



# Effect of Creative Accounting Practices on Solvency of Selected Deposit Money Banks Quoted in Nigeria

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**Abstract:** The purpose of deposit money banks is to maximize solvency by acting as an economic intermediary between economic sectors that are in deficit and those that are in surplus. One of the main goals of deposit money banks' existence is to achieve solid bank solvency. However, fraud manner of using creative accounting measures in manipulating bank financial information has resulted to insolvency and collapsed of deposit money banks in Nigeria. The objective of the study is to examine the effect of creative accounting practices (cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality) on solvency of selected deposit money banks quoted in Nigeria. The population of the study comprised of all the nineteen (19) listed deposit money banks as at December, 2021 while a targeted random sampling technique was adopted to select the sample size of ten (10) failed banks and seven (7) surviving commercial banks listed in Nigeria Stock Exchange (NGX). Ex post facto research design was adopted using dataset for the period 2006–2021 which were collated from the annual reports and financial statements of the listed deposit money banks. The data collected were analyzed using mean scores and Panel Regression Model method. The analysis revealed that three of the proxies of creative accounting such as cash assets structure, equity capital structure and deposit liability negatively but insignificantly influenced the survival of the DMBs, accrual quality is having a negative and significant effect on survival of the banks while only loan structure is having a positive but insignificant effect on survival of the DMBs on bank solvency ( $\text{AdjR}^2 = 0.258$ ,  $F = 12.07$ ;  $p < 0.05$ ); while for failed banks, it was revealed that cash assets structure, and equity capital structure have positive and significant effect but equity capital structure has negative and significant effect while loan structure, deposit liability and asset quality have positive and insignificant effect on bank solvency ( $\text{AdjR}^2 = 0.33$ ,  $F = 7.38$ ;  $p < 0.05$ ). The study concluded that creative accounting measures affect bank solvency in Nigeria. Therefore, the study recommended that bank managers should endeavor to employ accounting measures based on global and accounting standard so as to enhanced bank solvency among deposit money banks in Nigeria.

**Keywords:** Cash Assets Structure, Deposit Liability, Equity Capital Structure, Loan Structure, Bank Solvency

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## 1. Introduction

Bank solvency is one of the major objectives of any deposit money banks in any nations. This objective is vital because banks cannot play their traditional role of financial intermediation without sound solvency. However, Isik & Uygur argued that deposit money banks find it difficult or challenging in achieving solvency due to unhealthy practices in dealing with creative accounting principles. [16, 21]

Attaining the deposit money banks surviving goal depends

on the deposit money banks management ability to effectively and efficiently manage supervisory rating system called CAMELS components that is Capital adequacy, Asset quality, Management quality, Earnings, Liquidity, and Sensitivity to market risk. Isik and Uygur argue that there is high rate of deposit money banks failure in developed, emerging and developing economies which adversely affected deposit money banks primary roles [21]. Deposit money banks cannot carry out economic intermediary and contribute to economic functions without sound financial surviving indicators such as bank solvency, However,

Egolum & Onoda opined that globally, achieving sound business surviving mechanisms via solvency by deposit money banks have become greater challenge to managers which hinder sound financial intermediation towards economic functions.

Ayunku and Uzochukwu pointed that financial industry or banking industry of some developing economies like the African continents including Nigeria banking industry do not match up in value to the size of an average bank in some developed nations due to challenges of high fiscal mediation cost, illiquidity and poor accessibility finance services dominating Africa banks, thus creating threat to solvency of the African and Nigeria banking industry [10]. According to [36], Nigerian deposit money banks were characterized with untraceable lending, mismatching of assets and liabilities, weak and ineffective internal control, inadequate policies, and lack of standard practices. Then, managers of Nigeria deposit money banks strategically employed creative accounting principle in covering unethical banking practices, therefore persistence usage of creative accounting to cover unethical banking operations threaten deposit money banks solvency in Nigeria. According to Egolum, P. U. P., & Onoda, B. E. P. [17], majority of Nigerian deposit money banks experience solvency problem resulting from financial information smoothing via creative accounting.

Creative accounting (cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality) also known as income smoothing or accounting manipulation for the purpose of adjustment of accounting information in the financial statement to suit the greedy intention of managers. It shows how accounting exercise deviates from global accounting rules, characterized by excessive non-compliance and smoothing in income, assets or liabilities to gain greedy result that will attract more investors [30, 33]. Therefore, manipulation in the accounting record and exercise become illegal in the global accounting practices. Deposit money banks involved in accounting manipulation to twist the genuine and impartial trend in the financial situation of deposit money banks thus creating threat, distress and denied the deposit money bank from going concern objective [25].

The Nigerian banking industry experienced the problem of insolvency due to fraudulent act of employing creative accounting within the banking institutions, which leads to poor management of credit risk as well as decrease in solvency of deposit money banks in Nigeria [13, 19]. Also, Olojede, P., Iyoha, F., & Egbide, B. asserted that wrong and dubious application of accounting policies trigger insolvency as well as lead to high credit risk, thus led to continuous collapsed in deposit money banks in Nigeria [27]. Adámiková and Tatiana pointed that Banks in Nigeria will continue to record decline in bank solvency due to bias application and fraudulently employed creative accounting polices among deposit money banks managers in Nigeria [1]. Despite increased in deposit money banking activity, research trends did not give sufficient rationale for the link between bank solvency and creative accounting in Nigeria.

Thus, there exist problem of solvency among deposit money banks in Nigeria and the gap identified among past related studies motivated this study [17].

## 2. Literature Review and Hypothesis Development

The literature review comprised of brief conceptual definitions, theoretical framework and empirical review and gap.

