

Capital Structure - Firm Performance Nexus: A Systematic Review amid the COVID-19 Crisis

Abstract

The COVID-19 pandemic created unprecedented challenges for firms globally, disrupting liquidity, profitability, and financial stability. This systematic review synthesizes empirical evidence on the relationship between capital structure decisions, firm performance, and resilience during the pandemic across diverse sectors and regions. Using a qualitative synthesis guided by PRISMA principles, the review draws on studies published between 2020 and 2025 from leading journals accessed via Google Scholar. The selected studies were based on various emerging and developed markets. Findings show that excessive leverage consistently weakened performance by escalating debt-servicing burdens, liquidity pressures, and profitability declines. Conversely, firms with balanced or conservative capital structures demonstrated greater stability, supported by access to equity markets and government interventions. Sectoral heterogeneity was evident, wherein hospitality and service industries experienced heightened solvency risks, while IT and healthcare exhibited mixed resilience due to shifting demand conditions. Geographic disparities further revealed that emerging markets, constrained by underdeveloped capital systems, were more vulnerable. Overall, the pandemic functioned as a stress test, underscoring the importance of prudent leverage management and adaptive financing strategies.

Keywords:

Capital Structure, Emerging Markets, Developed Markets, Firm Performance, Systematic Review.

1. Introduction

The COVID-19 pandemic (2020 - 2022) disrupted global financial markets and corporate operations, creating widespread uncertainty. The pandemic created an unprecedented environment where sudden market volatility, supply chain disruptions, and shifts in consumer demand challenged traditional determinants of capital structure. Firms were compelled to reassess debt levels, liquidity reserves, and equity financing strategies to withstand operational and financial shocks. This period also highlighted the importance of managerial agility in capital decisions, as well as the role of external support, such as government stimulus and financial market interventions, in mitigating distress. By examining cross-country and cross-sector evidence, this review provides insights into how capital structure choices influenced firm performance and resilience. Firms were forced to navigate sudden revenue declines, operational interruptions, and liquidity constraints, all while adjusting capital structures to maintain survival and performance.

Capital structure, defined as the combination of debt and equity financing, plays a pivotal role in determining a firm's financial flexibility and risk profile (Chandra, 2015). While pre-pandemic literature on capital structure largely focused on the traditional aspects of corporate finance like the capital structure theories, how they impact the firm performance, and the firm-level determinants of leverage, the pandemic introduced a new aspect of studying and incorporating the exogenous shocks that affected financing behavior globally. Understanding how firms adjusted debt and equity financing, and how these adjustments impacted performance, is essential for informing both corporate strategy and policy interventions in future crises. This systematic review synthesizes empirical studies examining the relationship between capital structure and firm performance during COVID-19, with a particular focus on:

- a. The effect of leverage on financial resilience and profitability.
- b. Sector-specific responses and vulnerabilities.
- c. Differences in financing behavior between SMEs and larger firms.
- d. Regional heterogeneity, including emerging vs. developed markets.
- e. The role of policy interventions in moderating financial outcomes.

2. Methodology

2.1. Selection Criteria for Literature Search

A comprehensive literature search was conducted using academic databases and the most reputable journals via Google Scholar. Keywords included “capital structure,” “firm performance,” “COVID-19,” “leverage,” “financial resilience,” “emerging markets,” and sector-specific terms such as “hospitality,” “IT,” and “consumer goods.”

Studies were included if:

- a. They examined the relationship between capital structure (debt-equity mix) and firm performance during or immediately following the COVID-19 pandemic.
- b. They utilized empirical data from firms, sectors, or financial markets.
- c. They were published in peer-reviewed journals, working papers, or reputable research outlets between 2020 and 2025.

The initial query identified numerous papers, from which 87 papers were screened in detail, but 11 papers were excluded as they did not fit the scope of this research work. The remaining papers were assessed for eligibility. After reassessing the papers based on the empirical focus, capital structure and firm performance linkage, the pandemic timeframe, and keyword eligibility, 26 studies were retained for this analysis.

2.2. Data Synthesis from Systematic Review

For each study, the following information was extracted: authors, year, country/context, methodology, sample/data period, key findings, and contributions. A PRISMA-style summary table is also prepared to facilitate comparison of study characteristics, findings, and implications, following a detailed discussion of the papers from the existing literature. It also highlights the risk of bias associated with each study and can be understood as follows:

- a. Low Risk: Larger datasets, clear panel regressions, or cross-country designs with controls.
- b. Medium Risk: Reasonable methods (survey, case, Data Envelopment Analysis, descriptive analysis) but with possible size or scope limitations.
- c. High Risk: Limited methodological details, narrow sample, or descriptive-only without controls.

2.3. *Analytical Approach*

Given the heterogeneity of methodologies (panel regression, Data Envelopment Analysis, or DEA, Generalized AutoRegressive Conditional Heteroskedasticity, or GARCH, and event studies), a narrative synthesis was employed. Findings were organized by themes: firm size, sector, country context, capital structure adjustments, and policy interventions. Patterns, divergences, and gaps in the literature were analyzed to draw insights into best practices and future research directions.

3. Results

3.1. *Systematic Analysis of the Literature*

(Gur et al., 2023) investigates how small and medium-sized enterprises (SMEs) adjusted their financing strategies during the pandemic. Using survey data collected from SMEs in Istanbul, the study highlights that firm size significantly influenced access to credit and the choice of financing sources during the COVID-19 crisis. Smaller firms faced greater liquidity constraints, limited bargaining power with financial institutions, and were more dependent on informal financing channels such as trade credit and personal networks. In contrast, relatively larger SMEs had better access to bank loans and government-backed financial support schemes. The findings suggested that the pandemic exacerbated financing inequalities among SMEs, with micro and small enterprises experiencing disproportionate financial distress. This study contributes to the broader discourse on capital structure and firm performance during crises by showing how firm size moderates financing behavior under exogenous shocks like COVID-19. It underscores the vulnerability of smaller firms in emerging economies and emphasizes the need for targeted policy interventions to improve financial resilience.

