# ECONOMIC CRISIS' EFFECTS ON CAPITAL STRUCTURE EVIDENCE FROM A DEVELOPING ECONOMY

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Received: May 21, 2026 Accepted: Jun 18, 2026 Published: Oct 29, 2026

## Abstract

Throughout history, economic crises have had a significant impact on the capital structure of Businessesto sustainably finance their investment and operational capital needs, businesses relyon a bal anced combination of debt and equity.Recent economic crises, such as the COVID19 pandemic and the 2008 Global Financial Crisis (GFC), have made it difficult for businesses to manage t heir capital structures.This study looks at how the capital structures of JSE firms were impacted by two distinct crises,determines which firmlevel elements were important during each era, and evaluates which capital structure theories best explain the responses to the crises.A sampl e of 234 companies listed on the JSE between 2004 and 2022 served as the basis for the analysis.Integr ated RealTime Equity Systems, Thomson Reuters Data Stream, and financial datadepositories provided the secondary firmlevel data.Estimated General Least Squares and random effects regression models were used in the investigation.According to pecking order theory, fir ms deleveraged following the 2008 crisis, and liquidity emerged as the primary (negative) determinant of leverage.Businesses increased their leverage during COVID19. Profitability and growth were inverse ly correlated with leverage, whereas asset tangibility was positively correlated, indicating a mix of peck ing order and trade-off behaviors. Financial crises cause businesses to prioritize internal finances and liquidity (pecking order), whereas operational crise force them to borrow more money from outside sources despite poorer performance (trade-off). When preparing for potential upheavals, this distinction aids policymakers and financial management in emerging markets. This study offers fresh information on how various economic crisis types specifically influence the capital structure choices made by JSE-listed companies. It provides greater insights into crisis-driven financing behavior in an emerging market environment by isolating how firmlevel variables respond under financial vs operational shocks through the use of crisisspecific interaction ter ms over an extended panel (2004–2022).

## Keywords:

**Capital structure, risk management, debt, emerging markets, and economic crises.**

## Introduction

A company's balanced mix of debt and equity financing is referred to as its capital structure (Myers, 1984).A company's financial stability, cost of capital, and survival depend on striking the ideal balance between debt and equity financing, particularly in times of economic crisis (Balios et al. 2016).It is cruc ial to comprehend how economic crises affect capital structure for a number of reasons: it influences im portant choices regarding a company's financial strategy, offers guidance for regulatory policy, and sup ports the financial stability of erratic markets (Campello 2003; Myers 1984; Titman & Wessels 1988).D ue to its direct impact on a firm's value, risk profile, and operational efficiency, capital structure is strat egically significant (Danso & Adomako 2014; Elsas & Florysiak 2008; Kruk 2021; Miller 1958; Modig liani & Miller 1958).Economic crises limit financial flexibility and make it more difficult for businesse s to obtain funding from banks and capital markets (DemirgüçKunt, Martinez Peria & Tressel 2015; Ha rrison & Widjaja 2014). In contrast, enterprises are more financially flexible and aim for optimal debt e quity balances during stable economic conditions.Emerging economies are especially vulnerable to the effects of economic crises on capital structure, according to Mouton and Pelcher (2023), Proazzo, Laur eano, and Laureano (2014), and Ramjee and Gwatidzo (2012). Compared to businesses in developed economies, their capital markets are frequently more volatile and have less buffers.

