SHADOW BANKING AND MARKET BASED FINANCE IN NIGERIA: A STUDY OF LISTED INSURANCE FIRMS IN NIGERIA

Ayinla Mathew Omotola,
BUA Cement Company,
Sokoto-Sokoto State

Moshud Nurudeen Mohammed
Usmanu Danfodiyo University,
Sokoto-Sokoto State
moshud2010@gmail.com

Wamarhyel Elisha
Northwest University, Sokoto
wamarhyelelisha@gmail.com

Taofik Ajadi
Abdu Gusau Polytechnic,
Talata Mafara
taofikajadi@gmail.com

***Corresponding author:**
Ayinla Mathew Omotola,
BUA Cement Company,
Sokoto-Sokoto State

ABSTRACT

This study examines the relationship between shadow banking and market-based finance, focusing on the effects of asset-liability mismatches and leverage. The sample size of 5 non-financial institutions was selected from the population of the 10 largest listed insurance companies in Nigeria. Data was retrieved from the annual reports and accounts of the sampled firms and the the fact sheet of NGX spanning through 2019-2023 financial years. Panel regression technique was employed for data analysis and results reveals that asset-liability mismatches have a strong negative impact on market-based finance, while leverage exerts a positive influence. Both relationships are statistically significant (0.000 and 0.006) respectively, highlighting the critical role of shadow banking mechanisms in shaping market-based financial activities. The findings suggest that inefficiencies in aligning assets and liabilities within shadow banking entities can adversely affect market-based finance, while appropriate leverage levels contribute positively. The study recommends that Non-financial institutions should monitor and manage asset-liability mismatches to prevent adverse effects on market-based finance. They should also evaluate the benefits and risks of leverage, ensuring that it contributes positively without creating systemic vulnerabilities.

Keywords: *Shadow Banking, Assets-Liability Mismatch, Leverage, Market Based Finance, Market Capitalization*

I. Introduction.

Shadow banking is a type of regulatory arbitrage in which transactions are primarily exempt from the regulatory restrictions that confined the traditional banking industry and maturity, credit, and liquidity transformations are carried out without using the central bank's credit window. Shadow banking was defined as "all financial activities, with the exception of traditional banking, that depend on backstops to operate" by Claessens and Stijn (2014) and Mehrling, Pozsar, Sweeney, and Neilson (2012). Any financial activity that involves the intermediation of public or private funds and takes place outside of the traditional banking system is essentially operating in the shadows.

Shadow banking is credit intermediation outside of the traditional banking industry, according to the Financial Stability Board (FSB, 2015).

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However, as Li (2014) points out, this basic explanation falls short of capturing the variety of activities that fall under the umbrella of shadow banking in various countries. In the conventional banking system, commercial banks and other organizations that profit from deposit insurance and the central bank's support facility are in charge of loan intermediation. Adrian and Ashcraft (2016) point out that shadow banking operations, on the other hand, are not protected by these measures.

The global financial crisis and the 2007–2009 recession have warranted a closer examination of the feasibility of the shadow banking sector. The shadow banking system arises when financial institutions pledge to transfer risk and offer maturity and liquidity transformation outside of the traditional banking system (Adrian & Ashcraft, 2019). Two justifications for banks' involvement in shadow banking activities are put out by Tang and Wang (2020). In the first place, it offers regulatory arbitrage, which gives financial institutions additional chances to increase their profits without being restricted by rules. The fact that the majority of nations, including Nigeria (SARB, 2016), lack prudential regulation of the majority of shadow banking operations supports this assertion.

Shadow banking makes financial products and processes more opaque and complex, which makes it possible for shadow banks to make more money than traditional banks while increasing investor risk. Shadow banking has a detrimental effect on regulators since it makes regulation less effective, which could lead financial markets to become unstable. Furthermore, by increasing risk and undermining investor confidence in financial markets, shadow banking's opaque structure may work against investor protection. Because of this, investors and authorities face difficulties with this kind of financial innovation, which also has the potential to cause market disruption, as it did during the Great Financial Crisis. Conversely, Ackermann (2020) argues that well-managed shadow banking can improve market efficiency, liquidity, diversity, and risk management.

The importance of non-bank financial intermediaries (NBFI) in economic development has been demonstrated by the literature now under publication (Rateiwa & Aziakpono, 2017), as has the effect that shadow banking has on the economy. These evaluations, however, do not distinguish between non-depository financial institutions (NBFIs) that engage in risky shadow banking practices and other non-depository financial organizations that do not, such pension funds and insurance companies. Meeks (2017) and McCulley (2009) claim that shadow banks put the financial system at risk through their high-risk, high-leverage operations. Additionally, shadow banking offers bank-like services without the support or deposit insurance of the government.

Therefore, compared to banks or other NBFIs, shadow banks represent a bigger threat to systemic stability. This assertion is supported by a large body of research investigating the role of shadow banks in the Great

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Financial Crisis (Pozsar, 2013, Singh & Pozsar, 2011). There is, however, a dearth of empirical research on the financial benefits of shadow banking as well as its impact on the macroeconomic climate in developing countries (Bengtsson, 2016; Tang & Wang, 2015). This is an important research need because it has been shown that shadow banking activities have grown dramatically during the last 20 years. According to reports, shadow banking contributed 117% of global GDP in 2012 (Li, 2014). To lessen the negative effects of shadow banking operations while maintaining their positive influence on credit extension, regulators must take into account the uniqueness of financial systems and the diversity of the entities involved (Rick, 2010). This study challenges the aforementioned theoretical assertions by analyzing the effects of shadow banking on the Nigerian economy from 1981 to 2022.