### 2.1. Bank Solvency

Oino conceptually defined bank solvency as the bank reflection capacity to perform the intermediation role [28]. Liquidity, credit, and market risk all contribute to the possibility of bank insolvency. Bank solvency is defined by, as a bank's monetary commitments on demand, such as deposits in current accounts and credit lines. This emphasizes the importance of the bank's capacity to meet its short- and long-term financial obligations [13]. Aldasoro and Park defined solvency as the power of a bank to be able to settle its debt and many financial duties [8]. Bank solvency is one of the metrics employed to determine bank financial situation and survival with the aim to checkmate the power and pattern at which bank manage financial operations in the future occurrence. De-Bandt, Lecarpentier, and Pouvelle defined bank solvency as deposit money bank capacity in answering the call for long run debts and fiscal responsibilities [15]. Solvency is an important metric of financial health since it demonstrates a company's ability to manage its operations soon.

### 2.2. Creative Accounting Practices

Adámiková and Tatiana conceptually defined creative accounting practices as the intentional disruption of economic development in society for a specific aim [1]. It's a method for accountants to modify data in accounting utilizing their understanding of accounting laws and standards. Creative accounting tools can go beyond the legality and lead to crime and the essence of creative accounting is based on accounting theories, but it adjusts the company's results according to various purposes [1, 2, 18]. Siyanbola, Benjamin, Amuda and Lloyd defined Creative Accounting Practices (CAP) as the falsehood of financial statement information to picture the company in a planned mark [33]. In this study, creative accounting practices was measure in terms of cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality.

### 2.3. Theoretical Framework

This study was anchored on survival-based theory and ethical theory. Both theories establish that organizations like deposit money banks find all means through unethical act to manipulate financial information to survive among competitors through manipulation of financial statement of

the bank. The survival based and ethical theories primary objective is turning around deposit money banks through manipulation of financial information that is creative accounting practices to make the deposit money banks survive and run efficiently to better adapt to banking system regulators requirement, business environment, and to achieve the goal of surviving the competitive market in which it operates [8]. As survival-based theory and ethical theory argued, if it is not adapting to the ever-changing environment and become efficient in its creative accounting practices, it simply means the deposit money banks will not survive therefore deposit money banks practices unethical act to remain in banking business and mislead the stakeholders [8]. Thus, the one that successfully turned around that is involve in creative accounting practices is the one that operates efficiently and survive among banks in Nigeria.

#### 2.4. Empirical Review

Studies such as Akenbor & Ibanichuka and Tyoakosu & Ekpe empirically assessed the influence of creative accounting on the performance of DMBs in Nigeria from 2007 to 2016 [5, 34]. Results of the study using multiple regressions revealed that, non- performing loans and total accrual do not significantly affect banks financial performance in terms of return on assets while gross earnings significantly affect performance of Nigeria DMBs. However, the study of Ahmed, Y. A. I. exhibit that creative accounting significantly enhances smoothening reporting of financial performance measures such as firm solvency which in turn created long term failure of firms in Nigeria [3]. Elaigwu, Audu, and Abdullahi studied the link between creative accounting and firm's failure in the Nigerian financial reporting [19]. Their study found that creative accounting practices have a significant effect on corporate failures in Nigeria and that the major reason for creative accounting in Nigerian corporate organizations is to boost the solvency and market value of shares.

Likewise, the studies of Asif, Junaid, Yu & Md and Nangih examined the link between creative accounting and performance. Study found that creative accounting positively affects financial performance of organizations [9, 23]. However, Nangih empirically found that creative accounting techniques adversely affect firm financial performance [23]. This indicated that there mixed finding among past studies within and outside Nigeria contexts. Ndebugri and Tweneboah (2018) analyze the critical effect of creative accounting practice in the corporate sector of Ghana. Their studies found that there exists positive effect between creative accounting and firm financial performance. Umobong and Ironkwe [35] examined creative accounting and firm's financial performance. Result showed that seasonal trading report has no significant relationship with firm performance indicators such as solvency, liquidity and return on assets. Studies like Bankole, Ukolobi & McDubus and Seman, Jusoh, Rashid & Ramin focused on how creative accounting affect firm financial performance [12, 31]. Their studies found that creative accounting has influence on firm

financial performance. Okoye and Obioma supported the findings of both Ukolobi & McDubus and Seman, Jusoh, Rashid & Ramin that creative accounting techniques enhances selected firm financial performance [12, 26, 31].

Elaigwu, Audu, and Abdullahi studied link effect between creative accounting and corporate failure in the Nigerian financial reporting [19]. Their study found that creative accounting practices have a significant effect on corporate failures in Nigeria and that the major reason for creative accounting in Nigerian corporate organizations is to boost the solvency and market value of shares. Likewise, the studies of [9, 23] examined link between creative accounting and financial performance. The study found that creative accounting positively affects financial performance of organizations. However, Seman, Jusoh, empirically found that creative accounting techniques adversely affect firm financial performance [26]. This indicated that there mixed finding among past studies within and outside Nigeria contexts. Ndebugri and Tweneboah analyze the critical effect of creative accounting practice in the corporate sector of Ghana [24]. Their studies found that there exists positive effect between creative accounting and firm financial performance. Umobong and Ironkwe examined creative accounting and firm's financial performance [35]. Result showed that seasonal trading report has no significant relationship with firm performance indicators such as solvency, liquidity and return on assets.

Balagobei in Sri Lanka carried out study on the interlink between accounting practices and organizational performance [11]. Results show that record keeping, and budgeting practices influenced performance of SMEs. Al-Olimat, and Al-Shbail among others have empirically examined the effect of creative accounting on financial performance but failed to establish empirical effect of creative accounting measures on bank solvency especially in Nigeria [7]. There studies found that creative accounting significant determine financial reporting quality among commercial banks. Ezuwore-obodoekwe and Elias examined the effect of creative accounting practices on the performance of Nigerian banks [20]. Study found that creative accounting positively affects firm financial performance. Considering aforementioned related empirical findings, there exist empirical study that focused on how creative accounting practices (cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality) on solvency of selected deposit money banks (DMBs) quoted in Nigeria. Based on empirical identified, the study hypothesized that;

*Creative accounting practices (cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality) have no significant effect on the solvency of selected DMBs quoted in Nigeria.*

### 3. Methodology

The study employed *ex-post facto* research design to determine the effect of creative accounting practices on solvency of selected deposit money banks quoted in Nigeria.