The impact of economic crises on capital structure has been thoroughly studied in the literature.For exa mple, research on the Asian Financial Crisis (AFC) by Garay (2003) and Jeasakul, Lim, and Lundback (2014) showed how foreign investment outflows and currency devaluations led to high debt levels, whi ch ultimately necessitated major policy changes.Similarly, research on the Global Financial Crisis (GF C) by DemirgüçKunt et al. (2015), Gocmen and Sahin (2014), Proě et al. (2014), and Zarebski and Dim ovski (2012) revealed that the crisis caused major changes in business financing practices due to decrea sed debt availability and increased borrowing costs.More recently, research by Deviyant et al. (2023), Huang and Ye (2021), and Shen et al. (2021) looked at how the COVID19 pandemic affected capital str ucture and found that businesses relied on shortterm debt to finance working capital due to lower growt h rates, profitability, and liquidity.Nevertheless, there is still a void in the research because it mostly ex amines economic crises in developed markets separately.Furthermore, there are few studies that compar e the effects of two distinct economic crises on capital structure, the internal company,
related factors that influence capital structure decisions, and the capital structure theories that businesss adopted during the two economic crises, particularly in emerging markets.
Using a sample of Johannesburg Stock Exchange (JSE)listed companies from 2004 to 2022, this study examines the financing behavior of firms during two different economic crises. The objective is to inve stigate the leverage responses of JSE-listed companies during the 2008 GFC and the COVID-19 pandemic (using debt-to equity ratios as a proxy for capital structure), link the observed effects with the pertinent and competingcapital structure theories (pecking order, tradeoff, and agency costs) a nd determine which internal firm-related factors were most important during each crisis period. The primary goals of this study were to determine which internal firm-related factors (profitability, liquidity, company growth rate, taxation, tangibility, size, and risk) were significant predictors during each crisis period; to assess and compare the pertinent capital structure theories that were applied during each crisis period; and to analyze and compare the impact that the 2008 GFC and COVID-19 pandemic had on the capital structure of JSE-listed companies by investigating the various levels and magnitude of leverage adjustments for both periods. This analysis fills this gap in the literature by comparing the effects of two distinct economic crises on capital structure in an emerging market, identi fying whether comparable or dissimilar company-related elements or capital structure determinants were important during both economic crises; and investigating whether firms' financing choices used comparable or dissimilar capital structure theories during both economic crisis eras and investigating whether firms' financing choices used comparable or dissimilar capital structure theories during listed companies represented serve as a proxy for other emerging markets with comparable economic conditions and trends, this study contributes to the financial and business knowledge for com panies operating in emerging markets and could be very helpful for potential investors and the future ec

onomic prospects of developing nations, particularly during economic crises.

## Literature Review

Capital structure foundational theories Modigliani–Miller theory

Developed in the late 1950s, the ModiglianiMiller hypothesis by Modigliani and Miller (1958) has gro wn to be a significant topic of reference in corporate finance.
Modigliani and Miller (1958) asserted that a company's capital structure has no bearing on its worth. All capital structure approaches will eventually produce the same outcome, according to Modigliani an d Miller's (1958) theory that a company's value is exclusively determined by its cash flows, risk profile, and investment prospects.However, because market conditions are extremely imperfect during econom ic crises, assumptions related to the MM theorysuch as bankruptcy costs, perfect market conditions, an information asymmetry,become more extreme, making capital structure decisions more crucial for a firm's survival (Glen & Pinto 1994). Trade-off theory to balance the advantages and disadvantages of capital structure components, the Trade-off Theory was developed (Ju et al. 2005). According to this approach, businesses should weigh the tax advantages of debt financing against the expenses of bankruptcy and financial hardship (Harris & Raviv 1991).However, because of decreased profitability d uring economic downturns, the likelihood of financial distress rises while the benefits of tax shields dec rease (Günay 2002).Furthermore, according to the tradeoff theory, there is a positive correlation betwee n profitability and an ideal leverage ratio, and businesses should identify and maintain an ideal debt lev el to maximize their value (Ju et al. 2005). However, Hay (2002) emphasizes how difficult it is to achieve ideal leverage ratios in developing markets because less profitable firms find it more difficult to obtain financing from the debt and equity markets due to the restrictive covenants imposed during economic crises, while highly profitable firms tend to deleverage and choose internal financing.