How the COVID-19 crisis influenced the relationship between capital structure and corporate financial performance was examined by (Jasiniak & Rudzki, 2023). The study analyzed selected companies, focusing on their debt–equity mix and financial indicators during the pandemic period. The results show that firms with higher leverage experienced greater financial vulnerability, including increased solvency risk and reduced profitability, as the pandemic amplified repayment pressures and limited access to new financing. Conversely, companies with a more balanced or conservative capital structure demonstrated greater resilience, maintaining liquidity and financial stability despite market disruptions. This study

contributes to crisis-focused capital structure research by illustrating how leverage levels shaped corporate survival and adaptability during COVID-19. It emphasized the heightened risks of over-reliance on debt financing in periods of systemic shock and supports the argument for adopting more flexible, sustainable financing policies to safeguard firms against unforeseen economic crises.

A study titled “Evaluation of the Effect of the COVID-19 Pandemic on the Financial Performances of Information Technology Sector Companies Traded on Borsa Istanbul with Data Envelopment Analysis” (Eryiğit & Polat, n.d.) investigated how the pandemic influenced firm performance in Turkey’s IT sector. Using Data Envelopment Analysis (DEA) on financial indicators of listed IT companies, the study measures relative efficiency before and during the pandemic. The results indicated that while some firms sustained or improved efficiency due to rising demand for digital services, others faced performance declines linked to disrupted operations, supply chain constraints, and financing difficulties. The analysis highlights heterogeneity in financial resilience across firms, with efficiency outcomes strongly influenced by differences in cost structures and capital allocation strategies. This study also contributes to the crisis-performance literature by applying DEA to capture efficiency changes in a sector that both benefited from and was challenged by COVID-19. It shows that sector-specific dynamics - such as accelerated digital transformation - can partially offset financial vulnerabilities. The findings suggest that capital structure flexibility and operational efficiency are critical determinants of firm performance in turbulent environments.

(Widodo et al., 2024) examined whether and how the pandemic altered financing decisions within the healthcare industry. Using financial data from listed healthcare firms, the study analyzes shifts in leverage ratios and equity financing during the crisis. The findings suggest that the pandemic had a mixed impact: while demand for healthcare services and investor interest supported equity issuance and market capitalization growth, firms also faced rising operational costs and uncertain cash flows that led to cautious debt management. Overall, healthcare firms exhibited moderate adjustments in capital structure, balancing between seizing growth opportunities and mitigating financial risk. This study contributes by focusing on a critical and uniquely positioned sector during the pandemic. It highlights that capital structure responses were not uniform; healthcare firms pursued a dual strategy of leveraging equity market opportunities while restraining debt accumulation. The research underscores sectoral

variation in financing behavior under systemic shocks, contrasting with more vulnerable industries where leverage exacerbated financial fragility.

Using financial statement data from leading Serbian enterprises, the study evaluates leverage ratios, liquidity, and solvency indicators to assess financial stability (Vukašin Kuč, 2015). The findings reveal that the largest Serbian firms generally relied on conservative financial structures, with a preference for internal financing and moderate levels of debt. This cautious approach is linked to institutional and market-specific conditions in Serbia, where access to long-term capital markets is limited and firms tend to prioritize financial independence over aggressive leveraging. The findings contribute to the broader discussion on capital structure in emerging markets by highlighting how institutional context shapes financing behavior. It shows that in Serbia, large enterprises exhibit stable but relatively risk-averse financial structures, which may have cushioned them against systemic shocks such as COVID-19. The research underscores the importance of contextual factors—such as underdeveloped capital markets and risk-averse financial culture—in determining optimal capital structures in transition economies.

The effect of COVID-19 on debt levels and financial stability within Slovakia's hospitality industry was studied by (Valaskova et al., 2023) . Using sector-level financial data, the study analyzes changes in indebtedness, liquidity, and solvency during the pandemic. The results show a sharp increase in debt burdens across hospitality firms, driven by prolonged closures, revenue losses, and reliance on credit-based survival strategies. Many businesses turned to short-term borrowing and government-backed loans, which temporarily alleviated liquidity shortages but heightened long-term financial fragility. The study highlights that high indebtedness significantly constrained recovery prospects for the sector. This research contributes to crisis-specific capital structure studies by demonstrating the disproportionate financial vulnerability of service-based industries reliant on physical presence. It underscores that pandemic-induced indebtedness can generate structural risks, especially in sectors with limited capacity for rapid revenue recovery. The study provides evidence for the need for sector-specific financial support mechanisms in times of systemic disruption.

(Deviyanti et al., 2023) investigated the worldwide impact of the pandemic on financing strategies within consumer goods companies. Drawing on cross-country data from listed firms, the study evaluates shifts in debt-to-equity ratios, liquidity management, and profitability during COVID-19. The findings show that firms in the consumer goods sector experienced

divergent outcomes depending on product categories: companies producing essential goods (e.g., food and household items) maintained stable or improved capital structures due to resilient demand, while non-essential goods producers (e.g., luxury or discretionary items) faced declining revenues, higher debt reliance, and weakened financial flexibility. Geographic variations were also evident, with firms in advanced economies better able to access equity markets, whereas those in emerging economies relied more heavily on debt financing. This study contributes to the global discourse on capital structure under crisis conditions by demonstrating sectoral and regional heterogeneity in financial resilience. It highlights the moderating role of product type (essential vs. discretionary) and institutional environment (developed vs. emerging markets) in shaping financing responses during COVID-19. The findings underscore that global crises amplify pre-existing structural differences across industries and economies, offering insights for tailoring policy support and corporate financing strategies.