The *expost facto* design is considered appropriate for the study because the study is non-experimental and sought to investigate past event that the data has been published and not possible to manipulate. Related studies such as [27, 26, 37] employed *expost facto* design which is align with the current study. The study focused on and compare surviving and collapsed deposit money banks in Nigeria in the area of creative accounting practices (cash assets structure, equity capital structure, loan structure, deposit liability and accrual quality) within the period of 2006 to 2021 years.

The sample size of the study was drawn from the total population of 28 deposit money banks in Nigeria. The sample size was achieved through the use of purposive sampling technique; where five of Tier-1 (First Bank Limited, UBA Plc, GTBank Plc, Zenith Bank Plc and Access Bank Plc) and 2 from Tier -2 (Fidelity Bank and Wema Bank) deposit money banks was selected for Surviving Banks in Nigeria while Oceanic Bank Plc, Intercontinental Bank Plc, SKYE Bank Plc, Fin Bank Plc, Bank PHB Plc, Enterprise Bank Plc, Afribank Plc, Mainstreet Bank Plc. Spring Bank Plc and Diamond Bank Plc was selected for failed deposit money banks in Nigeria. The study employed panel regression method of analysis and post estimation tests such as hausman test, Testparm Test, Heteroskedasticity Test, serial correlation test among others.

### 3.1. Model Specification

Following the review of related literature, the study adapted the model in the study of [32] and the model is specified as;

$$BS = F(TA, TL, TE) \quad (1)$$

The model of [32] is stated in panel econometric form as;

### 3.2. Measurement of Variables

**Table 1.** Summary of Study Variables' Measurement,

Variables	Variable Measurement	Source	Source for the Measure of Study Variables
Bank Solvency (BSOL)	(Net Profit After Tax + Depreciation) / (Short Term Liability + Long Term Liability)	Yearly Financial Statement of the Selected DMBs	De-Bandt, Lecarpentier and Pouvelle [15]
Cash Assets Structure (CAS)	Ratio of (Cash + Cash Equivalents) to Current Liabilities	Yearly Financial Statement of the Selected DMBs	Ahmed, Ningi and Dalhat [4]
Equity Capital Structure (ECS)	Formula 1: Share capital equals the issue price per share times the number of outstanding shares. Formula 2: Share capital equals the number of shares times the par value of stock plus the paid in capital in excess of par value	Yearly Financial Statement of the Selected DMBs	Doorasamy [16]
Loan Structure (LS)	Value of loan repayment with tenor	Yearly Financial Statement of the Selected DMBs	Dang and Huynh [14]
Deposit Liability (DL)	loan-to-deposit ratio, divide a bank's total amount of loans by the total amount of deposits for the same period	Yearly Financial Statement of the Selected DMBs	Novickytea and Petraitytea [39]
Accrual Quality (AQ)	(Net Income – Free Cash Flow) divided by total assets.	Yearly Financial Statement of the Selected DMBs	Usifoh, Adegbeie and Salawu [40]

Source: Author's Computation (2022)

## 4. Result and Discussion of Finding

Bank Solvency (BSOL), which is the percentage of total

$$LTS_{it} = \beta_0 + \beta_1 TA_{it} + \beta_2 TL_{it} + \beta_3 TE_{it} + \mu_{it} \quad (2)$$

Where:

LTS = Long Term Survival (LTS) proxy for Bank Solvency (BS). The bank solvency (BS) was one of the indicators used to measure bank survival in literature (Sianyo, 2016). Therefore,

BS = Business Solvency proxy with LTS in this study as supported by literature and to achieve objective of this study.

TA = Total Assets proxy for Creative Accounting

TL = Total Liability proxy for Creative Accounting

TE = Total Equity proxy for Creative Accounting

In order to achieve the specific objective of the study, the study adapted the model of [32] by including loan structure and accrual quality so as to suit the objective of the study and fully capture variables related to creative accounting practice published in the financial statement of deposit money banks in Nigeria. The adapted model is stated as;

$$BS = f(CAS, ECS, LS, DL, AQ) \quad (3)$$

Econometrically, the adapted model could be written thus:

$$BS_{it} = \beta_0 + \beta_1 CAS_{it} + \beta_2 ECS_{it} + \beta_3 LS_{it} + \beta_4 DL_{it} + \beta_5 AQ_{it} + \mu_{it} \quad (4)$$

Where:

$\beta_0$  = Constant

BS = Bank Solvency

CAS = Cash Assets Structure

ECS = Equity Capital Structure

LS = Loan Structure

DL = Deposit Liability

AQ = Accrual Quality

$\mu_{it}$  = Error term

equity to total asset, having a minimum value of -23.29 and -16.28 means that the firms at some points reported huge losses to the extent that losses almost doubled the entire asset of the firms. Considering the maximum value of 28.28 and

51.85 implies that firms are highly solvent at a particular point in time, the solvency was so huge and in excess of the entire assets of the bank. On average, the percentage of total cash utilizing the total assets of the firms (cash asset structure) was 15.84 and 13.55, for Surviving Banks and Failed Banks respectively. This means an average of 15.84 per cent return

on total assets invested in the surviving business. The variability of the return on asset is slightly lower at 9.93 which means that the predictability of the variable from the past records may be contained in a normal level of uncertainty.