## Pecking order theory

In opposition to the tradeoff hypothesis, the Pecking Order hypothesis contends that in order to reduce t he financial risks associated with overweighted debt financing arrangements, businesses should instead seek for the most economical source of capital financing (Chen & Chen 2011; Myers 1984).Additionall y, according to the pecking order theory, companies should prefer internal financing over external finan cing due to the understanding and communication between managers and outside investors. This is beca use companies want to avoid the negative effects of a potential decline in stock price caused by the rele ase of negative economic information (Pro Rodríguez et al. 2014).However, information asymmetry ten ds to worsen during economic downturns, leading to increased reliance on internal finances and higher expenses associated with external funding (Chatzinas & Papadopoulos 2018).Additionally, businesses may be compelled to disregard the hierarchy and accept diluted equity funding or higher debt servicing costs in order to survive when internal funds begin to run low (for example, during the COVID-19 pandemic lockdown phase) (Chatzinas & Papadopoulos 2018).Additionally, whether the crisis predo minantly affects a firm's capacity to earn cash (operational impact) or the availability of external financ ing sources (financial impact) determines how well the pecking theory predicts economic crises (Jansen et al. 2022). The agency cost theory According to the Agency Cost Theory, businesses can lower agency costs resulting from conflicts of interest between shareholders and corporate managers b y using debt financing (Kochhar 1996).
In order to minimize opportunistic behavior and lower agency costs, the agency cost theory requires that shareholders adhere to stringent supervision and disciplined structures of everyday corporate operational activities (Correia 2019; Kochhar 1996).

## Predictions from foundational theory for every economic crisis.

In contrast to the pecking order targeted leverage ratios, the target leverage ratio assumption of the Trade,off theory was less significant during the 2008 Great Financial Crisis due to banks cutting back o n credit, which limited availability to funding (Benmelech & Bergman 2018).Debtholders invoking cov enants and requesting more collateral also exacerbated agency problems (Smith 2010).
Global trade was severely constrained during the COVID19 epidemic, forcing many businesses to halt operations.During the lockdown, businesses faced cash flow restrictions and declining liquidity levels ( Mouton & Pelcher, 2023).In this case, the pecking order theory takes into account that enterprises may be forced to expand leverage regardless of preferences, while the tradeoff theory assumes that firms sho uld lower debt if business risk increases.Furthermore, when managers prioritize operational choices ove r financial restructuring, agency problems could occur (Lazarus et al. 2024; Mbatha & Alovokpinhou 2 022).theory's significance for financial limitations (Iqbal & Kume, 2014).Banks drastically decreased th eir risk appetite, making it harder for businesses to obtain loans.Additionally, bond markets froze and s hare prices sharply declined, requiring businesses to rely more on internal funding regardless of their st arting Changes in the capital structure and economic crises Evidence from financial crises Currency devaluations can convert manageable foreign currency debt into manageable obligations, as d emonstrated by the 1997 AFC (Deesomsak, Paudyal & Pescetto 2004).
Currency devaluations, abrupt withdrawals of foreign investment capital, and general economic unrest all had a detrimental effect on the Asian economy (Garay 2003; Jeasakul et al. 2014).Asian enterprises deleveraged significantly during the crisis, according to Deesomsak et al. (2004) and Garay (2003), alth ough the speed of adjustments differed mostly due to institutional variables unique to each country.Mor eover, enterprises operating in countries with better creditor rights and developed bond markets display ed greater financial flexibility (Deesomsak et al. 2004).

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Hypothesis following assumptions were produced by our study based on the theoretical frameworks an d empirical data provided in the literature review:

H1: We anticipate that the capital structure of JSElisted companies will be affected differentially by the 2008 GFC and the COVID-19 pandemic.

H2: During the COVID19 pandemic and the 2008 Great Financial Crisis, we anticipate distinct internal firm-related characteristics or capital structure determinants.

H3:Weexpectthatdifferentcapitalstructuretheoriesbeappliedduringthe2008GFCandCOVID-19pandemicbyJSE-listedfirms.

## Methodology

Methods Research design and approach In order to examine the theories of how economic crises affected the capital structure of JSE-listed companies, this study used quantitative methodologies in accordancewith a positivistresearch strategy.Panel datawas employed in the research design to take advantage of cross-sectional (firmlevel) and time series (period) variations.This allowed for a robust identificationof the effects of economic crises while also controlling for general temporal trends and firmspecific characteristics (Deesomsaket al).2004; Tripathy & Asija 2017; Demirgüç-Kuntetal. 2015).