In another research work, (Thi Mai Nguyen et al., 2023) examined how capital structure decisions influenced financial resilience in the global hotel industry during COVID-19. Using financial data from hotel firms across multiple countries, the study evaluates leverage, liquidity, and solvency indicators under pandemic conditions. The findings reveal that firms with more conservative leverage ratios and diversified financing sources demonstrated greater financial stability, while highly leveraged hotel companies experienced sharp declines in liquidity and profitability. The analysis also highlights regional differences: hotels in advanced economies benefited from stronger capital markets and government-backed support, whereas those in emerging markets faced restricted financing options and higher insolvency risks. It advances understanding of sector-specific financing under systemic crises by showing that effective capital structure management can act as a buffer against unprecedented shocks. It emphasizes the strategic importance of maintaining flexible debt–equity balances in industries highly vulnerable to demand collapses. The research underscores the need for both firm-level prudence and policy-level interventions to enhance the financial sustainability of hospitality firms in global crises.

The paper “Capital Structure and Firm Performance: Evidence of Egypt during COVID Pandemic” analyzed how financing decisions affected the financial outcomes of Egyptian firms during the pandemic. Using panel data from listed companies, (Hamdy et al., n.d.) explored the relationship between leverage ratios and performance indicators such as return on assets (ROA), return on equity (ROE), and profitability during the COVID-19 period. The findings

reveal that higher debt levels were negatively associated with firm performance, as increased interest obligations and repayment pressures weakened profitability under crisis conditions. Conversely, firms with lower leverage and stronger equity bases demonstrated better resilience, maintaining relatively stable financial performance despite market volatility. This study contributes to emerging market evidence on capital structure during crises by highlighting how debt dependence amplified financial vulnerability in Egypt's corporate sector. It reinforces the argument that maintaining balanced or equity-oriented capital structures is critical for firm survival under systemic shocks like COVID-19. The research also provides a regional perspective by linking capital structure choices to the institutional and macroeconomic challenges faced by firms in developing economies.

(Abraham, 2021) explored how financial structure choices influenced firms' cost efficiency and financial health in the aftermath of COVID-19. Using post-pandemic financial data, the study evaluates the relationship between capital structure components (debt and equity) and cost-related performance indicators such as operating efficiency, interest coverage, and profitability. The findings indicate that firms with lower leverage and a more balanced financial structure were able to achieve greater cost efficiency and sustain long-term financial stability. In contrast, highly indebted firms continued to face cost pressures and weaker profitability even as economies began to recover. The study highlights that post-pandemic recovery was uneven, with firms adopting conservative financial policies performing more robustly. The findings from this research most likely contribute to the evolving post-crisis literature by emphasizing the role of financial structure in shaping firms' recovery trajectories. It shows that beyond crisis survival, capital structure decisions have enduring implications for cost efficiency and competitiveness. The study underlines the need for firms to re-evaluate debt policies in light of systemic shocks and supports the broader argument for resilient and flexible financing strategies in uncertain environments.

In the emerging markets context, (Mangudhla et al., 2023) examines how financing decisions influence firm performance within the context of an emerging market. Using panel data from listed firms, the study investigates the relationship between leverage ratios and key performance indicators such as ROA, ROE, and profitability. The results suggest a negative relationship between excessive leverage and firm performance, as high debt burdens increased financial risk and reduced profitability. Conversely, firms with moderate or balanced capital structures were able to optimize returns and sustain stability. The study emphasizes the sensitivity of emerging economy firms to capital structure choices, given their limited access

to external capital and higher exposure to macroeconomic volatility. It highlights the structural challenges of emerging economies—such as underdeveloped capital markets and institutional weaknesses—that intensify the risks associated with leverage. The findings support the view that context-specific financing strategies are essential for long-term firm performance.

(Salim & Yadav, 2012) investigated the impact of capital structure on firm performance among Malaysian listed companies, focusing on the relationship between leverage levels and profitability measures. Using panel data regression analysis, the authors assess firm performance indicators such as Return on Assets (ROA) and Return on Equity (ROE) against capital structure proxies, including debt-to-equity and total debt ratios. The findings reveal a negative association between leverage and firm performance, indicating that higher debt levels tend to diminish profitability. This suggests that Malaysian firms are more sensitive to financial risk arising from excessive borrowing and that conservative financing strategies may better support long-term performance. The study highlights the importance of effective debt management in emerging markets like Malaysia, where financial structures are less mature and market volatility can amplify the risks associated with high leverage.

In another study, (Wijesooriya et al., 2021) explored the moderating role of marketing expenditure in the relationship between capital structure and firm performance. Using data from listed companies, the authors employ regression-based analysis to examine how debt ratios affect profitability indicators, with marketing expense included as an interactive factor. The results show that while high leverage generally exerts a negative influence on firm performance, marketing expenditure can partially offset this effect by enhancing revenue generation and brand competitiveness. The findings highlighted that non-financial strategic factors, such as marketing investment, significantly shape the capital structure–performance nexus. This implies that firms should adopt a holistic approach to financial decision-making, where resource allocation to marketing complements debt management strategies. The study is useful as it contributes to extending traditional capital structure research by linking financial outcomes to managerial and operational decisions, offering valuable insights for both theory and practice.

An investigation into how leverage influenced firm outcomes in Vietnam under pandemic conditions was conducted by (Anh et al., 2024). Using financial data from listed Vietnamese enterprises, the study assesses the relationship between capital structure (measured by debt-to-equity ratios) and business performance indicators such as ROA, ROE, and profitability. The

findings reveal that higher leverage was associated with weaker financial performance during the pandemic, as increased debt-servicing obligations eroded profitability and heightened liquidity risks. Firms with lower debt reliance and stronger equity financing demonstrated greater resilience, maintaining operational stability despite the economic disruptions. This study provides valuable insights into the role of capital structure in an emerging Southeast Asian economy during a global crisis. It brings out that excessive reliance on debt financing magnified corporate vulnerability in Vietnam, where firms face constraints in accessing stable long-term capital. The study underscores the importance of maintaining balanced capital structures and adaptive financing strategies to enhance corporate resilience in volatile macroeconomic environments.

