008), Garr et al (2013) and Sarpong et al (2013). It is further important to assume that the banks are profit maximizing and could operate in either a competitive environment or one with substantial market concentration.

[10] There are also 57 NBFIs, 140 Rural Community Banks, and 337 MFIs (BOG, 2013).

Market concentration determines the degree of competition each bank faces in the market. Theoretically, competitive pressures lead to competitive pricing, thus leading to higher efficiency of intermediation process and lower spreads. On the other hand, higher market concentration implies more market power and less competition and hence is likely to be associated with higher interest rate spreads. Bawumia (2005, p5) notes that there are some anecdotal evidence of leadership-followership tendencies among the banks in Ghana and therefore there is no significant evidence of price wars among them.

The high market concentration in the banking sector in Ghana is indicative of the lack of competition which could foster market inefficiencies manifested in the wide interest rate spread. Most banking analysts agree that interest rate spread could serve as an adequate measure of the efficiency of bank intermediation. Wide interest rate spreads make it expensive to move monies from those who have surpluses to those who need monies to invest. This is because neither the borrower nor the depositor gains from the wide spread, but rather the depositor obtains low returns whiles the borrower is subjected to high borrowing cost. This situation can lead to generally low banking transactions, which limit the gains from economies of scale (reduction in banking costs) and causes significant decrease in borrowing for investment and consumer spending (reduced economic activity).

Market concentration can also result in oligopolistic market tendencies such as collusion. A concentration that makes banks to behave in an oligopolistic manner will lead to higher lending rates and low deposit rates, all things being equal. On the other hand, if the market concentration derived from more efficient banks replacing less efficient banks (presumably because more efficient banks have lower cost), this may lead to lower lending rates and/or higher deposit rates and hence, lower spreads.

Within this environment, the small and medium scale enterprises (SME) and agriculture, considered the largest employers in the Ghanaian context (GSS, 2014), are most impacted. The World Bank's governance and doing business indicators (World Bank,

2013) has identified that the task of access to affordable credit is an important constraint on growth. High interest rates associated with wide IRS discourage farmers and other small scale entrepreneurs from borrowing, thereby reducing their prospects for expansion[11]. In this respect, wide interest spreads can negatively impact on the growth rate of the economy, as private businesses limit their borrowing for business expansion.

But the high IRS in Ghana is not independent of macroeconomic variables like inflation, government (and central bank) policy directives, and changes in the conditions of the financial sector. Inflationary pressures over the past decade have been largely responsible for the high interest rates (Figure 2). In effect, a bank may be reluctant to lend money for any period of time if the purchasing power of that money will be less when it is repaid; it will therefore demand an "inflationary premium". Consequently, inflation pushes interest rates higher; deflation causes rates to decline. Specifically, it is observed that in a competitive banking sector, inflation has limited effect on IRS because the spread tends to equal the marginal cost of intermediation as the number of banks increases. On the other hand, under situations of low competition, an increase in anticipated inflation leads to an increase in IRS (Cukierman and Hercowitz, 1990). Dealing with the persistent inflation is thus the first line of defense in resolving the determinants of high IRS.

Figure 2: Inflation, Nominal and Real deposit Rates (in Percentage)
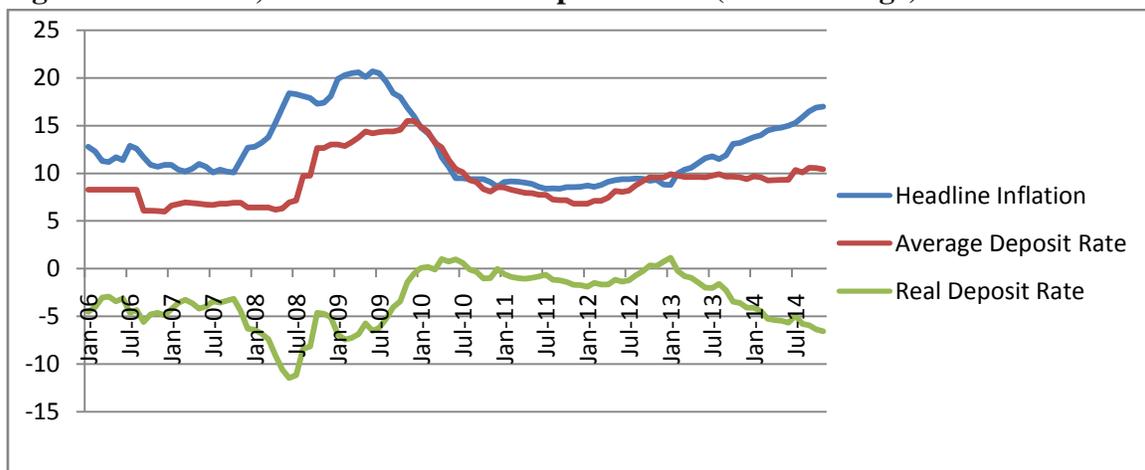
Source: BOG (up to Nov. 2014)

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[11] This is because these small scale enterprises and farmers operate with low profit margins such that a significant increase in the cost of borrowing tends to make them non-viable.