## Research sample and data collection

Financial data from Thomson Reuters Data Stream and Integrated Real-Time Equity Systems (IRESS) for the 234 companies listed on the JSE between 2004 and 2022 comprised the final s ample size for this study, yielding 24728 total valid values and 13576 missing values for all variables o ver the whole period.The time periods listed below were utilized All firms listed on the JSE between 20 04 and 2022 are included in this timeframe. The 19-year span contains both crisis periods, post-crisis recovery phases, and enough pre-crisis observations to establish baseline associations. 2008:2009:

The Great Financial Crisis (GFC); according to Mouton and Smith (2016), the crisis period begins with the Bear Stearns collapse in March 2008 and lasts until 2009 to fully encompass the disruption of the credit market and the South African economy's shrinkage.The COVID19 pandemic; the time frame fro m January 1, 2020, to December 31, 2021, was calculated based on lockdown restrictions that were in p lace during that time.20202021: The COVID19 pandemic; the time frame from January 1, 2020, to Dec ember 31, 2021, was calculated based on lockdown restrictions that were in place during that time.

Like Ahmed et al. (2024), we used feasible GLS with autoregressive AR(1) disturbances to address aut ocorrelation while preserving the structure of the random effect.
This method works especially well in unbalanced panels with firm-specific effects that are present but uncorrelated with the explanatory factors.The GLS regression mode l maintained efficiency while addressing autocorrelation and heteroskedasticity.
Given that the persistence is frequently found in capital structure, the correction for autoregressive AR( 1) errors is crucial.

**TABLE1:**Descriptivestatisticsfrom2004to2022.

| Variable | DE | ROA | CR | IC | CGR | TR | TAX | TATT |
|---|---|---|---|---|---|---|---|---|
| Valid | 3680 | 3732 | 3727 | 3574 | 3158 | 3310 | 3547 | 3309 |
| Missing | 1792 | 1740 | 1745 | 1898 | 2314 | 2162 | 1925 | 2163 |
| Mean | 1.6028 | 8.2129 | 1.9439 | 16.9308 | 11.6098 | 15132720.41 | 573752.71 | 1.1458 |
| Median | 0.7856 | 8.2336 | 1.4235 | 4.1002 | 8.6403 | 3603782.87 | 86517.23 | 0.8967 |
| Std.deviation | 2.2925 | 12.3943 | 1.6118 | 37.7146 | 21.2682 | 25236971.86 | 1174778.35 | 1.0796 |
| Skewness(S) | 2.6064 | -0.2495 | 1.7985 | 2.6703 | 0.8660 | 2.1725 | 2.6676 | 1.7152 |
| Std.errorof(S ) | 0.0404 | 0.0401 | 0.0401 | 0.0410 | 0.0436 | 0.0426 | 0.0411 | 0.0426 |
| Kurtosis(K) | 6.1675 | 0.1875 | 2.7417 | 6.3670 | 0.9064 | 3.7260 | 6.0839 | 4.0509 |
| Std.errorof(K ) | 0.0807 | 0.0801 | 0.0802 | 0.0819 | 0.0871 | 0.0851 | 0.0822 | 0.0851 |
| Minimum | 0.0548 | -20.9258 | 0.2854 | -14.7152 | -24.5686 | 48383.00 | -25014.40 | 0.0001 |
| Maximum | 9.7342 | 32.0581 | 6.8779 | 150.8922 | 67.5605 | 95421134.93 | 4686000.00 | 8.1035 |
| 1 Percentile | 0.0548 | -20.9258 | 0.2854 | -14.7152 | -24.5686 | 48383.00 | -25014.40 | 0.0065 |
| 5 Percentile | 0.0549 | -20.9233 | 0.2858 | -14.7145 | -24.5619 | 48449.60 | -25005.04 | 0.0567 |
| 95 Percentile | 9.7290 | 32.0558 | 6.8747 | 150.8480 | 67.5577 | 95403150.65 | 4675200.00 | 3.3538 |
| 99 Percentile | 9.7342 | 32.0581 | 6.8779 | 150.8922 | 67.5605 | 95421134.93 | 4686000.00 | 4.9503 |

DE,debt-to-equityratio;ROA,returnonassets;CR,currentratio;IC,interestcoverage;CGR,companygrowthrate;TR,total revenue;TAX,taxation;TATT,tangibility.