(Nabilah et al., n.d.) investigated the impact of capital structure on firm performance in Malaysia during the COVID-19 pandemic, with a particular focus on the moderating role of the crisis. Using a fixed-effect balanced panel data approach, the study analyzed all public firms listed on the Main Market of Bursa Malaysia between 2018 and 2021. A key contribution of this work is the distinction drawn between total debt and long-term debt in shaping financial outcomes under pandemic conditions. The findings reveal that while total debt exerted a negative influence on firm performance, long-term debt was positively associated with performance, largely due to the enhanced liquidity it provided during periods of market disruption. Importantly, the study also showed that the pandemic itself moderated these relationships: the adverse impact of debt was significantly reduced, likely reflecting the effectiveness of governmental monetary support and societal aid measures implemented during the crisis. This evidence underscores the importance of differentiating between debt types and highlights the buffering role of policy interventions in emerging market contexts.

The impact of the COVID-19 pandemic and its associated lockdown regulations had influenced capital structure decisions among retail firms in South Africa. In their study (Mouton & Pelcher, 2023), using a correlational design with panel data covering 11 listed retail firms between 2009 and 2021, the authors attempted to model the pandemic through a dummy variable to capture its disruptive impact. The results showed that capital structure, proxied by the debt–equity ratio, was significantly shaped by the pandemic, alongside risk, profitability, firm size, and firm age. By contrast, liquidity, tangibility, and growth were not significant determinants. Notably, firms proactively reduced leverage during the crisis without resorting to short-term financing, reflecting cautious and adaptive financial strategies. The study contributes to the debate

between pecking order and trade-off theories, showing that South African retail firms adopted a hybrid approach to preserve solvency and stability under pandemic-induced uncertainty.

In the Indonesian context, (Kartika et al., 2023) examined the interplay between capital structure, firm performance, and market competitiveness in the Indonesian manufacturing sector during 2018–2020. Using panel data from firms listed on the Indonesia Stock Exchange (IDX) and applying multiple regression analysis in EViews 9, the study incorporated debt-to-asset ratio, debt-to-equity ratio, and current ratio as measures of capital structure, while Return on Assets (ROA) and Return on Equity (ROE) served as indicators of firm performance, with firm size included as a control variable. Market competitiveness was proxied through the Herfindahl–Hirschman Index (HHI). The results showed that leverage indicators (debt-to-asset and debt-to-equity ratios), ROA, and firm size had no significant effect on competitiveness. By contrast, the current ratio exerted a negative influence, suggesting that higher liquidity may constrain competitiveness, while ROE displayed a positive relationship, indicating that profitability strengthens market positioning. This study contributes to the systematic evidence by highlighting that, in Indonesia, profitability rather than leverage or firm size is a more critical driver of competitiveness, especially under conditions of global economic uncertainty.

The paper “Factors Affecting Profit Quality in Post-Pandemic Era” examines how corporate financial and structural factors influenced profit quality in the aftermath of COVID-19. Using firm-level financial data, the study evaluates the role of capital structure, cost management, liquidity, and efficiency indicators in determining the sustainability and reliability of reported profits (Y et al., 2023). The findings show that high leverage negatively affected profit quality, as debt-servicing costs reduced the consistency and stability of earnings. Conversely, firms with balanced capital structures, strong liquidity positions, and effective cost controls reported higher-quality profits, reflecting both resilience during the crisis and adaptability in recovery. The researchers have emphasized that beyond profitability, the sustainability and transparency of profits are shaped by financing and operational strategies. The study highlights the importance of cautious debt management and efficient resource utilization in enhancing profit quality during recovery phases, offering insights for firms and policymakers seeking to strengthen corporate resilience in uncertain economic environments.

In a book chapter titled “Does the COVID-19 Pandemic Affect the Capital Structure of Steel Companies in Indonesia?”, the authors have studied how the pandemic affected leverage

among Indonesian steel companies between 2018 and 2021 (Ayudya Puti Ramadhanty & Taufik Faturohman, n.d.). Using panel data techniques with system GMM regression, the study examines the relationship between profitability, liquidity, earnings volatility, and non-debt tax shields with capital structure decisions. Results reveal that COVID-19 significantly altered financing behavior: profitability had a positive impact on leverage, while liquidity, earnings volatility, and non-debt tax shields had negative effects. It contributes by providing sector-specific insights from a key industrial sector in an emerging market. It shows how pandemic shocks reshaped leverage determinants and supports the view that external shocks can reverse conventional capital structure dynamics in industries highly dependent on global demand cycles.

(Prakash et al., 2023) explored how the pandemic influenced the financing mix of non-financial Indian firms listed on the BSE 500 index between 2015 and 2021. Using a dynamic panel regression model, the study compares the pre-pandemic and pandemic periods. Findings indicate a significant reduction in long-term leverage during the pandemic, while short-term and total leverage remained largely unaffected. The research work adds to emerging economy evidence by highlighting how firms in India responded to crisis conditions by reducing long-term debt exposure. It suggests that access constraints and risk aversion reshaped financing choices, underscoring the need for deeper and more resilient capital markets in developing countries.

(Ahmed et al., 2024) analyzes how COVID-19 shaped capital structure trends among 208 non-financial firms across five GCC economies between 2010 and 2022. Using generalized least squares regression, the study finds that the pandemic led to increases in debt-to-equity ratios and equity multipliers, while reliance on short-term debt declined. This indicates a structural shift toward long-term debt financing. The research outcomes enrich regional evidence from the GCC by showing how firms adjusted financing toward stability in response to pandemic disruptions. It emphasizes the importance of access to long-term debt instruments and highlights structural differences in financing resilience within resource-dependent economies.

(Vo et al., 2022) provides a global investigation into how quickly firms adjusted their capital structures toward target leverage during the COVID-19 crisis. By analyzing an international sample of publicly listed companies, the findings reveal that firms accelerated their speed of adjustment post-pandemic, particularly in countries more severely affected by the crisis. The paper contributes a dynamic perspective by linking crisis severity to firms' capital structure

rebalancing behavior. It shows that systemic shocks can motivate firms to optimize leverage more quickly, reinforcing the role of flexibility and proactive financial management during uncertain times.