Like in the majority of African nations, Nigeria has long relied on informal thrift and credit societies to convert finance in rural and semi-urban areas with no or no banking presence. The informal thrift society operates similarly to hedge funds, albeit with less sophistication. However, it does not have the same reporting or operational obligations. Ironically, although shadow banking is commonly recognized for offering financial and related services outside of the well-known traditional banking system, it does not function in a vacuum. The formal banking industry typically dominates this market, utilizing unique and frequently unclear vehicles to expand profit-making opportunities beyond conventional loans and loanable products.

In direct collusion with investment banks, which securitized and repackaged collateralized assets such as mortgages and auto loans for the sole purpose of reselling to shadow banking institutions like pension funds, insurance companies, hedge funds, mutual funds, etc., shadow banking was paradoxically encouraged within the heart of the traditional banking system. These institutions are ultimately in charge of funding and maintaining the shadow banking system, particularly in advanced economies. Collateralized debt obligations, asset-backed securities, mortgage-backed securities, and collateralized loan obligations are the most common forms of intermediate products.

Numerous studies were examined, and it was discovered that many of them had been carried out in Nigeria and other nations. These studies are: In their 2023 study, Akomolafe and Ani examined how shadow banking affected the Nigerian economy. Moses and Samuel (2017) looked at how shadow banking interacts with The monetary policy of the Central Bank of Nigeria is examined by Ridy and Mohammed (2021) through a bibliometric and content analysis of shadow banking. Mehran, Sayed, and Marziyeh (2021). This investigation was justified because none of these studies looked at the connection between market-based finance and shadow banking. This work contributes to the limited body of research on market-based financing and shadow banking, especially in Nigeria. The study used the market capitalization to represent market-based finance and leverage

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and asset-liability mismatch to represent shadow banking. Also, the study is conducted in relation to listed insurance companies in Nigeria, covering a period ranging from 2019 -2023, which is the most recent financial year end of companies in Nigeria. Insurance firms are involved in shadow banking and operates outside the window of the Central Bank of Nigeria.

It is against this backdrop that the study investigate the relationship between shadow banking and market based finance in Nigeria.

Objectives of the Study

i. To examine the relationship between leverage and market based finance (market capitalization) of listed Insurance firms in Nigeria.
ii. To investigate the relationship between asset liability mismatch and market based finance (market capitalization) of listed Insurance firms in Nigeria

Research Hypotheses

i. There is no significant relationship between leverage and market based finance (market capitalization) of listed Insurance firms in Nigeria.
ii. There is no significant relationship between asset liability mismatch and market based finance (market capitalization) of listed Insurance firms in Nigeria.

II. Literature Review

This section discuss the various views of other researchers and explanation as it relates to shadow banking and market based finance.

Shadow Banking (SB)

Paul McCulley, an economist and money manager of PIMCO, first used the phrase "shadow banking" during an economic symposium organized by the Federal Reserve Bank of Kansas City in Jackson Hole, Wyoming, in 2007 (McCulley 2007). The SB system is "the whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures," according to McCulley (2007). "Financial intermediaries that conduct maturity, credit, and liquidity transformation without access to central liquidity or public sector credit guarantees" is how Pozsar et al. (2010) described SBs. The definition and extent of the SB banking system are hotly contested in SB literature, as Noeth and Sengupta (2011) pointed out. Both broad and specific definitions of the SB system are used by the international Financial Stability Board (FSB). According to FSB (2011), SB is defined broadly as "credit intermediation involving entities and activities outside the regular banking system." In liquid markets, SBs are a "wide myriad of highly leveraged non-deposit-taking institutions that lend long and borrow short," according to Ağırman et al. (2013).” SB entities were described by Kodres (2013) as having

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"essentially no loss-absorbing capital or cash for redemptions; opaque governance and ownership structures between banks and shadow banks; little regulatory or supervisory oversight of the type associated with traditional banks; a lack of disclosure and information about the value of their assets (or sometimes even what the assets were); and a lack of access to formal liquidity support to help prevent fire sales." In simpler terms, The Economist (2014) makes the case that SB ought to cover "any bank-like activity undertaken by a firm not regulated as a bank." As a result, we can see how definitions and viewpoints of SB have evolved over the past 14 years, as well as how the actors involved in SB have changed. Ultimately, depending on who we question, the definition of SB and the individuals engaged may change, as Pozsar (2018) contended.