**TABLE2:**GeneralisedleastsquaresregressionModel1( M1).

| Variable | Coefficient | Prob. |
|---|---|---|
| C | 1.226806 | 0.0000 |
| ***Z(ROA) | -0.262446 | 0.0000 |
| Z(IC) | 0.011574 | 0.6328 |
| ***Z(CR) | -0.342076 | 0.0000 |

| | | |
|---|---|---|
| ***Z(CGR) | 0.046975 | 0.0048 |
| **Z(TAX) | 0.096321 | 0.0552 |
| Z(TATT) | 0.008652 | 0.8094 |
| *Z(TR) | 0.104389 | 0.0715 |
| ***DUMMY(DURINGGFC) | 0.220180 | 0.0030 |
| **INT(GFC) (CR) | -0.193336 | 0.0204 |
| INT(GFC) (IC) | -0.055473 | 0.4486 |
| INT(GFC)(CGR) | 0.056307 | 0.1944 |
| INT(GFC)(ROA) | -0.070220 | 0.3325 |
| INTGFCTATT | 0.030966 | 0.6370 |
| INT(GFC)(TAX) | 0.020253 | 0.8605 |
| INT(GFC) (TR) | -0.149067 | 0.2150 |
| ***DUMMY(DURINGCOV) | 0.228047 | 0.0036 |
| INT(COV)(CR) | -0.067411 | 0.3673 |
| INT(COV)(IC) | 0.152573 | 0.1382 |
| ***INT(COV)(CGR) | -0.135795 | 0.0168 |
| *INT(COV)(ROA) | -0.137354 | 0.0832 |
| *INTCOV(TATT) | 0.149869 | 0.0982 |
| INT(COV)(TAX) | -0.031686 | 0.7426 |
| INT(COV)(TR) | 0.039283 | 0.6533 |
| *R*-squared | - | 0.111190 |
| Adjusted*R*-squared | - | 0.104258 |
| *F*-statistic | - | 16.04002 |
| Durbin-Watsonstat | - | 1.534901 |
| Prob(*F*-statistic) | - | 0.000000 |

***,99%; **,95%; *, 90%.
ROA,returnonassets;CR,currentratio;IC,interestcoverage;CGR,companygrowthrate;TR,totalrevenue;TAX,taxation;TATT,tangibility;INT,interactionterm;GFC,globalfinancialcrisis;C,constantorinterceptcoefficient.

Multicollinearity: Variance inflation factor (VIF) was used to measure multicollinearity.Despite a high correlation between TAX and TR (0.789), none of the variables showed multicollinearity using the VIF threshold of 10, and the VIFs stayed below 10, indicating that multicollinearity did not significantly skew the estimates.

**Table 3 : 2008Global Financial crisis regression=Model2(M2)**

| **Variable** | **Coefficiency** | **Prob.** |
|---|---|---|
| C | 1.242939 | 0.0000 |
| ***Z(ROA) | -0.284682 | 0.0000 |
| Z(IC) | 0.018106 | 0.4532 |
| ***Z(CR) | -0.351333 | 0.0000 |
| *Z(CGR) | 0.027740 | 0.0808 |
| *Z(TAX) | 0.081247 | 0.0844 |
| Z(TATT) | 0.004254 | 0.9054 |
| **Z(TR) | 0.112520 | 0.0442 |
| ***DUMMY(DURINGGFC) | 0.211278 | 0.0041 |
| **INT(GFC) (CR) | -0.180342 | 0.0296 |
| INT(GFC) (IC) | -0.061145 | 0.4015 |
| *INT(GF)(CGR) | 0.077305 | 0.0721 |
| INT(GFC)(ROA) | -0.054406 | 0.4498 |
| INT(GFC)(TATT) | 0.035282 | 0.5883 |
| INT(GFC)(TAX) | 0.028797 | 0.8006 |
| INT(GFC) (TR) | -0.151050 | 0.2044 |

| | | |
|---|---|---|
| *R*-squared | - | 0.103572 |
| Adjusted*R*-squared | - | 0.099025 |
| *F*-statistic | - | 22.77661 |
| Durbin-Watsonstat | - | 1.542168 |
| Prob(*F*-statistic) | - | 0.000000 |

***,99%; **,95%; *, 90%.

ROA,returnonassets;CR,currentratio;IC,interestcoverage;CGR,companygrowthrate;TR,totalrevenue;TAX,Taxation;TATT,Tangibility;INT,interactionterm;GFC,globalfinancialcrisis;C,constantorinterceptcoefficient.