**Table 2.** Descriptive Statistics.

	Mean		Standard Error		Minimum		Maximum	
	Surviving Bank	Failed Bank	Surviving Bank	Failed Bank	Surviving Bank	Failed Bank	Surviving Bank	Failed Bank
BSOL	13.56	21.97	5.85	14.77	-23.29	-16.48	28.28	51.85
CAS	15.84	13.55	9.93	11.61	0.58	0.13	59.1	50.29
ECS	8.69	4.44	17.71	3.68	-5.29	-10.64	190.21	10.44
LS	40.44	41.05	9.46	14.41	12.43	13.81	61.6	68.96
DL	60.62	82.73	18.97	38.64	14.41	31.33	138	248.52
AQ	-0.14	-0.11	0.23	0.21	-1.28	-0.96	0.24	0.13

Source: Author's Computation (2022)

**Table 3.** Correlation Matrix for Multicollinearity Test.

	Survival Banks						Failed Bank					
	BSOL	CAS	ECS	LS	DL	AQ	BSOL	CAS	ECS	LS	DL	AQ
BSOL	1	-0.05	-0.75	0.2	0.15	-0.19	1	0.13	-0.30	0.2	0.48	0.05
CAS	-0.03	1	-0.05	-0.42	-0.25	-0.84	0.13	1	0.04	0.14	0.12	-0.29
ECS	-0.35	-0.05	1	-0.43	-0.17	-0.7	-0.30	0.04	1	0.14	0.12	-0.29
LS	0.21	-0.09	-0.23	1	0.09	0.03	0.2	-0.00	0.14	1	0.21	-0.41
DL	0.16	-0.08	-0.34	-0.01	1	-0.27	0.48	-0.1	0.19	0.10	1	0.1
AQ	-0.19	-0.27	-0.21	-0.7	-0.08	1	0.05	-0.03	-0.40	-0.08	-0.19	1

Source: Author's Computation (2022)

#### 4.1. Correlation Analysis

The correlation analysis result showed that bank solvency is positively and negatively correlated with Cash Assets Structure (CAS), Equity Capital Structure (ECS), Loan Structure (LS), Deposit Liability (DL) and Accrual Quality

(AQ) for the Surviving banks and failed Banks. The nature of the relationship implies a linear uniform positive relationship, however, not all the variables have a direct relationship. Since none of the variable value up to 0.8, thus there exist no multicollinearity problem among the series and is an indication that the series is healthily related [38].

**Table 4.** Regression and Post-Estimation Results of Hypothesis.

Variable	Surviving Banks				Failed Banks			
	Pooled OLS with Robust standard errors				Pooled OLS with Cluster standard errors			
	Coeff	Std. Err	T-Stat	Prob	Coeff	Std. Err	T-Stat	Prob
Constant	3.06	6.175	0.5	0.621	6.295	5.822	1.08	0.284
CAS	-0.05	0.056	-0.88	0.378	0.274	0.134	2.05	0.045
ECS	-0.078	0.029	-2.72	0.008	-1.337	0.423	-3.16	0.002
LS	0.367	0.174	2.11	0.037	0.108	0.113	0.95	0.345
DL	-0.064	0.05	-1.28	0.202	0.166	0.042	3.97	0
AQ	-7.196	2.177	-3.31	0.001	2.433	7.438	0.33	0.745
Adj. R <sup>2</sup>	0.2583				0.33			
F-Stat	F <sub>(5, 106)</sub> = 12.07 (0.00)				F <sub>(5, 61)</sub> = 7.38 (0.00)			
Hausman Test	chi <sup>2</sup> <sub>(5)</sub> = 26.71 (0.00)				chi <sup>2</sup> <sub>(5)</sub> = 2161.45 (0.00)			
Testparm Test (LM Test)	F <sub>(15, 85)</sub> = 1.67 (0.07)				F <sub>(14, 38)</sub> = 0.17 (0.9995)			
Heteroskedasticity Test	chi <sup>2</sup> <sub>(1)</sub> = 25.27 (0.00)				chi <sup>2</sup> <sub>(1)</sub> = 13.36 (0.00)			
Serial Correlation Test	F <sub>(1, 6)</sub> = 0.454 (0.53)				F <sub>(1, 9)</sub> = 72.358 (0.00)			

Dependent Variable: BSOL @5% Significance level

Source: Author's Computation (2022)

#### Regression Equation Results

$$BSOL_{it} = \alpha_0 + \beta_1 CAS_{it} + \beta_2 ECS_{it} + \beta_3 LS_{it} + \beta_4 DL_{it} + \beta_5 AQ_{it} + \varepsilon_{it}$$

Surviving Banks Regression Equation Results:

$$BSOL_{it} = 3.06 - 0.050CAS_{it} - 0.078ECS_{it} + 0.367LS_{it} - 0.064DL_{it} - 7.196AQ_{it} + \varepsilon_{it}$$

Failed Banks Regression Equation Results:

$$BSOL_{it} = 6.295 + 0.274CAS_{it} - 1.337ECS_{it} + 0.108LS_{it} + 0.166DL_{it} + 2.433AQ_{it} + \varepsilon_{it}$$

#### 4.2. Pre-Estimation Results Interpretation for Surviving Banks

To determine the most appropriate estimating approach, the study carried out a Hausman test to decide whether to use fixed effects or random effects techniques. Judging by the Hausman probability value of 0.00, we reject the null hypothesis (random effect) and accept the use of the fixed effect analysis as there is a correlation between the unique errors and the regressors in the model. The testparm test was conducted to determine whether the coefficient for all years is jointly equal to zero, requiring the choice of time fixed effect model. The testparm test revealed a probability value of 0.07 indicating there is no need for time fixed effect. For the robustness of the model, Heteroskedasticity, and serial correlation tests were conducted. Heteroskedasticity was conducted to check for variations in the model's residuals using the heteroscedasticity test. The result had a probability value of 0.00 indicating that the model is heteroskedastic, which implies that the model's residuals are trending over time. The serial correlation test conducted to check if the coefficients and residuals of the model are correlated using the Wooldridge test had a probability value of 0.53. This proved that there is no serial correlation that causes the standard errors of the co-efficient to be smaller than they actually are and higher than R-Squared. That is, the coefficients and the residuals of the model are uncorrelated and thus, the model is free from serial correlation problems. Due to the nature of the model for the Surviving Banks was estimated using Pooled OLS Regression with Robust standard errors.