Similarly, at the lower band of the IRS, the deposit rates have not responded to the improved political and economic outlook in Ghana. In general, political instability tends to increase the risk of doing business and as such banks will tend to pay lower returns on deposits as borrowing would tend to be low in high risk environments. By implication, political stability will tend to reduce risk and support buoyant economic activity, permitting banks to actively mobilize savings. Increased savings mobilization through completion for deposits should help improved deposit rates. Despite improvements in the political and economic trends, the banks in Ghana are yet to show significant upward adjustment in the deposit rates to conform to such improvements. Inflation has, on the other hand, eroded significantly the returns on deposits (Figure 2). Sarpong, et al (2013, p.3537) notes that many commercial banks have been observed to exceed the mandatory reserve requirements, by pointing to the lack of viable lending opportunities.

Beyond industry and market characteristics, some analysts point to the failure of monetary policy as the dominant factor explaining the persistence of high IRS. The Central Bank attributes the failure of monetary policy to two main factors: the large amount of cash held outside the banking system resulting from the excessive cash transaction; and the huge public sector borrowing which are insensitive to interest rates. Of the two, the latter (fiscal dominance in recent years) has negated the relevance of the central bank. Government's heavy reliance on domestic banking sectors for deficit financing increases competition for funds and causes interest rates to rise. The Government also borrows directly from the banks and also through the issue of Government Securities, which is largely by the Treasury bill. Government has relatively an unlimited capacity to take loans at relatively higher interest rates than the private sector. In addition, government borrowings are usually treated as risk-free, which implies that private individuals and businesses will have to be prepared to pay higher rates to attract funds away from government. Hence, anytime there is an increase in domestic borrowing activity by government, it is almost always accompanied by an increase in lending rates and as a consequence a rise in interest rate spread.

The crowding out effect by Government also has external gap implications. Government expenditures have substantial import content in two directions: either directly or indirectly through payments made to the private sector. Expansionary fiscal policy could thus impact on the balance of payments through the multiplier effect.

Empirical Findings: The empirical verification of some of the stylized hypotheses on IRS is mixed, in part because of the absence of a unified theory of the determinants of IRS. As such, the empirical analysis has tended to be "exploratory and explanatory" backed by complex use of econometric techniques. These studies are supplemented with others that concentrated on bank performance (Epstein, et al 2006; Aboagye-Debra, 2007). Table 2 outlines the findings of selected research undertaken for Ghana since 2005. Data used for these studies ranged from 1990-2012, with multiple regressions being the preferred statistical tool employed.

Table 2: Selected Empirical Studies on IRS in Ghana

Authors	Period	Methodology	Key Findings
Churchill, et al (2014)	Annual data, 2004-2012	Multiple Regressions & Pearson Correlation Analysis. Dependent variable: Lending interest Rate (LIR). Independent variables: GDP, inflation, exchange rate, policy rate, treasury rate, liquidity, overhead cost, loan loss provisioning and profit margin.	Except for GDP and T-Bill rates, which are negatively related, all specified variables are positively related to LIR. No policy conclusion provided.
Sheriff, et al (2014)	Monthly data, 1999-2010	Autoregressive distributed lag (ARDL) co-integration and Vector Error Correction analysis. Dependent variable: Interest Rate Spread. Independent variables: Inflation, T-Bill rate, public sector borrowing to total loan advanced by banks, Total Deposits	Government borrowing, interest and inflation rate should be kept low while pursuing policies that maximize savings.
Garr, et al (2013)	Time Series, 1990-2010	Panel Regression. Dependent variable: IRS. Independent variable: bank specific,	(i) Ownership, Management, GDPPC and government borrowing