Results from a sensitivity study that does not include taxes are qualitatively comparable (Field 2013). Outliers: Given persistent skewness, the initial descriptive statistics in Appendix 2 (Table 1-A2) were winsorized using 1% and 99% winsorization, which turned out to be insufficient.While maintaining crisisperiod variance, final 5% and 95% winsorization (Table 1) lessened the impact of severe observations (Singh, Wahi & Kapur 2022). Autocorrelation: Post-estimation Durbin-Watson values in Tables 2, 3, and 4 (1.53–1.54) fall within acceptable ranges (1.5–2.5), indicating that serial correlation is sufficiently addressed by the GLS correction (Field 2013). ModelFit: All models have highly significant ($p<0.001$) F-statistics (Table 2–Table 4), despite R-squared values.

**TABLE4:** TheCOVID-19regression–Model3(M3).

| Variable | Coefficiency | Prob. |
|---|---|---|
| C | 1.244050 | 0.0000 |
| ***Z(ROA) | -0.267511 | 0.0000 |
| Z(IC) | 0.004690 | 0.8430 |
| ***Z(CR) | -0.360787 | 0.0000 |
| ***Z(CGR) | 0.059484 | 0.0001 |
| **Z(TAX) | 0.097579 | 0.0410 |
| Z(TATT) | 0.014391 | 0.6823 |
| Z(TR) | 0.091886 | 0.1034 |
| ***DUMMY(DURINGCOV) | 0.212573 | 0.0069 |
| INT(COV)(CR) | -0.059130 | 0.4295 |
| INT(COV)(IC) | 0.147171 | 0.1527 |
| ***INT(COV)(CGR) | -0.146705 | 0.0092 |
| *INT(COV)(ROA) | -0.130761 | 0.0979 |
| INT(COV)(TATT) | 0.142850 | 0.1156 |
| INT(COV)(TAX) | -0.034993 | 0.7155 |
| INT(COV)(TR) | 0.043340 | 0.6193 |
| *R*-squared | - | 0.106694 |
| Adjusted*R*-squared | - | 0.102163 |
| *F*-statistic | - | 23.54509 |
| Durbin-Watsonstat | - | 1.536053 |
| Prob(*F*-statistic) | - | 0.000000 |

***,99%; **,95%; *, 90%.
ROA, return on assets; CR, current ratio; IC, interest coverage; CGR, company growth rate;TR,totalrevenue;TAX,taxation;TATT,tangibility;INT,interactionterm;GFC,globalfinancialcrisis; C, constant or intercept coefficient.

(10%16%) indicate significant unexplained variation, which is typical in capital structure research given unobserved factors like market timing and management quality.

## Interpretation of the interaction terms and the coefficient framework

The structured technique used in the coefficient interpretation comprises:

The association between capital structure determinants and debt-to-equity ratios during times of non-economic crises is represented by Maineffects (β). The average shift and change in debt-to-equity ratios during each economic crisis episode was captured by crisis dummies (γ).
Interaction effects (θ): Assessed each capital structure determinant's impact and significance as well as how it shifts with each economic crisis.The economic crisis changed the relationship between that capital structure determinant and debt-to-equity ratios, according to a substantial interaction term.
Whether the crisis reinforced, diminished, or reversed the normal relationship is indicated by the sign and magnitude.Furthermore, our analysis concentrated on static leverage levels during each economic crisis, in contrast to dynamic panel models that calculate a "speed of adjustment" to target leverage.
Instead of modeling the dynamics of how quickly enterprises return to a desired debt ratio, our research examined the changes in observed debt-to-equity ratios between crisis and non-crisis periods.
This decision is consistent with several capital structure studies that consider leverage at the dependent level.Therefore, without enforcing a target adjustment procedure, which would necessitate lagged dependent variables and generalized method of moments (GMM) approaches, the regression coefficients represented how capital structure levels varied with company characteristics and crisis indicators.