##### *Pre-Estimation Results Interpretation- Failed Banks*

To determine the most appropriate estimating approach, the study carried out a Hausman test to decide whether to use fixed effects or random effects techniques for the Failed Banks analysis. Judging by the Hausman probability value of 0.00, we reject the null hypothesis (random effect) and accept the use of the fixed effect analysis as there is a correlation between the unique errors and the regressors in the model. The testparm test was conducted to determine whether the coefficient for all years is jointly equal to zero, requiring the choice of time fixed effect model. The testparm test revealed a probability value of 0.9995 indicating there is a need for time fixed effect. For the robustness of the model, Heteroskedasticity, and serial correlation tests were conducted. Heteroskedasticity was conducted to check for variations in the model's residuals using the heteroscedasticity test. The result had a probability value of 0.00 indicating that the model is heteroskedastic, which implies that the model's residuals are trending over time. The

serial correlation test conducted to check if the coefficients and residuals of the model are correlated using the Wooldridge test had a probability value of 0.00. This proved that there is a serial correlation that causes the standard errors of the co-efficient to be smaller than they actually are and higher than R-Squared. That is, the coefficients and the residuals of the model are correlated and thus, the model is not free from serial correlation problems. Due to the nature of the model for the Failed Banks was estimated using Pooled OLS with Cluster standard errors.

#### 4.3. Regression Model for Surviving Banks

As depicted in Table 4, the result of the regression analysis for model one of the Surviving Banks showed values for the effect of creative accounting practices on bank solvency, the probability values revealed that: Cash Assets Structure (CAS), and Deposit Liability (DL) (CAS,  $\rho = 0.378$ ; DL,  $\rho = 0.202$ ) insignificantly affect bank solvency (BSOL), while Equity Capital Structure (ECS), Loan Structure (LS), and Accrual Quality (AQ) (ECS,  $\rho = 0.008$ ; LS,  $\rho = 0.037$ ; AQ,  $\rho = 0.001$ ) exerted a significant effect on BSOL.

Assessing the magnitude of the effect as well as the directions, the coefficients of individual constructs of creative accounting practices (CAS, ECS, LS, DL, and AQ) were used. The signs and values of the coefficients showed that CAS ( $\beta = -0.050$ ), ECS ( $\beta = -0.078$ ), DL ( $\beta = -0.064$ ), and AQ ( $\beta = -7.196$ ) negatively affect BSOL while LS ( $\beta = 0.367$ ) exerted a positive effect on BSOL. The magnitude of the effect is measured by the absolute values of the coefficients which means that an increase in the CAS by a percentage would yield a 0.05 per cent decline in BSOL; likewise, a percentage increase in ECS would result in a 0.078 per cent decline in BSOL; also, as DL increases by a per cent, there would be a fall in BSOL by 0.064 while a per cent increase in AQ would lead the 7.196 per cent fall in BSOL. Contrarily, a per cent increase in LS would result in a 0.367 per cent increase in BSOL.

In conclusion, CAS and DL exerted an insignificant negative effect on BSOL, ECS and AQ exerted a negative and significant effect on BSOL; while LS has a significant positive effect on BSOL. The result of the F-statistics of 12.07 with the degree of freedom of F(5, 106) indicating that model one has five (5) measures of independent variables in 112 firm-year observations and having a probability value of 0.000 implies that CAS, ECS, DL, LS, and AQ jointly and significantly affect BSOL. Also, the  $R^2$  value of the coefficient of multiple determination of 0.2583 means that the combined changes in CAS, ECS, DL, LS, and AQ would cause 25.83% changes in BSOL while the remaining changes of 74.17 per cent are caused by other factors which are not

within the coverage of the model.

Decision: At a level of significance of 5%, the F-statistics is 12.07, while the P-value of the F-statistics is 0.000, which is less than 0.05 accepted level of significance. Therefore, the null hypothesis that creative accounting practices do not significantly affect bank solvency of listed deposit money banks in Nigeria is rejected. We accept the alternate hypothesis and conclude that creative accounting practices significantly affect bank solvency of listed surviving deposit money banks in Nigeria.

#### 4.4. Regression Model for Failed Banks

As depicted in Table 4. The result of the regression analysis for the Failed Banks showed values on the effect of creative accounting practices on bank solvency. The probability values revealed that Cash Assets Structure (CAS), Equity Capital Structure (ECS), and Deposit Liability (DL) (CAS,  $\rho = 0.045$ ; ECS,  $\rho = 0.002$ ; DL,  $\rho = 0.000$ ) significantly affect bank solvency (BSOL), while Loan Structure (LS), and Accrual Quality (AQ) (LS,  $\rho = 0.345$ ; AQ,  $\rho = 0.745$ ) exerted an insignificant effect on BSOL.

Assessing the magnitude of the effect as well as the directions, the coefficients of individual constructs of creative accounting practices (CAS, ECS, LS, DL, and AQ) were used. The signs and values of the coefficients showed that CAS ( $\beta = 0.274$ ), LS ( $\beta = 0.108$ ), DL ( $\beta = 0.166$ ), and AQ ( $\beta = 2.435$ ) positively affect BSOL while ECS ( $\beta = -1.337$ ) exerted a negative effect on BSOL. The magnitude of the effect is measured by the absolute values of the coefficients which means that an increase in the CAS by a percentage would yield a 0.274 per cent increase in BSOL; likewise, a percentage increase in LS would result in a 0.108 per cent increase in BSOL; also, as DL increases by a per cent, there would be a rise in BSOL by 0.166. Furthermore, a

per cent increase in AQ would lead to a 2.435 per cent increase in BSOL. Contrarily, a per cent increase in ECS would result in a 1.337 per cent decrease in BSOL.