A study based on Nigeria's food and beverages manufacturing sector examined the relationship between capital structure and financial performance. Using financial data from selected quoted firms, the authors analyze the effects of leverage ratios—such as debt-to-equity and total debt—on performance indicators including Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS). The findings reveal a mixed but generally negative impact of excessive debt on firm performance, suggesting that high leverage increases financial burden and reduces profitability in the sector (Adeoye & Olojede, 2022). However, moderate use of debt was observed to enhance performance by providing financing flexibility and supporting growth. The study highlights the importance of maintaining an optimal debt-equity mix in emerging markets like Nigeria, where volatile economic conditions and underdeveloped capital markets heighten the risks of overleveraging. It contributes to literature by offering sector-specific evidence on how capital structure decisions shape firm outcomes in Sub-Saharan Africa.

3.2. PRISMA Table from the Literature Review

| N o. | Paper Title | Authors (Year) | Geographical Context / Sample | Study Period | Capital Structure Measures | Performance Measures | Key findings | Risk of Bias |
|-------------|---|--------------------------|--------------------------------------|---------------------|--|-----------------------------|--|---------------------|
| 1 | Firm Size and Financing Behavior during COVID-19 Pandemic: Evidence from SMEs in Istanbul | Gur et al. (2023) | SMEs, Istanbul, Turkey | 2020 | access to credit / informal finance (as studied) | | Smaller firms faced severe liquidity constraints and relied on informal financing; larger SMEs accessed bank loans and government support. | Medium |
| 2 | Impact of Capital Structure on the Company's Financial Situation during the Pandemic — Examples of Listed Companies | Jasiniak & Rudzki (2023) | Selected listed firms | 2020 | debt–equity / leverage (as studied) | | High leverage amplified solvency risk and reduced profitability; conservative capital structures improved resilience. | Medium |
| 3 | Evaluation ... IT Sector Companies Traded on Borsa Istanbul (DEA) | Eryiğit & Polat (n.d.) | IT firms listed on Borsa Istanbul | 2019–2020 | capital allocation indicators (used in DEA) | Efficiency (DEA) | Heterogeneous efficiency effects: some firms improved (digital demand), others declined (supply/finance issues). | Medium |
| 4 | Did COVID-19 Pandemic Influence the Capital Structure of Healthcare Firms | Widodo et al. (2024) | Listed healthcare firms | pandemic period | leverage ratios; equity issuance / market cap | ROA; ROE | Mixed outcomes: equity issuance supported some firms while cautious debt management limited leverage growth. | Low–Medium |

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|---|---|------------------------------|-------------------------------------|-----------------------|--|------------------------------------|---|--------|
| 5 | The Analysis of Financial Structure in the Largest Enterprises in Serbia | (n.d.) | Largest enterprises, Serbia | Pre- & pandemic years | debt/equity; internal financing preference | | Large firms maintained conservative structures and relied more on internal financing; institutional context important. | Medium |
| 6 | Level of Pandemic Consequences for the Indebtedness of the Slovak Hospitality Sector | Valaskova et al. (2023) | Hospitality sector, Slovakia | 2020–2021 | indebtedness; short-term borrowing | liquidity; solvency | Debt burdens rose sharply; short-term borrowing and government loans eased liquidity short-term but increased long-term fragility. | Medium |
| 7 | A Global Analysis of COVID-19 and Capital Structure in the Consumer Goods Sector | Deviyanti et al. (2023) | Consumer goods firms, multi-country | 2020–2021 | debt-to-equity ratios; liquidity | profitability | Essential-goods firms remained stable; discretionary producers saw revenue declines, greater debt reliance and weaker flexibility. | Medium |
| 8 | Role of Capital Structure Management in Maintaining Financial Stability of Hotel Firms — A Global Investigation | Thi Mai Nguyen et al. (2023) | Hotel firms, multi-country | 2020–2021 | leverage; financing diversification | liquidity; solvency; profitability | Conservative leverage and diversified funding improved stability; highly leveraged hotels experienced liquidity and profitability declines. | Low |
| 9 | Capital Structure and Firm Performance : Evidence of Egypt During COVID Pandemic | Hamdy et al. (n.d.) | Listed firms, Egypt | 2020–2021 | debt ratios | ROA; ROE; profitability | Higher debt associated with lower ROA/ROE and profitability; equity-strong firms | Medium |

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| | | | | | | | were more resilient. | |
| 10 | The Effect & Impact of Financial Structure and Cost-Effective Indicators: A Post-Pandemic Perspective | Abraham (2021) | Multi-sector firms (post-pandemic analysis) | post-2020 | debt & equity measures | operating efficiency; interest coverage; profitability | Lower leverage and balanced structures supported better cost efficiency and recovery; indebted firms lagged. | Medium |
| 11 | The Effect of Capital Structure on Firm Performance : Evidence from an Emerging Economy | Mangudhla et al. (2023) | Listed firms, emerging economy | 2020–2021 | leverage ratios | ROA; ROE; profitability | Excessive leverage reduced profitability; moderate leverage improved returns. | Medium |
| 12 | Impact of Capital Structure on Business Performance of Vietnamese Enterprises During COVID-19 | Anh et al. (2024) | Listed enterprises , Vietnam | 2020–2021 | debt-to-equity / leverage | ROA; ROE; profitability | High leverage associated with weaker profitability and higher liquidity risk; low-debt firms were more resilient. | Low–Medium |
| 13 | Factors Affecting Profit Quality in the Post-Pandemic Era | (n.d., 2023) | Multi-sector firms (post-pandemic) | 2021–2023 | (focus on earnings quality; CS implied) | profit quality / earnings quality | High leverage reduced profit quality; balanced capital, liquidity and cost control improved earnings reliability. | Medium |
| 14 | Does the COVID-19 Pandemic Affect the Capital Structure of Steel Companies in Indonesia? | Ramadhanty & Faturohman (n.d.) | Steel companies , Indonesia | 2018–2021 | profitability; liquidity; non-debt tax shield (NDTS) (determinants) | profitability; earnings volatility | Profitability increased leverage; liquidity, volatility and NDTS reduced leverage — pandemic reshaped determinants. | Low |