		industry and macroeconomic variables.	significantly influence Interest Rate Spread; (ii) government borrowing has negative relationship while local ownership, management, GDPPC and Government Security in the model have positive relationship with IRS.
Mettle (2013)	Annual Data, 2004-2012	Multiple Regression & Pearson Correlation Analysis. Dependent variable: IRS. Independent variable: GDP, Exchange Rate, Prime Rate, Treasury Bill Rate, Liquidity, Overhead Costs, Loan Loss Provisioning and Profit Margin.	(i) Except for GDP and T-Bill rates, which are negatively related, all specified variables are positively related to LIR; (ii) government must curb its spending and borrowing to reduce the pressure on interest rates and crowding-out of the private sector.
Sarpong, et. al (2013)	Annual panel data for 21 commercial banks, 2005 – 2009	Panel EGLS with cross-section weights. Dependent variable: IRS. Independent variable: bank specific (commission, fees, reserve requirement, market share, NPL, operating cost), industry (concentration) and macroeconomic variables (GDP, inflation, Treasury bill rate and exchange rate).	(i) Operating cost, market share and previous year's non-performing loans are sensitive to the definition of IRS; (ii) banks should work on improving on their efficiency so that they reduce their fees and operation cost to reduce interest rate spread.
Aboagye, et al (2008)	Annual and cross-section data, 1997-2004	Multiple Regression Analysis. Dependent variable: Net Interest Margin. Independent variable: bank-specific, banking industry specific and macroeconomic factors.	(i) market concentration, bank size, staff costs, administrative costs, extent to which a bank is risk averse and inflation causes IRS; (ii) Excess reserves of banks, central bank lending rate and management efficiency decreases the net interest margin of banks
Bawumia, et al (2005)	Quarterly Panel Data, 2000-2004, for 16	Multiple Regression Analysis. Dependent variable: IRS. Independent variable: bank and	High market shares (concentration), high operating cost (mainly due to labor costs) as well as

	Commercial Banks.	market characteristics, operational cost, the regulatory environment, and macroeconomic characteristics.	the banks' determination to maintain high profit margins contributes to the wide spread.

Source: Author's compilation.

All the studies under review (Table 2) used the IRS as the dependent variable, which could have implications for interpreting their results as Sarpong, et al (2013) observed that the empirical results are sensitive to the definition (and most likely, the measurement) of IRS. In addition, all the studies reviewed employed ex-ante IRS, which involved the difference between the contractual rates charged on loans and the rates paid on deposits. Preferably, the ex-post IRS, which applies actual interest revenues and expenses, should have been used[12]. As noted by Demirguc-kunt, et al (1999 p380) the ex-post spread is a more useful measure because it controls for the fact that banks with high-yield, risky credits are likely to face more defaults.

The independent variables used in these studies reflected the predominant approach to define three main vectors of explanatory variable as bank-specific, industry-specific and macroeconomic factors (used for example by Garr, et al; Sarpong, et al; and Aboagye, et al). But not all studies employed this classification, and some concentrated on one or two of the categories (for example, Sheriff, et al; Mettle; and Bawumia, et al). The differences in model specification could be accounted for by not only the lack of unified theory and the need to use "exploration and explanation" techniques, but also data deficiency.

Furthermore, it appears that, in at least one case, the authors seem to have estimated an identity (Churchill, et al, 2014/Mettle (2013). From the bank's income statement, let us define bank profitability as profits before tax (P) divided by total assets (A). This satisfies the following accounting identity:

$$P/A = IRS + NIY/A - O/A - LLP/A \qquad (1)$$

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[12] The ex-post IRS differs from the ex-ante IRS by the amount of loan defaults (Demirgut-kunt et al (1999).

where, IRS is net interest margin, NIY is noninterest income, O is overhead costs and LLP is loan loss provision[13].

By rearranging the equation, one gets:

$$IRS = P/A - NIY/A + O/A + LLP/A \tag{2}$$

Therefore any regression using net profit, noninterest income, overhead costs and loan loss provision as independent variables on IRS would in effect be estimating an identity. An appropriate tool under this circumstance could be principal component analysis instead of regression analysis.

Because of the wide range of independent variables defined for the studies under review, it is not possible to provide an analysis of the results of individual variables as comparability may be misleading. Instead, we outline some key findings (Table 2):

- In general, most of the studies found that IRS in Ghana is significantly influenced by bank- specific and macroeconomic variables. Specifically, in terms of bank-specific factors, bank ownership and management inefficiency have positive relationship with IRS (Garr, et al). That is, locally owned banks have wider spread than their foreign counterparts; in part probably because of differences in management efficiency. Management inefficiency means higher expenses and for inefficient banks to cover the high expenditure, lending rates must be increased while borrowing rates are kept low resulting in wide IRS.

- In term of macroeconomic variables, per capita Gross Domestic Product and Government Securities (e.g. Treasury-bills) have positive influence[14], while

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[13] We could also have measured profitability as return on equity, as opposed to the return on assets (Demirgut-kunt, et al, 1999, discuss the advantages for using assets instead of equity in the case of low income countries). In addition, we could net out reserve requirement if applicable.

[14] Garr el al (2013, p 98)notes that the positive relationship between IRS and Government Securities points to the fact that investment in Treasury bills creates shortage for loanable funds and therefore bank managers can only make more loans by charging more interest on loans that would compensate for the high cost of borrowed funds.

government borrowing influences IRS significantly but has a negative effect. Sarpong et al, on the other hand, did not find the Treasury-bill rate significant. Aboagye, et al note that excess reserves of banks, central bank lending rate and management efficiency decrease the net interest margin of banks.