In conclusion, CAS and DL exerted a significant positive effect on BSOL, LS and AQ exerted a positive and insignificant effect on BSOL; while ECS has a significant negative effect on BSOL. The result of the F-statistics of 7.38 with the degree of freedom of F(5, 61) indicating that model one has five (5) measures of independent variables in 61 firm-year observations and having a probability value of 0.000 implies that CAS, ECS, DL, LS, and AQ jointly and significantly affect BSOL. Also, the  $R^2$  value of the coefficient of multiple determination of 0.33 means that the combined changes in CAS, ECS, DL, LS, and AQ would cause 33.0% changes in BSOL while the remaining changes of 77.0 per cent are caused by other factors which are not within the coverage of model One.

The probability F-statistics value for Failed Banks of 0.000 was less than the 5% chosen significant level of the study, the null hypothesis which states that "Creative accounting practices do not significantly affect bank solvency of listed deposit money banks in Nigeria is hereby rejected. We accept the alternate hypothesis and conclude that "Creative accounting practices significantly affect bank solvency of listed deposit money banks in Nigeria".

Decision: At a level of significance of 5%, the F-statistics is 7.38, while the P-value of the F-statistics is 0.000, which is less than 0.05 accepted level of significance. Therefore, the null hypothesis that creative accounting practices do not significantly affect bank solvency of listed deposit money banks in Nigeria is rejected. We accept the alternate hypothesis and conclude that creative accounting practices significantly affect bank solvency of listed failed deposit money banks in Nigeria.

Table 5. Explanation of Coefficient Results.

Variable	Surviving Banks				Failed Banks			
	Coeff	Prob	Sign	Sig	Coeff	Prob	Sign	Sig
CAS	-0.050	0.378	Negative	insignificant	0.274	0.045	positive	significant
ECS	-0.078	0.008	Negative	significant	-1.337	0.002	Negative	significant
LS	0.367	0.037	positive	significant	0.108	0.345	positive	insignificant
DL	-0.064	0.202	Negative	insignificant	0.166	0.000	positive	significant
AQ	-7.196	0.001	Negative	significant	2.433	0.745	positive	insignificant

Dependent Variable: Bank Solvency (BSOL)

Independent Variables: CAS (cash assets structure), ECS (equity capital structure), LS (loan structure), DL (deposit liability) and AQ (accrual quality)

Author's Computation (2022)

#### 4.5. Discussion

The result of this study shows that creative accounting practices significantly affect the bank solvency of listed deposit money banks in Nigeria. This is in line with the *a priori* expectation of this study. It was expected that indulgence in creative accounting practices would lead to distorted information, as such, decisions based on the bank's solvency would be misleading. The findings from this study agree with the previous study on Creative accounting

practices and bank solvency. Elaigwu, Audu, and Abdullahi studied the link between creative accounting and a firm's failure in Nigerian financial reporting [19]. Their study found that creative accounting practices have a significant effect on corporate failures in Nigeria and that the major reason for creative accounting in Nigerian corporate organizations was to boost the solvency and market value of shares. Likewise, the studies of Asif, Junaid, Yu & Md and Nangih showed similar findings [9, 23]. It can be seen that both the Surviving Banks and Failed Banks engage in creative accounting. This portends disastrous consequences that may arise from

decisions based on bank solvency alone.

A critical look at the value of the coefficient of multiple determination means that Cash Assets Structure, Deposit Liability, Equity Capital Structure, Loan Structure and Accrual Quality combined contributed up to 25.83% changes in bank solvency for the Surviving Banks and 33% for the Failed Banks. The 25.83% for the Surviving Banks when juxtaposed with 33% for the Failed Banks, it becomes reasonable to suppose that the surviving banks are not far from falling into a failed status if not checked. On individual creative accounting variables, it was found that Cash Assets structure, Deposit Liability, and Equity Capital Structure contributed significantly to the bank solvency of the Failed Banks. The items of Equity Capital Structure, Loan Structure and Accrual Quality showed similar contributions to the Surviving Banks's survival. This implies existing tension on the bank's solvency. Closely related to our findings are the studies by [1, 10] who evaluated the link between creative accounting, corporate governance, firm survival and financial reporting quality. Their studies revealed that creative accounting significantly determines both firms' survival.

However, not all study findings agree with our findings. Some studies' results differ from ours. In this study creative accounting positively affected performance. However, [26, 35] examined creative accounting and a firm's financial performance result and showed that seasonal trading reports have no significant relationship with firm performance indicators such as solvency. Nevertheless, when the variables of Capital Structure are compared, there are similarities to our value in ECS and AQ. Equity Capital Structure combination of equity, shares, and debt played negatively affected bank solvency. The information about this indicator may not have resulted in the bank gaining more investment from investors. Akenbor and Ibanichuka and Tyoakosu and Ekpe empirically assessed the influence of creative accounting on the performance of DMBs in Nigeria from 2007 to 2016 results revealed total accrual do not significantly affect banks' financial performance of Nigeria's DMBs [4, 5, 34]. On the other hand, the study by Ahmed shows that creative accounting significantly enhances smoothing reporting of financial performance measures such as firm solvency which in turn created the long-term failure of firms in Nigeria [3]. The mixed findings in this indicate inconsistencies in reporting. A conclusion supported by Lynch and Ndebugri & Tweneboah [22, 24].