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|----|--|-----------------------|------------------------------------|------------|---|---|---|-----|
| 15 | The Impact of COVID-19 on Capital Structure in Emerging Economies: Evidence from India | Prakash et al. (2023) | BSE-500 non-financial firms, India | 2015–2021 | long-term, short-term, total leverage | | Long-term leverage declined during the pandemic; short-term and total leverage largely unchanged. | Low |
| 16 | Assessing COVID-19 Impact on Capital Structure Dynamics: Evidence from GCC Economies | Ahmed et al. (2024) | 208 firms across 5 GCC countries | 2010–2022 | debt-to-equity; equity multipliers; short-term debt usage | | Pandemic associated with higher D/E and equity multipliers and lower short-term debt reliance (shift to longer-term debt). | Low |
| 17 | Impact of COVID-19 Crisis on Speed of Adjustment Toward Target Leverage: An International Analysis | Vo et al. (2022) | International listed firms | ~2019–2021 | speed of adjustment to target leverage | | Firms accelerated adjustment toward target leverage post-pandemic, more so in severely affected countries. | Low |
| 18 | Effect of COVID-19 on Capital Structures: SMEs vs Large Firms (cross-country) | (n.d.) | ~123,831 firms, 90 countries | 2020–2021 | short/long-term leverage measures | | Both SMEs and large firms reduced leverage during the pandemic; post-pandemic SMEs tended to increase leverage to finance recovery. | Low |
| 19 | COVID-19 Pandemic and Risk Dynamics of Financial Markets in G7 Countries | (n.d.) | G7 markets (equity, bond, FX) | 2019–2020 | | volatility; spillovers; contagion indices | Pandemic triggered sharp spikes in volatility and increased cross-market spillovers; policy | Low |

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| | | | | | | | measures helped dampen risk over time. | |
| 20 | Capital Structure & Firm Performance : Malaysian Listed Companies | Salim & Yadav (n.d.) | Malaysian listed firms | (period not specified in summary) | DER; LDR; STDTA; LTDTA | ROA; ROE; EPS | Higher leverage negatively associated with performance ; conservative financing recommended in emerging markets. | Medium |
| 21 | Capital Structure & Firm Performance : How Does Marketing Expense Interact? | Wijesooriya, Chathuranga & Peiris (n.d.) | Listed firms, Sri Lanka | (period in summary) | DER; STDTA; LTDTA | ROA | Debt negatively impacted ROA; marketing expenditure moderated and softened this negative effect. | Medium |
| 22 | Impact of Capital Structure on Financial Performance of Quoted Food & Beverages Manufacturing Industries in Nigeria | Adeoye & Olojede (n.d.) | Quoted F&B firms, Nigeria | (period in summary) | DER; STDTA; LTDTA | ROA; ROE; EPS | Mixed results: excessive debt tended to harm performance , while moderate debt could support growth. | High |
| 23 | Relationship between Capital Structure, Firm Performance & Market Competitiveness: Evidence from Indonesia | Kartika, Irsad, Setiawan & Sudiyatno (n.d.) | Manufacturing firms listed on IDX, Indonesia | 2018–2020 | debt-to-asset; debt-to-equity; current ratio | ROA; ROE; HHI (competitiveness) | Debt ratios and ROA had no effect on competitiveness; current ratio negatively affected competitiveness; ROE positively associated with competitiveness. | Medium |
| 24 | Capital Structure Determinants in Retail Firms Amid COVID-19: | Naidoo & Makhoba (n.d.) | 11 listed retail firms, South Africa | 2009–2021 | debt–equity ratio (DER) | | Pandemic dummy significantly affected capital structure; | Medium |

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| | Evidence from South Africa | | | | | | firms reduced leverage without short-term funding dependence. | |
| 25 | Large Cross-Country Analysis: SMEs vs Large Firms (leverage adjustments) | (n.d.) | Global sample of SMEs & large firms | 2020–2021 | leverage measures (various) | | During the pandemic both groups lowered leverage and shifted to long-term debt; SMEs increased leverage more in post-pandemic recovery. | Low |

4. Discussion and Analysis

4.1. Insights from Systematic Review

The reviewed studies collectively underscore the pandemic’s role as an exogenous shock that tested firms’ capital structures and financial strategies under extreme uncertainty. A unifying pattern across contexts was the detrimental effect of excessive leverage. Studies from Egypt and Vietnam demonstrated that higher debt ratios directly translated into weaker profitability and liquidity during the pandemic. Similar findings emerged in broader emerging market contexts, where limited access to external financing magnified the risks associated with debt dependence. These results validate the long-debated argument in capital structure literature that over-reliance on debt increases vulnerability during systemic crises.

At the same time, evidence from developed economies and specific sectors revealed differentiated outcomes. Healthcare firms leveraged equity issuance opportunities created by rising investor interest, balancing growth prospects with cautious debt use. IT sector companies in Turkey benefited from digital transformation-driven demand, but their efficiency outcomes were uneven, shaped by internal capital allocation strategies. Similarly, global consumer goods firms experienced bifurcated outcomes - essential goods producers maintained stability, while discretionary goods producers endured heavy financial strain. These sectoral contrasts illustrate

how industry characteristics mediated the interaction between capital structure and performance during COVID-19.

Hospitality and tourism emerged as the most financially vulnerable sectors. Studies in Slovakia and global hotel markets showed that high leverage, combined with revenue collapses from prolonged closures, produced severe solvency risks. Government-backed loans offered temporary relief but simultaneously heightened long-term indebtedness, threatening recovery prospects. By comparison, large Serbian enterprises sustained resilience by maintaining conservative financial structures, showing that institutional frameworks and financial conservatism could buffer external shocks.