Origin of Shadow Banking

The phrase "shadow banking" was initially used in 2007 by Paul McCulley, a PIMCO economist. "The whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures" is how McCulley described the shadow banking system. Traditional banks' attempts to lower balance sheet exposures in an effort to increase returns led to a long-term accumulation of risk in the shadow banking sector. This result was actually made possible by the development of an entire ecosystem. More leverage, reliance on short-term wholesale finance, and other dangerous aspects were incorporated into previously innocuous arrangements through the use of financial engineering. The shadow banking system was mostly financed by reliance on commercial paper markets, in contrast to the traditional banking system, which was financed by consumer deposits that were supported by access to central bank liquidity. However, shadow banks were vulnerable to "runs," much like the conventional banking system. Crucially, there was a direct link between the shadow banking system and the conventional banking system. Structured investment vehicles (SIVs) and many other off-balance sheet conduits that relied on short-term wholesale funding markets to finance the acquisition of longer-dated assets are examples of shadow banking companies under this definition. In general, these structures financed the acquisition of longer-dated assets by issuing short- and/or medium-term debt. In the event that there was an issue with rolling over money, a bank sponsor would frequently offer the vehicles implicit or explicit liquidity support as a fallback. The capital charge for financing loans in this way was less than the capital charge for keeping the loans directly on the bank's balance sheet, according to the accounting and capital standards in effect at the time. Trunks linked to varying degrees of danger were frequently offered for sale to investors by shadow banking organizations. Nevertheless, bank sponsors kept some of these assets (often the riskiest tranches), indicating that the banks who developed these products did not completely remove themselves from the risks involved. It became painfully clear that this method had flaws that caused banks' balance sheets to be written down by billions of dollars between 2007 and 2008. The drawbacks of a traditional regulatory arbitrage

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were illustrated by these losses. Through both explicit and implicit forms of liquidity support, the shadow banking system allowed companies that resembled banks and were related to banks to have access to official sector backstops. Excessive risk-taking was exacerbated by the moral hazard that resulted and by inadequate regulation of banks' exposure to shadow banking organizations. Global regulators responded by enacting reforms that included adjustments to securitization procedures, accounting regulations, and consolidation guidelines. By all accounts, the shadow banking sector has been reduced to a shadow of its former self as a result of these changes and the lessons that market participants have learnt.

McCulley (2007) claims that the introduction of Money Market Mutual Funds (MMMFs) in the 1970s marked the beginning of the SB system. In the early 1990s, some scholars also noted the "emergence of an unregulated parallel banking system" (likely SB) (D'Arista and Schlesinger 1993). "MMMFs to capture retail deposits from traditional banks, securitization to move assets of traditional banks off their balance sheets, and repurchase agreements (repos) that facilitated the use of securitized bonds as money," according to Gorton and Metrick (2010), are the three types of institutions that benefited from the regulatory and legal changes that led to the development of the SB system. According to some, the SB system was created to close a gap in the economy (Landau 2019). Whatever the case, the size of SB has increased rapidly since the GFC. For instance.

Shadow Banking Metrics

The following are the metrics for shadow banking as stipulated by Barbara, Jeff, Jonna and Alexis (2018):

Asset-Liability Mismatches

The management of assets and liabilities is essential to banks' business plans. At the most basic level, banks collect deposits, or short-term liabilities, to finance longer-term, less liquid loans. Although the depositors receive income from these loans, they are not limited by the loans' maturity or liquidity because they have the right to request the return of their money at any moment. Although asset-liability mismatches are not exclusive to banks, banks' liabilities (investor deposits) are vulnerable to runs, which generates a particular bank-like risk. (Alexis, Jonna, and Jeff, 2018)

For hundreds of years, bank runs have been a defining feature of banking crises. Deposits are short-term liabilities because depositors may demand their money back quickly, which leads to bank runs. These liabilities' short duration creates a first-mover advantage since depositors at the front of the line will get their money in full, while those at the end of the line might not get anything. This encourages people to "run," or go for the exits, as soon as trouble appears. Additionally, the funding's short duration may cause the bank to unexpectedly go bankrupt. Nevertheless, it is observe that banks have modified their fundraising strategies since the crisis to lessen their dependency on short-term funding markets. It is noticed that there has been some

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misunderstanding regarding the distinctions between run risk in mutual funds and run risk in banks and shadow banking organizations. According to Jeff, Jonna, and Alexis (2018), unlevered mutual funds do not have meaningful asset liability mismatches, hence aside from the name "run risk," these are two completely separate dangers.

Significant Leverage

The total debt held by a bank in relation to its equity capital is known as leverage. Leverage increases risk as well as returns to stock investors. Banks may use a significant amount of leverage. Balance sheets with a lot of leverage may make asset-liability mismatches worse. Therefore, one of the most important risks that needs to be controlled to guarantee a bank's solvency is leverage. To do this, bank regulators restrict the amount of leverage that banks can use by enforcing capital requirements and other rules. Naturally, authorities should monitor how other firms use leverage, as banks are not the only ones that do so. However, the size of leverage and the riskiness of the underlying assets that the leverage amplifies should be taken into account when analyzing the implications of leverage utilized by nonbanks for financial stability (Jeff, Jonna, & Alexis, 2018).

Shadow Banking and the Economy of Nigeria

Nigeria's financial services industry has grown over the last 15 years to become one of the biggest and most advanced on the African continent. For example, the banking industry's total assets increased from about N2.5 trillion in 2000 to well over N30 trillion in 2016, and the insurance industry's assets increased from about N25 billion in 2000 to almost N800 billion in 2016. The assets under administration in the pension sector have increased from less than N500 billion in 2004 to more than N6 trillion in 2016 (CBN, 2019). However, a sizable number of bank-like organizations function as middlemen for both individuals and corporations beneath the strong financial infrastructure. The financial derivatives market, which includes commercial papers, interest rate swaps, and foreign exchange forward contracts, is where the Central Bank of Nigeria detects shadow banking activity.