Theoretically, the findings from this study support the survival-based theory by Schumpeter (1934). According to the theory, fierce business rivalry and unethical politics, such as creative accounting or figure manipulation, are permissible under this concept. However, this must be done within the overall strategic management program of the organization. Banks cannot continue with abnormal creative accounting strategies neglecting running efficient operations. Although the environment is always changing, change does not imply creative accounting to the point where banks fail. Banks must come up with an effective way of adapting to their surroundings. Despite the theory's popularity, Analysts

perceive advocates of this line of thought as very limited in terms of their ability to develop, and such development, if it occurs, is less likely to outperform corporations that strive to influence market leaders [29]. However, proponents of this viewpoint believed that selecting a specific technical layout would be inefficient. Rather, it is recommended to investigate many avenues regarding a few processes without delay and let the procedure of the most suited approach be chosen based on the best system that adapts better to the environment [6].

In conclusion, creative accounting practices significantly affect the bank solvency of listed deposit money banks in Nigeria. As competition and the environment change, it does not imply creative accounting to the point where banks fail. The Surviving Banks engage in creative accounting, as well as the Failed Banks. The difference between the failed banks and surviving banks in terms of the contribution of creative accounting is minimal. This shows that further creative accounting by the Surviving Banks may become disastrous. Banks must come up with an effective way of increasing their asset, reducing their liabilities, customer deposit achieving, survival and performance without recourse to creative accounting practices. Cash Assets Structure and Deposit Liability, Equity Capital Structure, Loan Structure and Accrual Quality have a significant effect on bank solvency. Attempts to make a bank survive by employing inventive accounting strategies with the hope that it will increase the banking business's survival is counter-effective going by the result of individual variable considerations and bank failure in this study.

## 5. Conclusion and Recommendations

For the surviving banks, loan structure was identified as having significant positive effect on bank solvency of surviving deposit money banks in Nigeria. Equity capital structure and accrual quality were identified as having significant negative effect on bank solvency while cash assets structure and deposit liability were identified as having insignificant negative effect on bank solvency of surviving deposit money banks in Nigeria. For failed banks, cash assets structure and deposit liability were identified as having significant positive effect on bank solvency of surviving deposit money banks in Nigeria. Loan structure and accrual quality were identified as having positive insignificant effect on bank solvency while equity capital structure has a significant negative effect on bank solvency of surviving deposit money banks in Nigeria. Overall, the proxies of creative accounting were significant to bank solvency, this is reflected in their coefficients and level of significance being below 5%.

The study recommended that as established through this study, bank solvency and liquidity ratios are extremely important as it is one of the metrics of the regulatory authorities. Thus, the deposit money banks should put great efforts at improving on their business activities for increased income and improve on cost of running the banks to improve



profitability. Similarly, the banks can engage in leasing most of their non-current assets while at the same time dispose of some redundancies. In another vein, the statutory regulators should ensure that the cash reserve ratios amongst other controls are at a level not harmful to the economy while focus should be on scrutinizing contingent liabilities and unsubstantiated accruals, thus enhance bank solvency among survived deposit money banks in Nigeria.

## References

- [1] Adámiková, E., & Tatiana, C. (2021). Creative accounting and the possibility of its detection in the evaluation of the company by expert. *Journal of Risk and Financial Management*, 14 (12), 327-339.
- [2] Adegbe, F. F., Salawu, R. O., & Usifoh, O. O. (2019). Auditing Quality and Earnings Persistence in Nigerian Quoted Manufacturing Companies. *International Journal of Research and Innovation in Social Science*, 3 (6), 227-237.
- [3] Ahmed, Y. A. I. (2017). The Impact of Creative Accounting Techniques on the Reliability of Financial Reporting with Particular Reference to Saudi Auditors and Academics: *International Journal of Economics and Financial*, 7 (2), 283-291 ISSN: 2146-4138.
- [4] Ahmed, H. U., Ningi, S. I., & Dalhat, B. S. (2018). Capital Structure and performance of deposit money banks in Nigeria. *NDIC Quarterly*, 33 (3), 49-76.
- [5] Akenbor, C. & Ibanichuka, E. (2012). Creative accounting practices in Nigerian banks. *An International Multidisciplinary Journal, Ethiopia*, 6 (3), 23-34.
- [6] Alozie, C. E. (2018). Sovereign treasury solvency and financial performance management in Nigeria. *Journal of Economics and International Finance*, 10 (7), 77-88.
- [7] Al-Olimat, N. H. & Al Shbail, M. O. (2021). The mediating effect of external audit quality on the relationship between corporate governance and creative accounting. *International Journal of Financial Research*, 12 (1), 149-157.
- [8] Aldasoro, I., & Park, K. (2018). Bank solvency risk and funding cost interactions in a small open economy: evidence from Korea. *BIS Working Paper*, 737-773.
- [9] Asif, M., Junaid, M., Yu, O., & Md, R. (2016). Solution of adapting creative accounting practices: An in-depth perception gap analysis among accountants and auditors of listed companies. *Australian Academy of Accounting and Finance Review*, 2 (2), 166-188.
- [10] Ayunku, P. E., & Uzochukwu, A. (2020). Credit management and issues of bad debts: An empirical study of listed deposit banks in Nigeria. *Asian Journal of Economics, Business and Accounting*, 14 (6), 32-49.
- [11] Balagobei, S. (2020). Accounting practices and organizational performance: evidence from small and medium scale enterprises in Sri Lanka. *Indian Journal of Finance and Banking*, 4 (1), 69-75.
- [12] Bankole, K. O., Ukolobi, I. O., & McDubus, O. F. (2018). Creative accounting practices and shareholders' wealth. *Accounting and Taxation Review*, 2 (4), 58-74.
- [13] Bandta, O., Lecarpentier, S., & Pouvelle, C. (2021). Determinants of banks' liquidity: A French perspective on interactions between market and regulatory requirements. *Journal of Banking & Finance*, 124, 1-18.
- [14] Dang, V. D., & Huynh, J. (2019). *The effects of loan portfolio diversification on Vietnamese banks' return*. In: Kreinovich, V., Thach, N., Trung, N., & Van, T. D. (eds) Beyond Traditional Probabilistic Methods in Economics. ECONVN 2019. Studies in Computational Intelligence. 809. Springer, Cham.
- [15] De-Bandt, O., Lecarpentier, S., & Pouvelle, C. (2020). *Bank solvency, liquidity and financial crisis: what relationship?* banque-france.fr/en/blog-entry/bank-solvency-liquidity-and-financial-crisis-what-relationship
- [16] Doorasamy, M. (2021). Capital structure, firm value and managerial ownership: evidence from East African countries. *Investment Management and Financial Innovations*, 18 (1), 346-356.
- [17] Egolum, P. U. P., & Onoda, B. E. P. (2021). Effect of creative accounting practice on financial reporting in Nigerian deposit money bank. *Journals of Accounting Innovation and Information*, 4 (8), 67-79.
- [18] Ehiriudu, J. A., Ude, G. I., & Ani, M. U. (2020). The effect of creative accounting on the financial performance of deposit money banks in Nigeria from 2008 -2017. *International Journal of Innovative Research & Development*, 9 (2), 202-215.
- [19] Elaigwu, M., Audu, F., & Abdullahi, S. R. (2020). Creative accounting and corporate failure in the Nigerian financial reporting. [/Users/user/Downloads/ELAIGWUMOSSES-ArticleonCreativeAccounting%20\(2\).pdf](#)
- [20] Ezuwore-obodoekwe, C. N. & Elias, I. (2020). Effect of creative accounting practices on the performance of Nigerian banks. *International Journal of Research and Development (IJRD)*, 5 (9), 1-14.
- [21] Isik, I., & Uygur, O. (2021). Financial crises, bank efficiency and survival: Theory, literature and emerging market evidence. *International Review of Economics & Finance*, 76, 952-987.
- [22] Lynch, M. (2000). Against reflexivity as an academic virtue and source of privileged knowledge. *Theory, Culture & Society*, 17 (3), 26-54.
- [23] Nangih, E. (2017). Nexus between creative accounting practices and financial statements quality in Nigeria: A reflection of oil servicing companies in Port Harcourt metropolis. *Journal of Accounting and Financial Management*, 3 (3), 64-71.
- [24] Ndebugri, H., & Tweneboah, S. E. (2018). *Analyzing the critical effect of creative accounting practice in the corporate sector of Ghana*. [file:///C:/Users/user/Downloads/SSRN-id3236965%20\(1\).pdf](#)
- [25] Odo, J., & Ugwu, J. I. (2020). Creative accounting and performance of deposit money banks In Nigeria. *Journal of Accounting Information and Innovation*, 6 (8), 37-47.
- [26] Okoye, E. I., & Obioma, J. N. (2020). Impact of creative accounting techniques on firm financial performance: A study of selected firms in Nigeria. *Journal of Accounting and Financial Management*, 6 (2), 1-14.