## Results Descriptive analysis

With a mean of 1.603 and a median of 0.786, the descriptive statistics shown in Table 1 show that the leverage (DE) ratio showed significant variation. Furthermore, a subgroup of highly leveraged JSE-listed companies during the time is shown by the positive skewness.The distribution appears to have a large right tail, consistent with a few number of companies sustaining extremely high leverage ratios, according to the gap between the mean and median.Profitability (ROA) has a negative skewness and fair range, suggesting that some businesses suffered losses.The liquidity ratio (CR) shows positive skewness, indicating that while some businesses have excessive current assets, the majority of businesses maintain reasonable liquidity.Few firms have exceptionally high coverage ratios, as evidenced by the extreme positive skewness and kurtosis of interest coverage (IC).

H1:According to Figure 1's trends, mean DE decreased from 1.838 (2007) to 1.725 (2009) during the 2008 GFC, showing a 6.2% deleveraging.Concurrently, the mean CR rose from 1.944 in 2007 to 2.087 in 2009, suggesting that JSE-listed companies were hoarding liquidity.
The company's growth rate dropped dramatically from 23.21% in 2008 to 7.87% in 2009.The COVID-19 pandemic patterns, however, varied greatly.
Before falling to 1.727 (2021), the mean DE rose from 1.406 (2019) to 1.777 (2020), showing a 26.4% rise in leverage.Additionally, profitability ROA fell from 4.219 in 2019 to 2.239 in 2020 before rising to 7.317 in 2021. A similar V shaped pattern was seen in the company growth rate, which was 9.39% in 2019, 2.01% in 2020, and 6.32% in 2021. These trends point to JSE-listed companies responding to economic crises in fundamentally different ways. In contrast to a dramatic rise in leverage followed by a partial reversal during the COVID-19 pandemic, they show steady deleveraging during the 2008 GFC.

H2: During the 2008 global financial crisis and the COVID-19 pandemic, we anticipate distinct internal firm-related factors or capital structure determinants.
Only the liquidity interaction INT(GFC) (CR) was significant during the 2008 GFC: β=−0.193, p=0.020 (M1); β=−0.180, p = 0.030 (M2), suggesting that liquidity was the primary factor influencing capital structure.A cautious attitude to leverage and pecking order theory is indicated by the negative coefficient, which implies that liquid JSE-listed companies deleveraged more aggressively.Growing JSE-listed companies may have retained substantially higher leverage positions due to pre-crisis obligations, as indicated by the marginally significant interaction with growth INT(GFC)(CGR) in Table 3 (M3) (β = 0.077, p = 0.072).Several capital structure determinants showed significant interactions during the COVID-19 pandemic: INT(COV)(CGR)results–β=−0.136,p=0.020(M1); β = −0.147, p = 0.009 (M3) - show that JSE listed companies with dropping growth levels increased

leverage, indicating borrowing in desperation.The moderately significant INT(COV)(ROA) results (β = −0.137, p = 0.083 (M1); β = −0.131, p = 0.098 (M3)) indicate that less profitable JSE-listed companies borrowed more, which defies the traditional pecking order assumptions.
Furthermore, the INT(COV)(TATT) results' moderate significance (β = 0.143, p = 0.098 (M1)) indicates that JSE-listed companies with more physical assets used them as collateral.
Despite traditional financial restraints and a generally conservative strategy compared to the 2008 GFC, the COVID19 epidemic pattern shows that operational difficulties increased the funding demands of JSE-listed enterprises.
Hypotheses 3 H3: We anticipate that companies listed on the Johannesburg Stock Exchange would apply various capital structure theories throughout the 2008 global financial crisis and the COVID-19 pandemic.The pecking order idea is supported by the 2008 financial crisis.It appears that JSE-listed companies prioritized internal funds based on the large negative interaction with liquidity and the minor influence of profitability.Furthermore, when faced with significant financing constraints, deleveraging despite a positive crisis dummy suggests limited quantity and constraints within the debt markets, pushing enterprises to rely on internal finances, which is consistent with pecking order theory.
On the other hand, a variety of capital structure ideas were supported by the COVID-19 epidemic.The negativeinteraction trade-off theory between expansion and profitability, whereby JSE-listed companies increased leverage to balance the necessity for survival. However, the depletion of internal funds prior to borrowing also implies considerably lower borrowing costs, as SARB significantly lowered rates during this time or pecking order constraints.Both hypotheses are supported by the tangibility effect, which offers collateral (trade-off) and permits borrowing when internal funds begin to run out (pecking order). Discussion