Despite this, because the market is still in its infancy, the CBN and other regulators do not believe that derivatives pose a threat to the nation's financial system. According to a 2014 report by the CBN, "Nigerian financial derivatives markets are still developing, especially in the over-the-counter (OTC) segment." To draw in overseas investors, plans are in the works to launch a derivatives market where more sophisticated instruments will be exchanged.

Notwithstanding the CBN's position on shadow banking in Nigeria, the industry has attracted a lot of attention because of the apex bank's regulatory shortcomings and the sizeable population that does not have access to official financial services. For example, Nigerian microfinance banks have mostly gone unnoticed, mostly

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because of a lack of regulatory resources necessary for efficient supervision. The Federal Capital Territory and the 36 states are home to almost 1,000 microfinance banks, according to CBN data. The CBN faces difficulties in monitoring and implementing prudential rules due to the vast quantity of these institutions.

In comparison to their commercial banking counterparts, the majority of microfinance banks have been able to operate as less-than-ideal financial intermediaries due to this regulatory restriction. Over 190 microfinance banks had their licenses terminated by the CBN in May 2023 after an audit found several regulatory violations, including a high percentage of non-performing loans and insufficient capital reserves.

Pyramid schemes, often known as "miracle" or "wonder" banks, are closely related to microfinance banks. They occasionally appear and offer astronomical interest rates on deposits. These Ponzi schemes continue to operate until they run out of new deposits. Notable "wonder" banks during the last ten years have included Treasure Fund, Wealth Builders, Pennywise, Manpower, and Nospecto Oil and Gas. The Russian Mavrodi Mundial Moneybox (MMM) is a more recent example. There have been many accounts of people losing their investments, money, school fees, and more as a result of its collapse.

About 37 million Nigerian individuals, or 40% of the adult population, are financially excluded, according to a 2014 Enhancing Financial Access survey. The large number of people without bank accounts has encouraged the growth of unofficial financial institutions including community assistance programs, cooperative societies, religious institutions, and rotating savings credit associations (ROSCAs). These unregulated organizations serve a variety of demographics, including farmers, market women, public servants, students, artists, traders, and more, by providing banking-type services like savings, loans, insurance, and mortgages. Up to 35 percent of Nigeria's overall GDP, or around N40 trillion, comes from the operations of these unofficial financial institutions, which provide a substantial contribution to the country's unorganized economy.

Fintech firms might someday become part of shadow banking by joining the ranks of big investment funds and other intricate financial vehicles. In their studies, the Financial Stability Board (FSB) and the European Central Bank (ECB) point out that this industry may be impacted by the Fintech sector's explosive rise. As noted by Hodula et al. (2020), these tech-based businesses provide financial services without fully being subject to banking laws, which could increase systemic risks. It is crucial to remember that neither of these institutions forbids the presence of shadow banking, which is a legally authorized financial services and investment vehicle. Their main worries are that the financial sector needs to be supervised in order to take these vehicles into account and avoid taking on too much risk.

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Market Based Finance

Unlevered investments in financial instruments, such as stocks and bonds, are the essence of market-based finance. Without adding to the system's risk, these investments supply capital to the actual economy. As varied sources of capital for the real economy, securitization, lending, and securities intermediation can also be highly advantageous if they do not include substantial leverage, severe asset-liability mismatches, or access to official sector backstops. Naturally, market-based finance can have asset-liability mismatches and/or leverage, just like banks, which raises the risk of these practices. Nonetheless, such activities are viewed as market-based financing as there is no government sector backstop, which would make taxpayers pay for excessive risk-taking. Similar to shadow banking, market-based financing needs to be regulated, but the rules must be suitable for the risks involved (Barbara et al., 2018). The study employed market capitalization to proxy market based finance.

Market Capitalization

The total monetary value of all of a company's outstanding shares is known as its market capitalization (Chen, 2018). It is computed by multiplying the number of outstanding shares by the current share price. Since many stock market indexes are weighted by market capitalization, market analysts typically use this number to indicate the size of a company. Market capitalization can fluctuate significantly from month to month or even day to day because it is a function of share price (Chen, 2018; Maverick, 2019). The term "outstanding shares" refers to a company's current stock held by its shareholders, including restricted shares held by the company's officials and insiders as well as share blocks held by institutional investors (Chen, 2018). On a company's balance sheet, outstanding shares are displayed under the "Capital Stock" heading. Key measures including a company's market capitalization, profits per share (EPS), and cash flow per share (CFPS) are all determined by the number of outstanding shares. The number of outstanding shares of a firm is not constant and might change significantly over time. A company's equity value is not determined by its market capitalization. For listed domestic companies in Nigeria, market capitalization, also referred to as market value, is calculated by multiplying the share price by the total number of outstanding shares, including those in various classes.

