



What factors drive interest rate spread of commercial banks? Empirical evidence from Kenya^{☆,☆☆}

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Abstract

The paper empirically investigates the determinants of interest rate spread in Kenya's banking sector based on panel data analysis. The findings show that bank-specific factors play a significant role in the determination of interest rate spreads. These include bank size, credit risk as measured by non-performing loans to total loans ratio, return on average assets and operating costs, all of which positively influence interest rate spreads. On the other hand, higher bank liquidity ratio has a negative effect on the spreads. On average, big banks have higher spreads compared to small banks. The impact of macroeconomic factors such as real economic growth is insignificant. The effect of the monetary policy rate is positive but not highly significant. The results largely reflect the structure of the banking industry, in which a few big banks control a significant share of the market.

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1. Introduction

One of the expected benefits of financial liberalization and deepening of the financial sector is the narrowing of the interest rate spreads, i.e. the difference between the interest rate charged to borrowers and the rate paid to depositors. This is predicated

on the understanding that liberalization enhances competition and efficiency in the financial sector. Thus, wide deposit-lending interest rate margin could be indicative of banking sector inefficiency or a reflection of the level of financial development (Folawewol and Tennant, 2008). Basically, embedded in the spread is the information to do with the efficiency of the financial intermediation, profitability and monetary policy impact, among other factors. Most countries in Sub Saharan Africa (SSA) are still confronted with high levels of interest rates, despite having undertaken structural adjustment reforms that led to the liberalization of interest rates in several countries in the region. Two decades after the financial sector in Kenya was liberalized in the early 1990s to allow market-determined interest rates, concerns about high interest rate spreads have continued to persist and attracted a lot of debate in both public and policy forums.

The role of financial sector in facilitating economic growth and development is well acknowledged. In Kenya, the banking sector plays a dominant role in the financial sector, particularly with respect to mobilization of savings and provision of credit. An analysis of the high interest rate spreads in the sector is not only useful in its own right, but is also central to the understanding of the financial intermediation process and the macroeconomic environment in which the banks operate. That notwithstanding, there has been little empirical research

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on this issue, particularly with respect to the investigation of industry-level or bank-level determinants of interest rate spreads. This paper examines and empirically investigates factors that drive the interest rate spread in Kenya's banking sector. Both bank-specific and macroeconomic factors are considered. The empirical analysis is based on panel data of commercial banks for the period 2002–2011.

The results show that bank-specific factors play a relatively more fundamental role in the determination of the interest rate spread in the banking sector. These include bank size, liquidity risk, credit risk and return on average assets. In general, the research findings such as the relatively high correlation between bank size and interest rate spread are linked to the structure of the banking sector, in which the market is dominated with a few big banks.

The rest of the paper is organized as follows: Section 2 provides a survey of the literature on the determination of interest spreads while the empirical methodology and description of the variables used in the empirical analysis is outlined in Section 3. Section 4 provides an exploratory analysis followed by empirical analysis and discussion of the results in Section 5. Section 6 concludes.

2. A survey of the literature

2.1. Theoretical literature

The literature on spreads consists of studies on the determination of interest margins as well as interest rate spreads. The most influential theoretical model of determination of interest margins is the bank dealership model by [Ho and Saunders \(1981\)](#), in which the size of bank interest margins is explained on the basis of the uncertainties associated with deposit and loan markets, hedging behaviour and expected utility maximization. Banks are assumed to be risk-averse dealers in their role as financial intermediaries. The model is premised on the fact that banks receive deposits in random intervals while the requests for loans come in a stochastic manner and these requests have to be satisfied. This randomness, and therefore the uncertainty brought about by the manner in which deposits come and the manner by which customers make loan requests implies that banks face an inventory risk, which has to be compensated through a spread between loan and deposit rates—this is the pure interest spread. The interest margin arising from [Ho–Saunders model](#) is computed on the basis of banks that offer similar or homogeneous loans and deposits, and differences in interest margins across the banks is on account of average transaction costs, changes in interest rates, risk taking behaviour of bank managers and the extent of competition within the bank's market (see [Allen, 1988](#)).

Subsequent studies have modified some of the assumptions in the [Ho and Saunders \(1981\)](#) model, for instance, [McShane and Sharpe \(1984\)](#) assume that banks face uncertainty in the short-term money market interest rates, as opposed to deposit and loan interest rates. In undertaking intermediation between depositors and borrowers, they assume that banks maximize expected utility and risk aversion in loan and deposit markets. They define

interest margins as fees for financial intermediation given the randomness of loan requests and receipt of deposits, and the uncertainty in short term interest rates. However, the study notes the narrowness of this definition of interest rate margin and embeds their model in a more general model of profit maximization. The a priori expectations are that there is a positive relationship between bank interest margins and market power, the degree of bank risk aversion, interest rate uncertainty and average transaction size.

In a separate study, [Allen \(1988\)](#) extends [Ho–Saunders model \(1981\)](#) to treat banks as passive dealers akin to specialists on securities exchanges. Consequently, they change their prices as a way of changing demand for their products—deposits and loans. Lending rates are set by discounting default-risk adjusted true prices of the loan while deposit rates are determined by putting a mark-up on default-risk adjusted true price of the deposit. According to [Allen \(1988\)](#), the spreads are influenced by monopoly power and risk premium. In situations of risk neutrality, interest spreads are minimized since there is no need for a risk premium to compensate banks for the uncertainty surrounding the arrival of deposits and request for loans.

In general, a multiple of factors have emerged from the literature on the determination of interest rate spreads and margins. These include degree of bank risk aversion, market structure of the banking sector, volatility of money market interest rates, regulation, efficiency of banks and bank-portfolio. Other factors are credit risks, liquidity of banks, share of foreign capital, bank size, as well as economic factors that are industry-specific or macro in nature.¹

2.2. Empirical evidence

In general, empirical studies that examine the determination of bank interest rate spreads use variables that basically fall in three categories: (i) individual bank-specific factors such as operating or administrative costs, non-performing loans, return on assets, structure of the balance sheet, non-interest income or non-core revenues, bank size, bank liquidity, among others; (ii) factors specific to the banking sector/industry such as the degree of competition or market concentration, regulatory requirements such as statutory reserve requirements or regulated minimum deposit rates and, (iii) macroeconomic indicators which include real gross domestic product (GDP) growth rate and inflation rate. Some studies focus on one category of factors while others consider two or all the three categories of factors.

Whereas some studies follow the [Ho–Saunders](#) approach which involves a two-stage procedure in the empirical determination of spreads² (e.g. [McShane and Sharpe, 1984](#); [Zarruk and Madura, 1992](#); [Afanasieff et al., 2002](#); [Mannasoo, 2012](#)), other studies particularly on the determination of interest rate

¹ The emphasis on the specific factors varies depending on the type of study and whether the focus is on interest margins or interest rate spreads.

² The first step involves an estimation of the pure interest spread obtained by regressing interest spread on a set of bank specific characteristics. In the second step the pure spread is explained on the basis of macroeconomic variables and variables related to the market structure.

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