- Increases in the GDP and the Treasury-bill rate would thus lead to the narrowing of the interest rate spread (Mettle). However, growth in per capita GDP could lead to cancelling effect since customers demand more loans as their economic conditions improve while depositors make more money available to the banks and therefore banks can afford to increase interest charged on loans and reduce interest paid on deposits. The result may depend on the respective demand and supply elasticities.

- Industry-specific factors, such as monopolistic/oligopolistic characteristics of banks have mixed results. Some studies found that high industry concentration (defined in terms of market shares of the largest banks), high operating cost (mainly due to labor costs) as well as the determination by the banks to realize their target profit margins contributed to the wide spread (Bawumia, et al; Aboagye, et al). But other studies found no relationship between market concentration and IRS. On the contrary, some found local banks, which are smaller to have higher spreads than their foreign counterparts, which are larger (Garr, et al; Ecobank, 2014). The analysis here was sensitive to the measure of market concentration.

- The behavior of banks suggests leadership-followership tendencies in the area of pricing as evidenced by much wider interest rate spread, attributed to high transaction cost (Bawumia, et al). For example, Aboagye-Debra (2007) notes that the Ghana Commercial Bank which was the biggest bank in Ghana in 2005 had a cost/income ratio of 78 percent compared to the industry cost/income ratio of 60 percent, accounting for the inflexibility in the spread.

Overall, the results of the various studies reviewed are mixed. Based on them, Sheriff, et al suggest that government borrowing; interest and inflation rates should be kept low while pursuing policies that support the maximization of savings. Mettle also adds that

government must curb its spending and borrowing to reduce the pressure on interest rates and the crowding-out of the private sector. Sarpong et al, on the other hand, concludes that banks should work on improving on their efficiency so that they reduce their fees and operation cost, thereby helping to reduce interest rate spread. From these recommendations, two critical themes appear: the need to deal with fiscal dominance, and to curb high bank costs.

IV. Conclusion

This review sets out to examine the empirical findings on two main issues: is the IRS really too high in Ghana compared to other comparator and neighboring countries, and if the IRS is considered too high, what are the reasons for it being problematic? On the first issue, the consensus derived from available data and research results suggests that the IRS in Ghana is comparable to those of low income countries in SSA, which is substantially higher than those of middle-income and high income countries (Table 1). The IRS in Ghana has been high despite efforts since the 1980s at financial market liberalization and market deepening.

On the second issue, the review of available empirical investigation on the determinants of IRS points to internal challenges in the formulation of the research question. In the first place, while the empirical models are supposedly specified within the framework of a bank as a profit maximizing firm with bank level variables to deal with specific aspects of bank behavior, no unified model was obvious from the choice of variables[15]. As such, the empirical results tended to be data sensitive and depended on the period selected for analysis. They also tended to be sensitive to the definition of the depended variable. For example, Sarpong, et al (2013) observed that independent variables, such as operating cost, market share and previous year's non-performing loans were sensitive to the definition of interest rate spreads. Consequently, the resort to "exploration and explanation" techniques yielded mixed results that are largely not comparable.

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[15] Only two of the research papers explicitly stated that their specification was based on a profit maximizing bank. The effect of market structure in determining the relationship between IRS and selected independent variables was mooted.

The conclusions from the review suggest that the focus of the research questions (which presumed that a lower IRS signaled improved efficiency) may have been too broad in certain cases. Although the IRS could be interpreted as an indicator of bank efficiency, this does not mean that its reduction always signals improved efficiency (Demurguc-Kunt, et al, 1999, p381)[16]. Furthermore, because the two critical recommendations derived from the reviewed empirical research pertain to the need to deal with fiscal dominance and to curb high bank costs, they point to the importance for exploring two separate policy queries, namely: what is the role of fiscal dominance on central bank management of financial market interest rate policy; and what are the determinants of high bank costs? The former is partly answered by the analysis on IRS, but the latter requires a completely different research approach. Analysis on the economies of scale of banking may be necessary to bring out while the large banks (first tier banks as designated by Ecobank, 2014) tend to have better operating performance than the small bank. It will also answer the perplexing finding that interest rate spreads are higher in large banks than the small banks (Ecobank, 2014) and that locally-owned banks have wider spread than their foreign-owned counterparts (Garr, et al, 2013). Finally, the issue of the upward stickiness of deposit rates would need to be explored if the low savings rate in the country is deemed problematic. The IRS regressions tell us how the spread determinants affect the combined welfare of depositors and lenders, but we are unable separate the impact on depositors alone.

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[16] Demurguc-Kunt, et al further mote that a reduction in the net interest margin can, for example, reflect a reduction in bank taxation or, alternatively, a higher default rate. The former may reflect the improved functioning of the banking system, while for the latter the opposite may be true.

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