Non-Banking Financial Institution

A financial institution that lacks a complete banking license and is unable to take deposits from the general public is known as a non-bank financial institution (NBFI). NBFIs do, however, provide alternative financial services such check cashing, risk pooling, financial advice, brokerage, investment (both individual and collective), and money transportation. In addition to licensed banks, NBFIs are a source of consumer financing. Insurance companies, venture capitalists, currency exchanges, certain microloan groups, and pawn shops are a

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few examples of nonbank financial institutions. These non-bank financial institutions compete with banks, offer services that aren't always appropriate for banks, and focus on particular industries or demographics (World Bank Group, 2016). Some examples of non-banking financial institutions are as follows:

Risk pooling institutions

Economic risks related to illness, death, property damage or loss, and other loss risks are underwritten by insurance firms. In the event of a loss, they offer a contingent guarantee of financial security. Life insurance and general insurance are the two primary categories of insurance firms. Life insurance is a longer contract that ends when the insured person passes away, whereas general insurance is typically short-term. All segments of the population can obtain both life and property insurance. Insurance firms benefit from a high degree of information efficiency due to the nature of the sector, which requires them to access a wealth of data in order to evaluate the risk in each unique situation (World Bank Group, 2016).

Companies that offer life insurance protect against the financial loss of an insured person's untimely death. Every term, the insured will pay a set amount as the insurance premium. The insured overpays in the early stages and underpays in the later years since the likelihood of dying rises with age but premiums stay the same. The cash value of the insurance policy is the overpayment made in the initial years of the contract.

Market and social insurance are the two subcategories of general insurance. Social insurance protects against the possibility of income loss as a result of unexpected unemployment, illness, disability, and natural calamities. Due to the unpredictable nature of these risks, the ease with which the insured can conceal important information from the insurer, and the existence of moral hazard, social insurance—a need often filled by the government—is not commonly offered by private insurance companies. Family networks and other natural social support systems are less common in industrialized Western nations, where social insurance is more common (World Bank Group, 2016).

Market insurance is property damage or loss insurance that has been privatized. A single premium payment is accepted by general insurance carriers. The firms will pay a certain amount in exchange, which is dependent on the occurrence for which it is insured. Natural disasters, theft, fire, and damage are a few examples.

Contractual savings institutions

Contractual savings institutions, often known as institutional investors, give people the chance to make fiduciary rather than principal investments in group investment vehicles. The combined resources of people and businesses are invested in a variety of debt, equity, and derivatives promises through collective investment instruments. However, rather than the specific investments made by the CIV, the individual owns shares in the

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CIV itself. Mutual funds and private pension plans are the two most well-known types of contractual savings organizations (World Bank Group, 2016).

Open-end and closed-end mutual funds are the two primary varieties. By enabling the public to purchase new shares at any moment, open-end funds create new assets. By selling their shares back to the open-end fund at the net asset value, shareholders can liquidate their holdings. In an initial public offering (IPO), closed-end funds issue a set number of shares. Through the sale of their shares on a stock exchange, the shareholders profit from the appreciation of their assets.

Mutual funds can be classified according to the type of investments they make. For instance, some funds concentrate on tax-exempt securities, while others make investments with high risk and high return. Others focus on cross-border investments, a particular industry, or speculative trading (such as hedge funds). Mutual funds known as pension funds restrict an investor's access to their money until a specific date has passed. To encourage the working people to save a portion of their present salary for a time when they are no longer employed, pension funds receive significant tax benefits in exchange (retirement income).

Other non-bank financial institutions

Broker-dealer organizations known as market makers provide both a buy and sell price quote for an inventory item. These assets consist of foreign currencies, derivatives, government and corporate debt, and stocks. The market maker promptly sells from its stock or makes a buy to make up for the inventory loss as soon as an order is received. The market-maker profits from the bid-offer spread, which is the difference between the purchasing and selling quotes. According to the World Bank Group (2016), market makers increase the liquidity of any asset in their inventory.

A targeted sector receives a restricted range of financial services from specialized sectorial financiers. For instance, real estate financiers distribute funds to potential homeowners, while leasing businesses finance equipment. Compared to other specialist sectorial bankers, leasing businesses often offer two distinct benefits. Because they possess the leased equipment as part of their collateral agreement, they are protected to some extent from the risk of default. Leasing businesses also benefit from preferential tax treatment for equipment investments. Financial advisors, management consultants, and brokers (mortgage and securities) are additional providers of financial services. Their business model is fee-for-service. Financial service providers generally increase the investor's informational efficiency. Brokers do, however, provide a transaction service that allows investors to sell their current holdings.

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Role in financial system

NBFIs help banks offer financial services to businesses and people. They can provide banks competition when it comes to offering these services. Banks might bundle a number of financial services together, while NBFIs separate these services and customize them for certain populations. In order to obtain an informational edge, individual NBFIs may also specialize on a certain industry. NBFIs encourage competition in the financial services sector by unbundling, focusing on, and specializing (World Bank Group, 2016). An economy can be protected from and recover from financial shocks by having a diverse financial system that includes non-bank financial organizations. In the event that the main method of intermediation fails, NBFIs offer a variety of options for converting an economy's savings into capital investments.