Discussion of Findings
Interpretation of the different crisis responses The disparate capital structure changes that occurred during the COVID19 epidemic and the 2008 Great Financial Crisis highlight important distinctions between the two economic crises and their effects on company financing.
The pecking order theory is highly supported by this tendency.Businesses listed on the Johannesburg Stock Exchange were forced to rely on internal capital since they were unable to obtain external finance at acceptable pricing.Furthermore, the negligible correlation with profitability indicates that even the more successful companies experienced credit restriction since they had trouble converting their profits capacity into borrowing capacity.The rate at which businesses could produce internal money to pay down debt is reflected in the slow deleveraging witnessed (6.2% over two years).This trend indicates controlled adjustment within extreme restrictions, in contrast to abrupt leverage through distressed asset sales or emergency equity issuance.Furthermore, after adjusting for fundamentals, the positive crisis dummy coefficient shows that JSElisted companies would have leveraged more aggressively if it had been possible, but they were limited by their access to the equity market and their desire to continue operating.Normal periods: Businesses express preferences within their possibilities, according to conventional ideas.Other emerging markets may learn more from studying JSE-listed companies.
Currency exposure problems due to the depreciation of the South African Rand (ZAR) during crises, which results in increased foreign debt burdens; institutional weaknesses due to slower policy responses and weaker creditor protection; and information opacity because greater information asymmetry exacerbates market dysfunction are all factors that make emerging markets more vulnerable to the effects of crises.These elements account for the fact that during both crises, South African businesses made more drastic modifications than their counterparts in developed markets.Since the premium on cash reserves exceeds developed market norms, emerging market enterprises must maintain higher base liquidity in order to navigate economic crises successfully.In the event of a financial crisis, diversifying financial sources due to an excessive reliance on bank lending could be deadly.The effects of a crisis are exacerbated by matching currency exposure due to foreign currency debt.Because tangible assets offer vital financing flexibility, it is advantageous to build businesses with greater collateral buffers.The organizations that weathered the storm of both crises effectively demonstrated these traits prior to the

crisis period because crisis management begins with pre-crisis preparedness.

## Conclusion

In the context of emerging markets, this study offers the first methodical assessment of the effects of fu ndamentally distinct economic crises on capital structure. By looking at JSE-listed companies during the COVID19 epidemic and the 2008 Great Financial Crisis, we find unique ad justment patterns that call into question general applications of capital structure theories.

The results of this study's comparison research clarified and offered insights into how two economic cri ses presented distinct market and economic conditions from both a macro and micro perspective, as wel l as the various dangers connected to each economic crisis. According to our research, JSE-listed companies' cautious deleveraging practices were prompted by credit supply limits during the 200 8 Great Financial Crisis.The pecking order argument is supported by the emergence of liquidity as the p rimary predictor of capital structure as liquid businesses aggressively cut debt levels; nonetheless, liqui dity functioned as a binding constraint rather than a preference.The rate at which internal funds functio n as a substitute funding source in the event that access to external finance is limited is reflected in the 6.2% progressive deleveraging.Contrasting dynamics resulted from the COVID19 pandemic, with enter prises increasing debt by 26.4% primarily due to operational breakdowns rather than financial restrictio ns.As businesses with lower performance levels borrowed more, profitability and growth emerged as i mportant negative predictors of capital structure. Furthermore, this result is consistent with survival-focused trade-off considerations while defying conventional pecking order theory assumptions.

The subsequent partial deleveraging in 2021, which implies that crisis borrowing rather than structural r ecapitalization was the driving force, further supports this.By showing that financial crises and operatio nal crises cause fundamentally distinct financing responses that call for various capital theoretical appro aches, these findings add to the current theories of capital structure.Static optimization models give wa y to survivalfocused adaptation, and successful businesses are those that retain the adaptability to chang e tactics when crisis features emerge.

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