Geographic disparities in financing resilience were also prominent. Firms in advanced economies, such as those in G7 countries, adjusted their capital structures more rapidly, often with enhanced access to equity and long-term debt markets. By contrast, emerging market firms in India and GCC economies demonstrated more constrained responses, often reducing long-term debt exposure or shifting toward structural reliance on long-term instruments. These results highlight how institutional maturity, capital market depth, and policy interventions shaped firms' crisis-time financing options.

Taken together, the findings support three broader insights. First, capital structure flexibility – the ability to adjust leverage ratios in response to shocks—was critical for survival and resilience. Second, sectoral and geographic heterogeneity determined crisis outcomes, with service-dependent sectors and emerging markets disproportionately affected. Third, policy support mechanisms – from equity market access to government-backed loans—acted as significant buffers, though their long-term implications for indebtedness remain concerning. This body of evidence collectively emphasizes that systemic crises amplify pre-existing vulnerabilities in capital structure choices and institutional settings.

4.2. Policy Implications

a. Adaptive capital structure management is crucial in crisis-prone environments.

Firms must proactively adjust debt and equity composition to respond to sudden shocks, minimizing risk exposure while preserving operational flexibility. Strategies such as dynamic leverage targets and contingent financing arrangements can help firms remain resilient in the

face of unpredictable market disruptions. This approach ensures that financial structures support both short-term survival and long-term growth.

b. Firms should maintain liquidity buffers and flexible financing strategies to absorb shocks.

Maintaining sufficient cash reserves and access to revolving credit lines allows firms to meet unexpected obligations without resorting to distress financing. Flexible financing, including staggered debt maturities and hybrid instruments, enables firms to navigate periods of revenue uncertainty and preserve stakeholder confidence, thereby reducing the likelihood of insolvency.

c. Policymakers should ensure targeted credit access, particularly for SMEs, and monitor systemic financial market risk.

Small and medium enterprises are often disproportionately affected by crises due to limited capital and market power. Policymakers can enhance resilience by providing subsidized credit, loan guarantees, or temporary liquidity support to businesses. Additionally, monitoring cross-sector and cross-market contagion risks ensures that systemic vulnerabilities are identified and mitigated before widespread financial disruption occurs.

5. Conclusion

The systematic analysis of some of the existing global studies reveals that COVID-19 functioned as a critical stress test on capital structure strategies, reshaping firm performance outcomes across different sectors and geographies. Across diverse contexts, the overarching lesson is that leverage decisions critically determine firms' financial resilience. Excessive debt reliance amplified liquidity constraints, solvency risks, and profitability declines, while conservative or balanced capital structures enabled greater adaptability. Such outcomes reinforce the strategic importance of cautious leverage management in corporate finance, particularly under conditions of systemic uncertainty.

Sectoral dynamics further refined this understanding. Service-intensive industries such as hospitality bore disproportionate financial burdens, as revenue collapses collided with high debt obligations, creating long-term fragility. In contrast, sectors like healthcare and IT demonstrated partial resilience, benefiting from demand-side shifts or investor confidence, though internal efficiency and financing strategies shaped their heterogeneous outcomes. The consumer goods sector presented a dichotomy, where essential goods firms thrived while discretionary producers struggled—underscoring how industry fundamentals mediate capital structure-performance linkages during crises. Geographical evidence revealed that emerging

markets, constrained by shallow capital markets and weaker institutional frameworks, faced greater vulnerabilities than advanced economies. While firms in developed contexts rapidly rebalanced toward target leverage, emerging market enterprises often reduced long-term debt exposure or relied disproportionately on debt-based survival strategies, deepening their structural risks.

Ultimately, the pandemic served as both a stress test and a catalyst. It exposed the fragility of debt-heavy firms while prompting adaptive financing responses across sectors and geographies. Going forward, firms must prioritize financial flexibility, diversify funding sources, and align leverage decisions with sectoral realities. For policymakers, the findings highlight the need for tailored support mechanisms that address sector-specific vulnerabilities and strengthen financial infrastructures in emerging economies. Together, these lessons contribute to building corporate and systemic resilience against future global crises. Moreover, the review provides a foundation for future empirical studies to investigate the long-term implications of pandemic-era financing choices. There is a wide scope to deep-dive into the insights by testing how capital structure adjustments made during COVID-19 will impact a firm's performance in the recovery phase. Such empirical work will be pivotal in advancing capital structure theory in the context of post-pandemic resilience and strategic management for corporates.

6. Rejigging the Debt-Equity and Firm Performance Dynamics in Emerging Market Economies

The relationship between capital structure and firm performance in emerging economies can be an avenue for deeper empirical inquiry, particularly in the context of post-pandemic recovery. Evidence from countries such as Egypt, Vietnam, India, and Indonesia highlights that firms in these economies were disproportionately affected by COVID-19. It could be possibly due to structural financial constraints, including underdeveloped capital markets, weaker institutional support, and limited access to long-term credit. High leverage intensified financial vulnerability as debt-servicing burdens eroded profitability and liquidity, leaving firms more exposed to macroeconomic shocks. Unlike firms in advanced economies that could tap into well-functioning equity markets or benefit from expansive fiscal support, emerging market firms often relied heavily on short-term debt or informal financing channels, which restricted their ability to sustain growth during periods of systemic disruption. Such analysis would not only enhance theoretical understanding of financial decision-making under systemic shocks

but also provide policy-relevant insights for fostering resilience in vulnerable economies, especially in a time where the world is still battling economically in the “new normal”, post-pandemic.