Non-bank financial institutions, however, have the potential to make the financial system even more fragile in nations with lax laws. The NBFIs that make up the shadow banking system are subject to mild regulation, although not all NBFIs are. Regulators mostly ignored hedge funds and structured investment vehicles in the lead-up to the recent global financial crisis, concentrating NBFI oversight on insurance corporations and pension funds. The integrity of the entire financial system may be jeopardized if a sizable portion of it is held by NBFIs, which function mainly unchecked by regulators and other parties. A credit bubble, asset overpricing, asset price collapse, and loan defaults can all be fueled by NBFI regulation flaws (World Bank Group, 2016).

Empirical studies

Akomolafe and Ani (2023) assessed the effect of shadow banking on the Nigerian economy over a thirty-two-year study period from 1981 to 2022. According to the study's hypothesis, shadow banking has a big impact on the economy. The Central Bank of Nigeria's (CBN) Statistical Bulletin provided the data for the study. As an estimating strategy, multiple regression techniques was applied. The study's long-term findings clearly demonstrated how heavily the Nigerian economy depends on shadow banking services. This bolsters the claim that by offering an extra lending source and financial system diversification, shadow banking lessens reliance on traditional banks as a source of credit, which benefits the economy. The study's findings have significant policy implications, one of which is that monetary authorities ought to support shadow banking since it offers the nation an alternate source of financial intermediation. Lastly, given the possibility of systematic risk accumulation in shadow banking services, proper regulation is necessary to guarantee their efficient and successful application in the economy to promote growth and development.

Rodoy and Mohammed (2021) investigate systematic review of 2008–2021 literature on shadow banking and provide a summary of the shadow banking industry, going into its definitions, history, roles, and particular activities. We identified four main streams of shadow banking literature by performing a bibliometric analysis

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on articles gathered from the Scopus database using the VOS viewer bibliometric tool. We then performed a content analysis on the best articles from reputable sources. In order to increase our understanding of the shadow banking industry, we also pointed out gaps in the literature and put forth seven research issues that should be the focus of future investigations. The findings of this review serve as a robust reference for scholars researching various aspects of shadow banking to develop our understanding of this sector.

Mehran, Marziyeh and Sayed (2021) examines the impact of shadow banking on financial stability using data from 14 countries of the G20 during 2002 -2018. The study used the quantile regression method after dividing the countries into four groups based on the amount of shadow banking activity. The findings showed that in nations with a high shadow banking index (those in the fourth group), shadow banking had a negative effect on financial stability. Financial instability in the fourth group (high shadow banking) countries rises by 1.6 units for every unit increase in the shadow banking index. However, shadow banking has little impact on financial stability in nations with weaker shadow banking (the other three groupings).

Hong and Hongjie (2020) investigate the impact of shadow banking on systemic risk, look at a dynamic complex interbank network system model that includes shadow banking. This system is different from a traditional banking network and is made up of the interconnected operations of commercial banks and shadow banks. The findings indicate that the presence of shadow banking will raise systemic risk, hasten bank failure, lower bank survival rates, and strengthen central bank support. Higher levels of credit connectivity between commercial banks and lower systemic risk are associated with fewer shadow banks in the system.

Meng-Wen and Chung (2019) evaluated, from the perspective of capital adequacy, how shadow banking affected bank risks. The study looks at two problems. First, put forth the idea that a bank that participates in shadow banking is more likely to take significant risks; this effect is known as the risk-taking hypothesis. Second, consider if effective corporate governance can lessen or increase the impact of shadow banking on taking risks. The sample spans the years 2010–2016 and includes 59 Chinese banks. Three trust beneficiary rights—financial assets acquired through resale agreements, financial assets offered for sale, and investment securities received—are used to represent shadow banking. The risk-taking hypothesis and the tendency of excellent governance to considerably lessen the impact of shadow banking on risk-taking are supported by the results.

Moses and Samuel (2017) examines the dynamic link between Nigeria's shadow banks and the monetary policies of the central bank by applying the ARDL Bounds testing approach to co-integration. There is a short-term correlation between shadow monetary policy and shadow banking, according to the study, but not a long-

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term correlation, which indicates the lack of a standard condition. Therefore, our study suggests that in order to increase financial inclusion, the central bank should keep coming up with new strategies to reward shadow banks.

Viral, Hemal and Sabri (2013) examine the factors influencing the expansion of non-deposit taking non-bank financial companies (NBFCs), which have experienced significant growth in India over the last ten years and are considered systemically important by the Reserve Bank of India. We show that bank loans to NBFCs (i) account for a sizable amount of NBFC liabilities; (ii) vary according to bank allocation to priority lending sectors; (iii) decline as banks expand in rural areas compared to urban areas; but (iv) are essentially nonexistent for the largest state-owned bank, State Bank of India (SBI), and its affiliates, which have a sizable rural branch network. The transfer of term deposits from other banks to SBI caused a permanent contraction shock to bank lending to NBFCs beginning with the financial crisis of the fall of 2008. The main purpose of these bank-NBFC connections is to support the credit expansion of NBFCs that provide loans or asset financing, not investment firms. Overall, the results indicate that, contrary to the prevalent perceptions of shadow banking in Western economies, banks in India view lending to NBFCs as an alternative to direct lending in the country's non-urban areas. However, this alternative is limited by distortions in bank deposit flows brought about by the perceived disparity in government support between various banking groups.

Theoretical Review

Shadow banking is situated within the broader framework of financial innovation and related theories, as outlined below.