- [27] Olojede, P., Iyoha, F., & Egbide, B. (2020). Corporate governance and creative accounting practices in the listed companies in Nigeria. *Academy of Accounting and Financial Studies Journal*, 24 (4), 57-72.
- [28] Oino, I. (2021). Bank solvency: The role of credit and liquidity risks, regulatory capital and economic stability. *Banks and Bank Systems*, 16 (4), 84- 100.
- [29] Raduan, C. R., Jegak, U., Haslinda, A., & Alimin, I. I. (2009). Management, strategic management theories and the linkage with organizational competitive advantage from the resource-based view. *European Journal of Social Sciences*, 11 (3), 402-418.
- [30] Sanusi, B., & Izedonmi, P. F. (2014). Nigerian commercial banks and creative accounting practices. *Journal of Mathematical Finance*, 4, 75-83.
- [31] Seman, N. A. A., Jusoh, N. A. Q., Rashid, U. K., & Ramin, A. K. (2019). An analysis of basic accounting practices of microenterprises. *International Journal of Engineering and Advanced Technology*, 5 (5C), 628-637.
- [32] Siano, P. A. (2016). *Effect of creative accounting practices on long term survival of firms listed at the Kenyan Nairobi securities exchange* (Doctoral dissertation).
- [33] Siyanbola, T. T., Benjamin, R. D., Amuda, M. B., & Lloyd, J. F. (2020). Creative accounting and investment decision in listed manufacturing firms in Nigeria. *Journal of Accounting and Taxation*, 12 (1), 39-47.
- [34] Tyoakosu, S. A & Ekpe, M. J. C. (2018). Effect of creative accounting on the performance of deposit money banks in Nigeria. *Nigerian Journal of Management Sciences*, 6 (2), 212-223.
- [35] Umobong, A. A., & Ironkwe, U. (2017). Creative accounting practices and financial performance of firms. *International Journal of Innovative Finance and Economics Research*, 5 (1), 1-10.
- [36] World Bank Report (2020). Global financial development report 2019 / 2020: Bank regulation and supervision a decade after the global financial crisis. <https://www.worldbank.org/en/publication/gfdr>
- [37] Gupta, R. (2018). Creative accounting practices: A case study of Enron and Satyam scandals. *International Journal of Research and Analytical Reviews*, 5 (4), 238-242.
- [38] Gujarati, D. N., Bernier, B., & Bernier, B. (2004). *Econométrie* (pp. 17-5). Brussels: De Boeck.
- [39] Novickytė, L., & Petraitytė, I. (2013). Assessment of banks asset and liability management: problems and perspectives (case of Lithuania). *Procedia-Social and Behavioral Sciences*, 110, 1082-1093.
- [40] Usifoh, O. O., Adegbe, F. F. & Salawu, R. O. (2019). Audit quality and accrual quality in Nigerian quoted manufacturing firms. *The International Journal of Economic and Administrative Sciences*, 19 (2), 50-63.