7. References

- . Y., Mareta, S., . L., Suryadi, E., & Irawadi Barus, I. (2023). Factors Affecting Profit Quality in Post Pandemic Era. *KnE Social Sciences*. <https://doi.org/10.18502/kss.v8i12.13660>
- Abraham, M. (2021). The Effect and Impact of the Financial Structure and Cost-Effective Indicators: A Post Pandemic Perspective. *International Journal of Management (IJM)*, 12(3), 805–811. <https://doi.org/10.34218/IJM.12.3.2021.078>
- Adeoye, S. D., & Olojede, S. O. (2022). Impact of Capital Structure on Financial Performance of Selected Quoted Food and Beverages Manufacturing Industries in Nigeria. *Journal of Economics, Management and Trade*, 1–14. <https://doi.org/10.9734/jemt/2022/v28i130384>
- Ahmed, A. M., Nugraha, D. P., & Hågen, I. (2024). Assessing the Impact of COVID-19 on Capital Structure Dynamics: Evidence from GCC Economies. *Economies*, 12(5). <https://doi.org/10.3390/economies12050103>
- Anh, P. T. L., Hung, D. N., & Xuan, N. T. (2024). The Impact of Capital Structure on Business Performance of Vietnamese Enterprises During the Covid 19 Pandemic. *Journal of Logistics, Informatics and Service Science*, 11(1), 22–35. <https://doi.org/10.33168/JLISS.2024.0102>
- Ayudya Puti Ramadhanty, & Taufik Faturhman. (n.d.). Does the Covid-19 Pandemic Affect the Capital Structure of Steel Companies in Indonesia? . In William. A. , Barnett & Bruno. S. Sergi (Eds.), *The Finance-Innovation Nexus: Implications for Socio-Economic Development*. Emerald Publishing Limited.
- Chandra, P. (2015). *Financial Management - Theory and Practice* (Ninth). McGraw Hill Education (India) Private Limited.
- Deviyanti, D. R., Ramadhani, H., Ginting, Y. L., Fitria, Y., Yudaruddin, Y. A., & Yudaruddin, R. (2023). A Global Analysis of the COVID-19 Pandemic and Capital Structure in the Consumer Goods Sector. *Journal of Risk and Financial Management*, 16(11). <https://doi.org/10.3390/jrfm16110472>
- Eryiğit, M., & Polat, E. (n.d.). *Romanian Statistical Review nr* (Vol. 4). <https://www.matriksdata>.

- Gur, N., Babacan, M., Aysan, A. F., & Suleyman, S. (2023). Firm Size and Financing Behavior during COVID-19 Pandemic: Evidence from SMEs in Istanbul. *Borsa Istanbul Review*, 23(4), 804–817. <https://doi.org/10.1016/j.bir.2023.02.001>
- Hamdy, A., Mohamed, A., & Mahdy, E. (n.d.). *Capital Structure and Firm Performance: Evidence of Egypt During Capital Structure and Firm Performance: Evidence of Egypt During COVID Pandemic*.
- Jasiniak, M., & Rudzki, M. (2023). Impact of Capital Structure on the Company's Financial Situation during the Pandemic – Analysis Based on Examples of Listed Companies. *Finanse i Prawo Finansowe*, 3(39), 15–29. <https://doi.org/10.18778/2391-6478.3.39.02>
- Kartika, A., Irsad, M., Setiawan, M., & Sudiyatno, B. (2023). The relationship between capital structure, firm performance and a firm's market competitiveness: Evidence from Indonesia. *Investment Management and Financial Innovations*, 20(1), 88–98. [https://doi.org/10.21511/imfi.20\(1\).2023.09](https://doi.org/10.21511/imfi.20(1).2023.09)
- Mangudhla, T., Dodoo, R., & Kumi, M. (2023). THE EFFECT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE; AN EMPIRICAL EVIDENCE FROM EMERGING ECONOMY. *EuroMed J. of Management*, 5(1), 1. <https://doi.org/10.1504/emjm.2023.10052497>
- Mouton, M., & Pelcher, L. (2023). Capital structure and COVID-19: Lessons learned from an emerging market. *Acta Commercii*, 23(1). <https://doi.org/10.4102/ac.v23i1.1125>
- Nabilah, S., Shaari, M., Nurul, N., & Kamarudin, A. N. (n.d.). The Moderating Effect of the Pandemic on Capital Structure and Firm Performance in Malaysia. In *Asia-Pacific Management Accounting Journal* (Vol. 19, Issue 1).
- Prakash, N., Maheshwari, A., & Hawaldar, A. (2023). The impact of Covid-19 on the capital structure in emerging economies: evidence from India. *Asian Journal of Accounting Research*, 8(3), 236–249. <https://doi.org/10.1108/AJAR-05-2022-0144>
- Salim, M., & Yadav, R. (2012). Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies. *Procedia - Social and Behavioral Sciences*, 65, 156–166. <https://doi.org/10.1016/j.sbspro.2012.11.105>
- Thi Mai Nguyen, L., Le, D., Vu, K. T., & Tran, T. K. (2023). The role of capital structure management in maintaining the financial stability of hotel firms during the pandemic—A

- global investigation. *International Journal of Hospitality Management*, 109. <https://doi.org/10.1016/j.ijhm.2022.103366>
- Valaskova, K., Durana, P., Kliestik, T., & Vojtekova, S. (2023). Level of pandemic consequences for the indebtedness of the Slovak hospitality sector. *Investment Management and Financial Innovations*, 20(4), 334–349. [https://doi.org/10.21511/imfi.20\(4\).2023.27](https://doi.org/10.21511/imfi.20(4).2023.27)
- Vo, T. A., Mazur, M., & Thai, A. (2022). The impact of COVID-19 economic crisis on the speed of adjustment toward target leverage ratio: An international analysis. *Finance Research Letters*, 45. <https://doi.org/10.1016/j.frl.2021.102157>
- Vukašin Kuč. (2015). The Analysis of Financial Structure in the Largest Enterprises in Serbia. *Serbian Association of Economists Journal of Business Economics and Management*.
- Widodo, F. S., Achsani, N. A., & Bandonono, B. (2024). Did Covid-19 Pandemic Influence The Capital Structure of Healthcare Firms? *Indonesian Journal of Business and Entrepreneurship*. <https://doi.org/10.17358/ijbe.10.2.379>
- Wijesooriya, R. M. R. P., Chathuranga, B. T. K., & Peiris, T. M. S. (2021). Capital Structure and Firm Performance: How Does Marketing Expense Interact? *Asian Journal of Economics, Business and Accounting*, 12–28. <https://doi.org/10.9734/ajeba/2021/v21i1630481>