The Financial Instability Theory

Minsky's 1977 study, which concentrated on the notion of financial instability, is where modern financial stability theory first emerged. In 1977, Minsky offered an alternate interpretation of Keynes' general theory that emphasized financial turbulence as the main force behind it, challenging the neoclassical interpretation. The General Theory has been misunderstood, according to Minsky (1977), which falsely implies that investment choices determine total output in a capitalist economy. Rather, Keynes maintained that the theory's focus is on financial market disequilibrium. According to this viewpoint, financial agents' capacity to establish the values of financial assets is greatly impacted by disruptions in the financial markets.

This idea is based on an economic framework that includes households, the government, and productive businesses. Financial markets, where a variety of financial products are traded, are accessible to all of these economic actors. The ability of profitable businesses to pay off debt and obtain new funding is largely dependent on their profitability. According to Minsky, a company's ability to pay off debt in the future

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determines its access to financing, while the value of the assets it owns affects its present investment choices. The gross profits made by enterprises, which are influenced by investment levels, are the basis for both asset valuation and the capacity to pay off debt. Investment is therefore inextricably tied to the Hyman-Minsky economic model. Since repayments can only be made when the predicted investment returns are high enough to fulfill the debt obligations, the expectation of higher investment levels serves as a catalyst for debt financing.

Financial Contagion Theory

The phenomenon known as "financial contagion" describes how issues or difficulty in one financial firm can extend to other areas of the financial system. For example, a bank may fail to fulfill its responsibilities to creditors if it experiences severe financial difficulties or becomes bankrupt, which might cause a domino effect of pain for both investors and creditors. According to Ozkan and Unsal (2012), investors and creditors sell off their financial claims in response to a bank's problems. A bank run may result from this as well as herd mentality among investors or depositors. Because financial markets are interconnected, the failure of one bank can quickly have an impact on other organizations that have financial claims against the troubled bank. This process has the potential to spread throughout the banking system and lead to a serious financial disaster.

According to Dungey and Gajurel (2015), the stability of local financial systems may suffer from the spread of bank failures from other areas or jurisdictions. During a crisis, financial contagion is more likely to be aggressive and self-reinforcing, but it can also be gradual and subtle during normal economic conditions. Currency dynamics, market inefficiencies, and knowledge gaps are the main causes of contagion in financial markets (Allen & Gale, 2000).

III. Methodology

Data from five (5) listed insurance companies on the Nigeria Exchange Group and a five-year period make this study longitudinal in nature. Fifteen (15) insurance companies that were listed on the Nigeria Exchange Group as of December 31, 2023 (NGX, 2023) make up the study's population. Five (5) listed insurance companies were chosen from the population, which was based on the biggest insurance companies in Nigeria according to their 2023 turnover. The following listed insurance companies in Nigeria are included in the sample: NEM Insurance Plc, AIICO Insurance Plc, AXA Mansard Insurance Plc, Custodian Insurance Company, and Mutual Benefits Assurance Plc. The independent variable is shadow banking, which is represented by leverage ratios and asset-liability mismatch, whereas the dependent variable is market-based finance, which is represented by the market capitalization of the companies. Data is sourced from the 2019–2023 annual reports and accounts of a sample of Nigerian listed insurance businesses and the Nigeria exchange fact sheets for the period involved. The total assets, equity, total debt, and total assets of the selected listed insurance companies in Nigeria

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comprise the data used in this study. With the use of STATA software, the panel regression model is the data analysis technique and the market based finance is regressed against the shadow based finance (asset-liability mismatch and leverage)

The regression model reads thus:

$MRKBF = \alpha 0 + \beta 1LEVit + \beta 2ASSTLIAMISit + eit$……..……1

Where:

MRKBF= Market Based Finance

LEV= Leverage Ratios

ASSTLIAMIS= Assets-Liability Mismatch

IV. Results and Discussions

This section provides the results and the discussions of findings from the data analysis and these are presented in tables and these include the descriptive statistics, correlation matrix, regression analysis.

Descriptive Statistics

The descriptive statistics display the characteristics of the data in relation to shadow banking and market base finance.

Table 4.1: Descriptive Statistics of Variables

Variables	Mean	Max	Min	Std Dev	Skewness	Kurtosis
Mkbfin	10.259	10.724	9.658	0.286	0.9732	0.226
Asstliabmis	0.511	0.835	0.072	0.255	0.189	0.394
Leverage	1.739	5.846	0.078	1.598	0.036	0.970

Source: Stata Output (2024).

The factors pertaining to shadow banking, which are represented by leverage and assets-liability mismatch (Asstliabmis), are shown in Table 4.1 along with their descriptive statistics. A proxy for market-based finance is the equity-financing ratio. Mkbfin showed a mean value of 10.259, Asstliabmis 0.511 (assets mismatch of around 51%), and Leverage 1.739 (average leverage ratio of roughly 1.7). Leverage: 5.846; Asstliabmis: 0.835; and Mkbfin: 10.724 are the highest values recorded. Mkbfin has the lowest recorded value, 9.658. 0.072 is the Asstliabmis. Leverage: 0.078. In addition, the data's variability or dispersion is measured by the standard deviation, or Std Dev. Mkbfin: 0.286 (market-based finance with a high degree of unpredictability). Asstliabmis: 0.255 (mismatch variability that is moderate). Leverage: 1.598; this shows a lot of variation. Skewness: Shows how asymmetrical the distribution is. Mkbfin: 0.002 (distribution that is almost symmetric).

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Asstliabmis: 0.189, with a small skew to the right. Leverage: 0.036 (skewed very much to the right). The distribution's "tailedness" is gauged by the Kurtosis. Mkbfin: 0.219 (a little flatter than usual distribution). 0.394 (slightly flatter than usual) is the asstliabmis. Leverage: 0.970, which is slightly flatter but closer to a normal distribution. With the greatest mean and standard deviation, Mkbfin exhibits substantial variability and a broad range of values. The data appears to be symmetric based on its low kurtosis and almost zero skewness. Leverage and Asstliabmis have less variability and lower means. Compared to the normal distribution, their distributions are flatter and somewhat tilted to the right.

Correlation Results

This section demonstrate the relationship amongst the variables Market based finance (dependent) and asset-liability mismatched and leverage (independent variables) and these are presented in Table 4.2.

Table 4.2: Correlation Results

Variables	Mrkbfin	Asstliabmis	Leverage
Mrkbfin	1.000		
Asstkiabmis	-0.609	1.000	
Leverage	-0.319	0.871	1.000

Source: Stata Output (2024)

The correlation matrix, shown in Table 4.2, indicates the direction and strength of the linear correlations between the variables: leverage and asset-liability mismatch (Asstliabmis) are independent variables, while market-based finance (Mrkbfin) is the dependent variable. The correlation between Mrkbfin and Asstliabmis is -0.609. This suggests that asset-liability mismatch and market-based finance are strongly correlated negatively. Market-based funding tends to decline dramatically as the mismatch widens. Leverage with Mrkbfin: -0.319 is the correlation. This suggests that market-based finance and leverage have a somewhat inverse connection. Although the correlation is weaker than it is for asset-liability mismatch, higher leverage is linked to less market-based financing.

Regression Results

The results of the regression test are presented in this section, which displayed the coefficient, standard error and p-values of the variables. The results emanating in the regression results is use to ascertain significance or no significance of the relationship between shadow banking and market based finance.

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Table 4.3 Regression Results

Variables	Coefficient	Standard Error	P-value
Asstliabmis	-1.542 .	0.325	0.000
Leverage	0.158	0.052	0.006

Source: Stata Output (2024).

The regression results of the association between market-based finance and shadow banking (Asstliabmis and Leverage) are shown in Table 4.3. The F-statistic tests the model explains a significant portion of the variance in the dependent variable (market based finance). Prob>F= 0.0001 indicates that the model is statistically significant ($p<0.05$), meaning the independent variables jointly explain the variation in the dependent variable. R-squared of 0.5559 means that approximately 55.59% of the variation in the dependent variable (market based finance) is explained by the independent variables (asset liability mismatch and leverage). The adjusted R-squared of 0.5156 adjust for the number of predictors in the model, proving a more accurate measure for smaller samples. It shows about 51.56% of the variance is explained, which is still strong. The root MSE of 0.19897 reflect the average distance between the observed and predicted values. A lower Root MSE indicates better model performance (Appendix). There is a significant negative correlation, as indicated by the assets-liability mismatch coefficient of -1.542. Keeping everything else equal, market-based finance falls by 1.542 units for every unit rise in asset-liability mismatch. A favorable relationship is indicated by the coefficient, which is 1.973. Keeping all else equal, market-based finance rises by 0.158 units for every unit increase in leverage. The accuracy of the coefficient estimates is gauged by the standard error. More accurate estimates are shown by smaller values. The estimations appear to be accurate, as evidenced by the comparatively tiny standard errors for Asstliabmis (1.852) and Leverage (0.296). The statistical reliability of the associations is indicated by the high significance of both Leverage ($p = 0.006$) and Asstliabmis ($p = 0.000$). The substantial harm that asset-liability mismatch causes to market-based finance is confirmed by the negative and significant coefficient ($p = 0.000$). This is consistent with the previous correlation study. The strong beneficial influence of leverage on market-based finance is confirmed by the positive and significant coefficient ($p = 0.006$).

V. Conclusions

The study concludes that there is a considerable negative correlation between market-based finance and the mismatches in assets and liabilities within shadow banking firms (coefficient = -1.542, $p = 0.000$). This implies that ineffective asset-liability matching has a detrimental impact on the capacity to maintain market-based financing. Further evidence that greater leverage in shadow banking organizations improves market-based

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financing comes from the positive correlation (coefficient = 0.158, p = 0.006). This suggests that the use of borrowed funds by shadow banking supports market-based financial activity. The statistical significance of both variables ($p < 0.05$) demonstrates that shadow banking mechanisms, such as leverage and asset-liability mismatches, are important in determining market-based financial outcomes.

VI. Recommendations

The study recommends that in order to avoid negative consequences for market-based finance, non-financial entities should keep an eye on and handle asset-liability mismatches. Additionally, they should assess the risks and advantages of leverage to make sure it adds value without posing systemic issues. The impact of shadow banking on financial institutions may be better managed and its sustainable integration into the global economy ensured by regulators, policymakers, and stakeholders by addressing two important risk factors: leverage and asset-liability mismatches.

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